LIS 326

COURSE GUIDE

Course Information

Course Code:	**LIS 326**
Course Title:	**LIS 326: INTRODUCTION TO APPLICATION PACKAGES**
Credit Unit:	**2**
Course Status:	**Elective**
Semester:	**2ⁿᵈ**
Required Study Hour:	**4 hours per week**
Edition:	**First**

Course Team   Prof. Charles O. Omekwu, University of Nigeria (Course Writer)

Ice Breaker

Upload your passport and introduce yourself by stating your names, what you do for a living, your hobbies, expectations in this course and the name you would prefer to be called during this course.

UNIT 2 USING TEXT IN POWERPOINT AND USING PICTURES IN POWERPOINT   108

NATIONAL OPEN UNIVERSITY OF NIGERIA

LIS 326: INTRODUCTION TO APPLICATION PACKAGES

INTRODUCTION

The Course LIS 326: Introduction to Application Packages runs for one Semester. It has two credit loads and it is for students in the undergraduate programme in Library and Information of the National Open University of Nigeria. It consists of five modules divided into 16 units. The overall goal of LIS 326 is to introduce students to various application packages. The packages will include general purpose and specialized application software. The general-purpose software will include word processing, spreadsheets, presentation, and graphics. Students will also be introduced to database development software like Access 2000. Furthermore, students will be introduced to specialized accounting, web development, and multi-media packages.

COURSE OBJECTIVES

To achieve the above aims, a set of relevant objectives have been formulated to guide LIS 326. Focusing on these objectives is critical to students' self-evaluation as the course progresses. Students should be able to do the following at the end of the course:

- Define and describe application software.
- Differentiate between general purpose and specialized application packages.
- Understand and use Microsoft word processing package.
- Understand Excel spreadsheet and its users
- Master the use of Microsoft PowerPoint for presentation.
- Describe graphic packages.
- Learn the fundamentals of database development packages with practical applications using Access 2000.

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LIS 326: INTRODUCTION TO APPLICATION PACKAGES

LIS 326 Modules and Units

The five modules of this course are divided into 17 study units as indicated below:

MODULE 1: DEFINITION AND DESCRIPTION OF APPLICATION SOFTWARE

Unit 1: Introduction to Application Packages

Unit 2: Types or Categories of Application Packages

Unit 3: Common Features of Software

MODULE 2: WORD PROCESSING PACKAGE

Unit 1: Microsoft Word Basics

Unit 2: Working with Texts

Unit 3: Layout and Printing

MODULE 3: SPREADSHEET

Unit 1: Microsoft Excel Basics

Unit 2: Formulae and Functions

Unit 3: Working with Cells and Sheets

Unit 4: Working with Data

MODULE 4: PRESENTATION PACKAGES

Unit 1: PowerPoint Basics

Unit 2: Working with Slides

Unit 3: Texts and Objects

MODULE 5: GRAPHICS DESIGN AND DATABASE

Unit 1: Introduction to Graphics Design

Unit 2: Introduction to Adobe Photoshop

Unit 3: Introduction to CorelDraw

Unit 4: Introduction to Microsoft Access

Course Materials

Students who take this course will be presented with relevant materials to facilitate their learning experience. The materials will include

● Recommended textbooks;

● LIS 326 Course guide;

● Study Units;

● Appropriate sources; and

● Assignment file

 Students who consult and use the above materials are likely to be better than those who fail to do so.

Assessment

The Presentation Schedule

Tutor Marked Assignments

Final Examination and Grading

Undertaking this course is like an adventure and some vital steps/secrets will guarantee successful completion of LIS 326. The first secret is to understand that LIS326 is practically intensive. The second vital step is to personally practice in each application

package's environment. Students should studiously cover the modules and units of the course. Fourthly, get and read recommended textbooks and other materials related to the course. Fourthly, actively participate in the practical session and online facilitation at the study centre. Fifthly, master the course content/structure consisting of introduction, aims, and objectives, expected outcomes, summary, and conclusion. Sixthly, access online resources by clicking on the links provided in this module. Take special notice of the electronic books published by Wiley Press and Microsoft Press. Seventhly, complete all Tutor-Marked Assignments which are objective assessments of your progress in the course. Finally, downloading the courseware will assist you to study it ubiquitously.

ASSESSMENT

Assessment for LIS 326 will consist of formative and summative approaches. The formative approach is administered at the end of each study Unit and the goal is to help students objectively assess their progress or learning outcomes. For LIS 326 there will be three continuous assessments of 10% each (30% in all). The final approach is in the form of a Computer-Based Test (CBT). The final examination is compulsory for all students.

GETTING THE BEST OUT OT LIS 326

It is possible to maximise your moment in LIS 326. Please note that this course is offered in the Open and Distant learning model. Consequently, ownership of hardware device like a laptop or another electronic device is imperative. Internet access is also critical to enable download of e-resources and courseware. Computer literacy, the internet and information literacy are essential to effectively navigate the electronic landscape which is the operational platform for this Course.

MODULE 1: DEFINITION AND DESCRIPTION OF APPLICATION SOFTWARE

Unit 1: Introduction to Application Packages

Unit 2: Types or Categories of Application Packages

Unit 3: Common Features of Software

UNIT 1: INTRODUCTION TO APPLICATION PACKAGES

1.1   Introduction

1.2   Learning Outcomes

1.1   INTRODUCTION

This unit aims to layout an introduction to the subject of application packages. Also, this unit will introduce you to the concepts of versions, releases, and compatibility as they relate to application packages. Getting to know about application packages will be both fascinating and an enriching computer application experience. Get ready to do the Self-Assessment Exercises (SAEs) at the end of the various section of this Unit. Welcome to the world of application packages..

1.2   LEARNING OUTCOMES

At the end of this unit the students should be able to:

- define the concept application packages
- explain the meaning of versions, releases, and compatibility
- understand the basic operations of application packages

1.3   Introduction to Application Packages

1.3.1 Definition of Application Software

Software's can be defined as a set of instructions that instruct a computer on how to perform various tasks. Applications software is software that has been developed to perform useful work on specific tasks, or particular problems, or provide entertainment for users. As users, you interact with the application's software. System software enables the applications software to interact with the computer and helps manage its internal resources. Generally, it is considered as any set of commands that guides or tells the hardware how to accomplish a given task. If you buy a new microcomputer in a store, you will find that some packaged software have already been installed on it. This typically includes system software (e.g., operating system) and various types of applications software compatible with it. Application Software's are programs designed for end users which allow end-users to accomplish a set of specific tasks. This might include among others i.e., programs to find solutions to users' problems.

As has been before, the software can be divided into systems software (i.e., these are programs designed to control the execution and utilization of other programs and hardware effectively) and applications software (i.e., these are programs to solve users' problems). Systems software is generally supplied by hardware manufacturers. In this section, let us look at some general points on applications software. Applications software comprises the method and guides which enable computer systems to do what the user requires. Software design essentially involves three abstract concepts. These are algorithms, data structures, and file structures.

Algorithms are simply the steps for computation. They may either be numerical or non-numerical, for example, sorting, text searching, etc. Data structures, on the other hand, indicate how information is organized in the computer's memory.

Self-Assessment Exercise1: What is software?

1.4   Versions, Releases, & Compatibility

After certain period software developers enhance their products and put forth new versions or new releases. Although not all software developers use the terms consistently, their accepted definitions are as follows.

- Version: A version can be said to be a major upgrade of a software product. Traditionally versions have been indicated by numbers such as 1.0, 2.0, 3.0, and so forth. The higher the number preceding the decimal point, the more recent the version. In recent years, some software developers have departed from this system. An example is when Microsoft launched Windows 95" instead of calling it windows 4.0.

- Release: A release can be said to be a minor upgrade. Release is indicated by changing the number after the decimal point – 4.0, then 4.1, then perhaps 4.11, then 4.2, and so on.

- Compatibility: Compatible means what has been created or modified in earlier versions of the software can be processed successfully by later versions. Compatible also means that a new version of an applications program will run with the system software you are currently using. To avoid issues arising with incompatibility it is advisable to read the software package before buying it.

Self-Assessment Exercise 2: What are the differences between system and application packages?

1.5. Points to note on application packages

Basically, it can be said that a software package is a program written to help a computer perform the required tasks. Software is a set of instructions to help a computer do its job. Application packages are software programs written to support tasks that a computer was originally allowed to do; they are developed according to the needs of computer users. Most of the time the application software has to be installed by the user. This means that the application packages you may have on your computer will be different from what others may have on your system because each user has different needs or tasks to perform. In addition, application software is available in various versions and versions. And the system properties determine which packages will work on the computer depending on the system capacity.

Self-Assessment Exercise 3: What do you understand by compatibility of application software?

1.6 SUMMARY

In this unit, we have examined the concept of software and application packages. It has been seen from this unit that without software a computer system cannot function and that application packages help to perform specific tasks on the computer.

1.7   Glossary

Applications software: Developed to perform useful work on specific tasks, or particular problems, or provide entertainment for users.

Release: A release can be said to be a minor upgrade of a software.

Software: Defined as a set of instructions that instruct a computer on how to perform various tasks.

Version: A major upgrade of a software product

1.8 REFERENCES/FURTHER READING

Ikekeonwu, G. A. M & Oguike, O. E. (2017). Computer Applications. Department of Enugu: Computer Science, University of Nigeria, Nsukka., 307 .

Lawrence Rosen (2004). *"Why the public domain isn't a license"*. rosenlaw.com

Hanwell, Marcus D. (28 January 2014). *"Should I use a permissive license? Copyleft? Or something in the middle?"*. opensource.com.

1.9 Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise1: What is a software?

Answer to SAE 1:

Software's can be defined as a set of instructions that instruct a computer on how to perform various tasks. Applications software is software that has been developed to perform useful work on specific tasks, or particular problems, or provide entertainment for users.

Self-Assessment Exercise 2: What are the differences between system and application packages?

Answer to SAE 2

Systems software is generally supplied by hardware manufacturers. In this section, let us look at some general points on applications software. Applications software on the other hand, comprises the method and guides which enable computer systems to do what the user requires.

Self-Assessment Exercise 3: What do you understand by compatibility of application software?

Answer to SAE 3:

Compatible means what has been created or modified in earlier versions of the software can be processed successfully by later versions. Compatible also means that a new version of an applications program will run with the system software you are currently using. To prevent issues arising with incompatibility it is advisable to read the software package before buying it.

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UNIT 2: CATEGORIES OF APPLICATION SOFTWARE

CONTENT

2.1   INTRODUCTION

We have treated the subject of application packages in the previous unit and this unit aims to treat five major categories of application software.

2.2   LEARNING OUTCOMES

At the end of this unit the students should be able to:

- ❑ define the concept of entertainment Software, Home/Personal Software, Education/Reference Software, Productivity Software, Specialty Software
- ❑ differentiate the features of the five major categories of application software

2.3   Entertainment Software and Home/Personal Software

Application software may be classified in many ways. In this unit, we are going to use five categories. That is:

- Entertainment software
- Home/personal software
- Education/reference software
- Productivity software
- Specialty software

Let us consider them briefly.

2.3.1 Entertainment Software

Entertainment Software refers to a wide variety of software, it can refer to video games, software for watching videos or playing music, displaying pictures, and other forms of entertainment which users can experience through a computer device. It can also be said that entertainment software is type of software that provides opportunities for leisure activities or any form of entertainment.

We can say that due to the loose definition of entertainment software, there is quite a lot of software that fall into this category. One of the most well-known sectors of entertainment software is video games or the gaming industry, we can see how popular video games are if we take a look around, from adventure games like tomb raider to sports games like FIFA, NBA to action games like Call of Duty to simple games like candy crush and it's not all games that are for leisure purpose, we also have educational games like Hangman, Scrabble, etc. Video games have been around since the '70s and they have developed rapidly to the point that modern-day games almost look as good as the real world. The first set of video games was not as realistic as modern games, they had basic visual representation and were small in size, as small as a few MB compared to modern games that are almost as large as 100GB. We had famous games like Pac-Man, Space Invader, Pong, etc. that introduced people to video games and it didn't take long before the audience fell in love with video games, which lead to the creation of more and more video games.
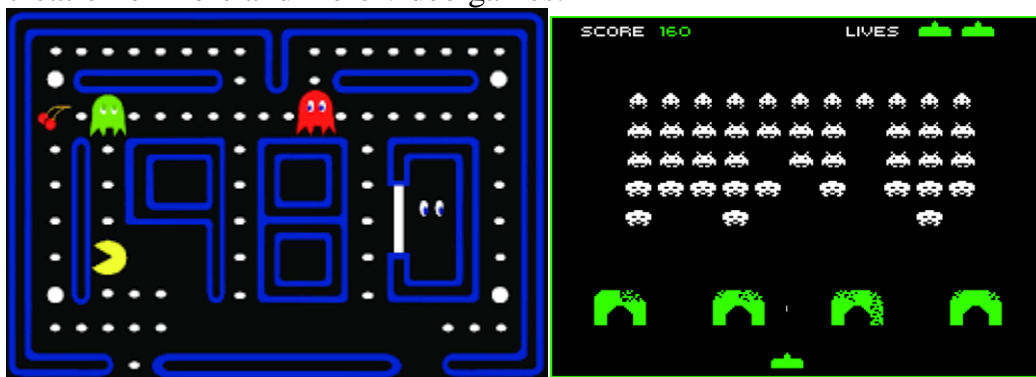
Figure 1.1 Image of Pac-Man Game: Source::Researchgate.net   Figure 1.2: Image of Space Invaders; Source: Smithsonianmag.com

Figure 1.3:*Image of FIFA Video Game*
Source: Goal.com

Another category is the Media Software, this can be for media creation and editing or for playing media files (movies and music). Though this category may not be as popular as the gaming category, they are still quite widely known. We also have various software for watching movies like VideoLAN (VLC), KMPlayer:, Netflix, etc., or listening to music like iTunes, Deezer, etc. All this software enables us to watch videos or listen to music on our Computers. We also have software for creating or editing video and music, which include Sony Vegas pro, adobe Photoshop, shazam, sound cloud, virtual DJ, etc. both the video and music editors work similarly, they can create, replace, delete, adjust, transform and do anything to the frames on the screen. This has created endless opportunities for content creators and professional workers.
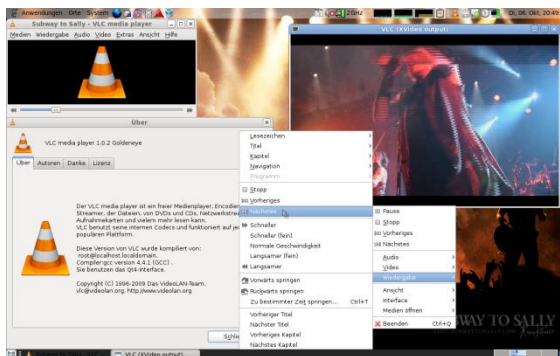
Figure 1.4:*Image of VideoLAN*
Source:Videolan.org
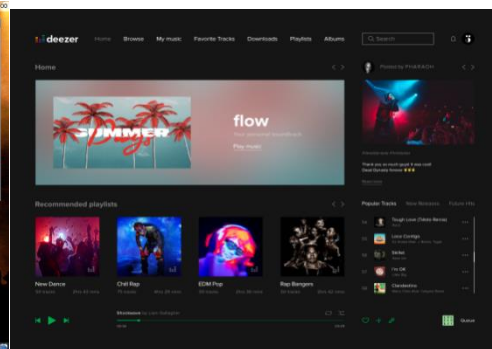
Figure 1.5:*Image of Deezer*
Source: https://dribbble.com/tags/deezer

Figure 1.6:*Image of Virtual DJ*
Source: digitaldjtips.com

Figure 1.7*: Image of Sony Vegas Pro*
Source: getintopc.com

Entertainment Software are not solely for leisure purposes, we also use it for educational purposes. Children love to be entertained, they love to have fun and it is also easy to instruct children through educational games or videos, this is commonly used in modern schools and it has proven to be very efficient. Educational games come in various forms and sizes; some are general while others offer a more specialized educational experience, examples include Minecraft which is used by architectural schools for the project, Kahoot which can be said to be an educational platform. Overall, there are so many different ways to teach kids while having fun, that it's a great thing that such software exists. Because this means modern children have many new opportunities to be interested in learning and have fun while doing it.

All this shows that entertainment software plays an important role in our daily lives, from movies to music to video and music editing to educational games.

2.3.2 Home/Personal Software

Personal software or Personal application software can be said to be software one uses for their purpose, this implies that it is software you use to complete a certain task that relates to you, technically personal software does not have to be unique, it just has to be software that various individuals can use for their purpose. It is also known as home application software because it is intended for home, private use.

Most software that we use is personal software because of various reasons apart from being intended for home and private use, they come most times with instructional use, they are comparatively cheaper than any other category of application software, they also increase personal productivity and effectiveness.

Based on this description of personal software we can give an example of personal software which is Microsoft Office. Microsoft Office is considered as an example of personal software because it caters to a lot of activities in our daily lives, for example, Microsoft word is used for typing documents like research papers, projects, lesson notes, assignments, etc. Microsoft Office is also one of the most popular if not the most popular personal software in the world today, apart from that it is also very cheap to acquire and easy to use. Other examples

are our various web browsers like Google Chrome, Safari, Firefox, Explorer, etc. they enable us to have access to the web and to browse it. The common feature among all these examples are that One, we use them for personal purposes. Two, we use them in our daily activities. Three, they are cheap to get, and most even come along with our device, and finally, they increase personal effectiveness.

2.4   Education/Reference Software and Productivity Software

2.4.1 Educational/Reference Software

Educational software are programs that are mainly developed for teaching and learning. It covers a wide range of different purposes right from language learning software to reference software to classroom management software to video instruction software etc. The potential of educational software was recognized early by educational professionals, this lead to educational software arriving virtually with the first desktop computers. Educational software covers a large area of different forms, costs, and purposes, some exist to instruct children on various letters in the alphabet, others include introducing complex concepts to all grades, some are also for developmental purposes in the aspect of good writing skills, good speaking skills, etc. some are designed for instructing professionals various details of their job, etc. some examples include Encarta, Google Classroom, Litmos, Moodle, etc.

There are various categories of educational software which include: One, Courseware, these are additional materials that can either be intended as kits for teachers or tutorials for students, in most cases, they are documents intended to provide further assistance. Two, Classroom Aids, are specifically designed for use in school classrooms. When such software are used they are typically displayed on large whiteboards e.g. Moodle. Three, Specific Educational purpose, these are highly specific software that is used mainly teaching on a specific subject or instruct on a specific task e.g. driving test software, language learning software, etc. Other categories include corporate training, custom platforms reference software, and assessment software.

2.4.2 Productivity Software

Productivity software just as the name implies is used for the production of information which could be in the form of databases, documents, worksheets, charts, graphs, etc. It is primarily used for increasing productivity especially among office workers. A bundle of productive software intended to be used by office workers is known as Office Suite. The components are generally distributed together, have a consistent user interface, and usually can interact with each other.

The most popular kinds of productivity tools are:

- ❑ Word processing software
- ❑ Spreadsheet software
- ❑ Database software, including personal information managers

- ❑ Financial software, including personal finance programs
- ❑ Software for cyberspace – communications, e-mail, Web browsers
- ❑ Integrated software and suites.

It may still be possible to work in an office these days without knowing any of these programs. However, that probably won't be the case as we move along into the 21st century. We shall describe productivity software in more detail beginning in another few pages.

Figure 1:8: *Example of a Productive Software*

2.5. Specialty Software

Whatever your occupation, you will probably find it has specialized software available to it. This is so whether your career is as an architect, building contractor, pilot, etc.Some programs help architects or engineers to be able to simulate buildings before building them. Other programs help construction estimators pull together the costs of materials and labour needed to estimate a job.
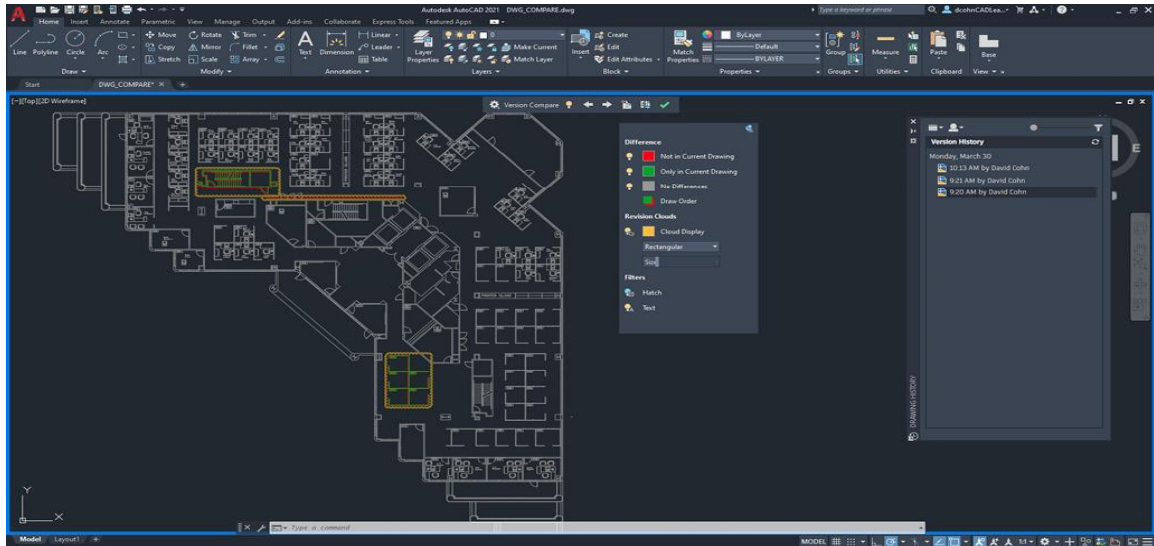
Figure 1:9 *Image of AutoCAD Software: A specialty software for engineers and Architects*

Source:www.digitalengineering247.com

2.6   SUMMARY

Various categories of application software help to carry out various tasks ranging from education-related tasks and entertainment. Users determine which of these categories they install depending on their needsIn this unit, we have gone through the five major categories of application packages. It is clear that users have the choice to install any or all of the categories.

Self-Assessment Exercise1: List the various categories of application software you know.

Self-Assessment Exercise 2: *What are the most popular productivity tools?*

2.7   Glossary

1. Entertainment Software: Entertainment Software refers to a wide variety of software, it can refer to video games, software for watching videos or playing music, displaying pictures, and other forms of entertainment which users can experience through a computer device.

2. Educational Software: Educational software are programs that are mainly developed for teaching and learning.

3. **Productivity software:** Productivity software just as the name implies is used for the production of information which could be in the form of databases, documents, worksheets, charts, graphs, etc.

2.8 REFERENCES/FURTHER READING

Ikekeonwu, G. A. M & Oguike, O. E. (2017). Computer Applications. Department of Enugu: Computer Science, University of Nigeria, Nsukka., 307 .

Morstabilini, Andrea (2011). *"Book Review: The Guide to Classic Graphic Adventures*; Adventure Gamers.

Mulrooney, Marty (2011). *"BOOK REVIEW – Hardcoregaming101.net Presents: The Guide to Classic Graphic Adventures*". UK: Alternative Magazine Online

Foulkes, L.(2020). *Learn Microsoft office 2019: a comprehensive guide to getting started with Word, PowerPoint, Excel Access, and Outlook*. Birmingham: Packt publishing.

2.9   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1: List the various categories of application software you know.

*Answer to SAE 1:*There are at least five categories of application software. These are:

- ❑ Entertainment software
- ❑ Home/personal software
- ❑ Education/reference software
- ❑ Productivity software
- ❑ Specialty software

Self-Assessment Exercise 2: *What are the most popular productivity tools?*

Answer to SAE2:

The most popular kind of productivity tools are:

- ❑ Word processing software
- ❑ Spreadsheet software
- ❑ Database software, including personal information managers
- ❑ Financial software, including personal finance programs
- ❑ Software for cyberspace – communications, e-mail, Web browsers
- ❑ Integrated software and suites.

UNIT 3: COMMON FEATURES OF SOFTWARE

CONTENTS

3.1 INTRODUCTION

Having treated the various application packages, this unit aims to focus on the various features of typical software or application. The lesson will pay attention to the user interface, explore the issue of tutorials and documentation as well as the issues of help for users, and other useful software assistants.

3.2 LEARNING OUTCOMES

At the end of this unit the students should be able to:

- ❑ Explain the basic features in a typical user interface
- ❑ Explain the use of tutorials and documentation

❑ Define what the concept of freeware, shareware, and proprietary software

3.3 The User Interface

The following discussion provides a brief review of some features common to both applications software and system software.

The User Interface or UI is the point at which we the users interact with a computer program or application, the main goal of the user interface is to make the user experience easy, enabling the user to achieve a maximum outcome with minimal effort. The type of user interface is usually determined by the system. There have been various types of interface in the past but the currently most used or widely known is the Graphic User Interface or GUI as it is commonly known. It is a form of user interface which allows users to interact with a computer through graphical icons and an audio indicator. Various actions in GUI are usually performed by directly manipulating the graphical elements.

Figure 1.10: Image of a Graphic User Interface for Windows
Source:https://www.itpro.co.uk/operating-systems/30248/what-is-a-graphical-user-interface

Common features of GUIs are menus, windows, icons, buttons, and dialog (dialogue) boxes.

❑ **Menus**: A *menu* is a list of available commands shown on the screen. It is a list of command options presented to a user of a computer system.

A *menu bar* is a horizontal bar that contains the labels for drop-down menus which is usually anchored to the top of a window, coming most times after the title bar.
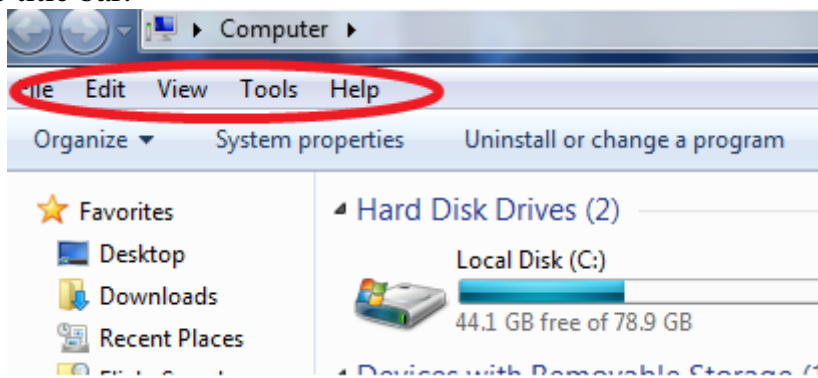
Figure 1.11: Image of a Menu Bar in File Explorer
Source: Screenshot

A *drop-down menu* is a list of commands options that "drop down" from a selected menu bar item at the top of the screen. It allows a user to choose one value from the list. When it is inactive it shows a single value, when it is activated or clicked on it drops down a list of values or commands for a user to select one.
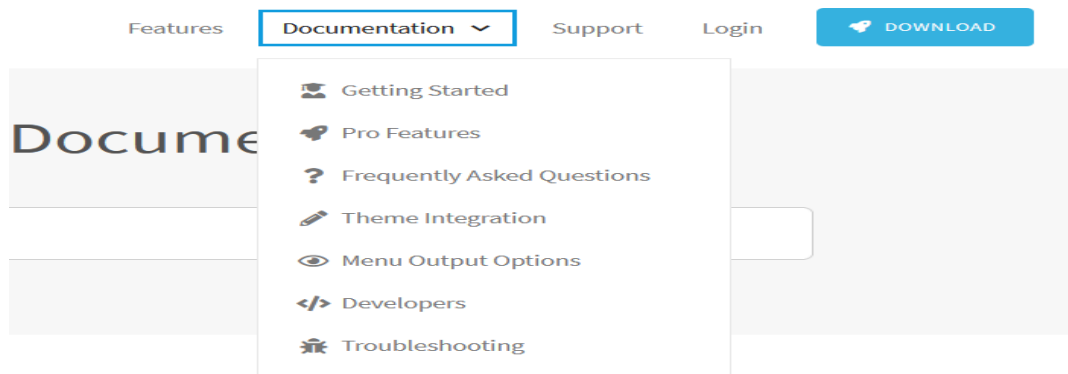
Figure 1.12: Image of an active Drop Down Menu
Source: Screenshot

A *pop-up menu*, also known as shortcut menu and context menu, refers to a hidden menu that doesn't show/appear until the user right-clicks. This menu is mostly referred to as a context menu because the menu that appears relates to what was right-clicked. For example in Microsoft word, if a text that is highlighted is right-clicked on, a pop-up menu similar to the example below will appear. This menu gives quick access to common features related to the text.
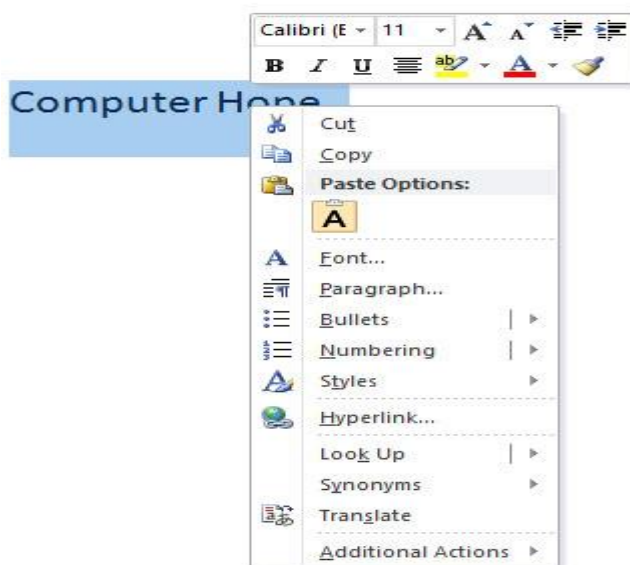
Figure 1.13: Image of a Pop Up Menu
Source: Screenshot

3.3.1 Windows

Window: A particularly interesting feature of GUIs is the use of windows. A *window* is the rectangular part of the computer display in the GUI that shows the program currently in use. For example, the browser window you use to explore the files on your system is a window. Windows allows users to work with multiple programs or view multiple programs at the same time. Most windows allow you to minimize and maximize them, allowing you to temporarily hide and show programs.
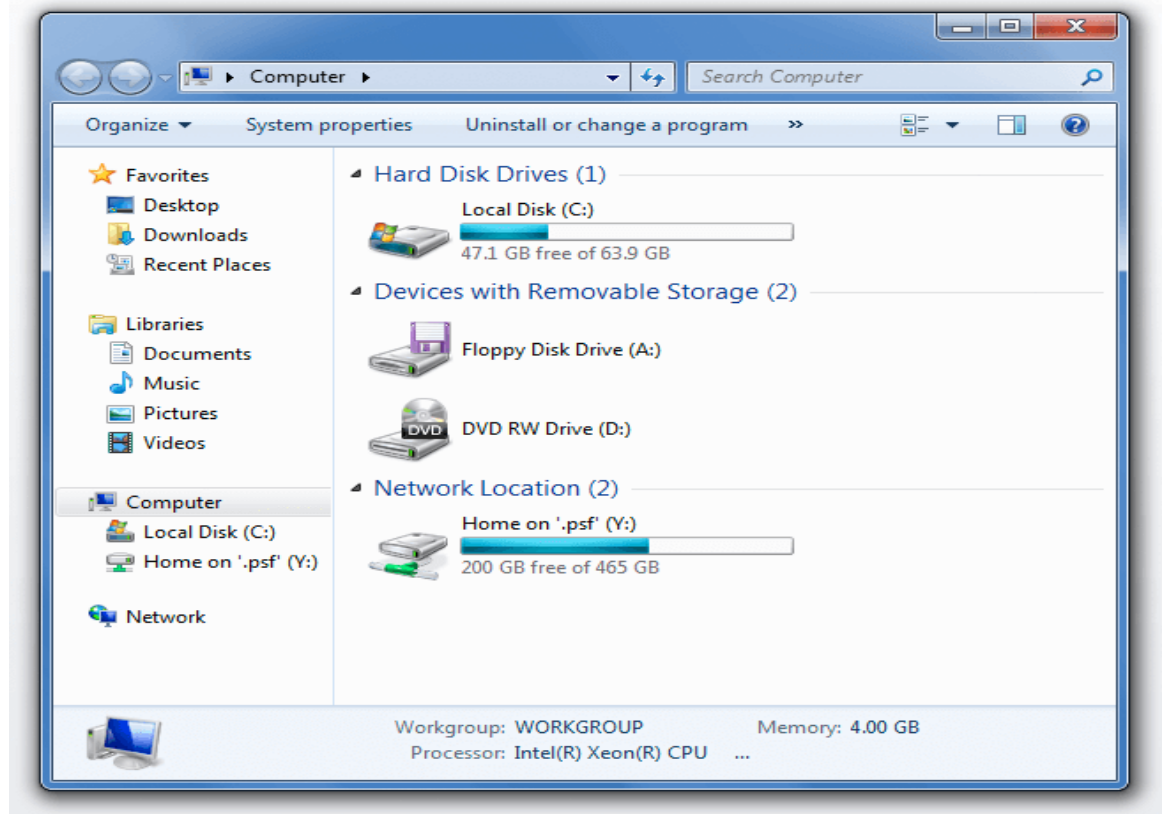
Figure 1.14: Image of a Window
Source: Screenshot

A window (small w) should not be confused with Windows (capital W) - the program known as Microsoft Windows, which is the most popular form of system software for the personal computer. However, as you might expect, Windows features extensive use of windows.

3.3.2 Icons

Icons: An *icon* is a small graphical representation of a program, function, or file. When you click or double-click an icon, the associated file or program opens or an action is performed. For example, if you double-click the This PC icon, Windows Explorer will open windows explorer.

Icons are components of GUI operating systems, including Apple's macOS X and Microsoft Windows. Icons help users quickly identify the type of file represented by the icon. The image is an example of the "My Computer" icon in various versions of Microsoft Windows.

Figure 1.15: Image of a Windows Screen with Various Icons
Source: Screenshot

3.3.2 Buttons:

A button is a graphic icon that may have text that performs a software function. For example, the Windows Start button is used to open the Start menu, the X button by the top right of a window s used to close the window.
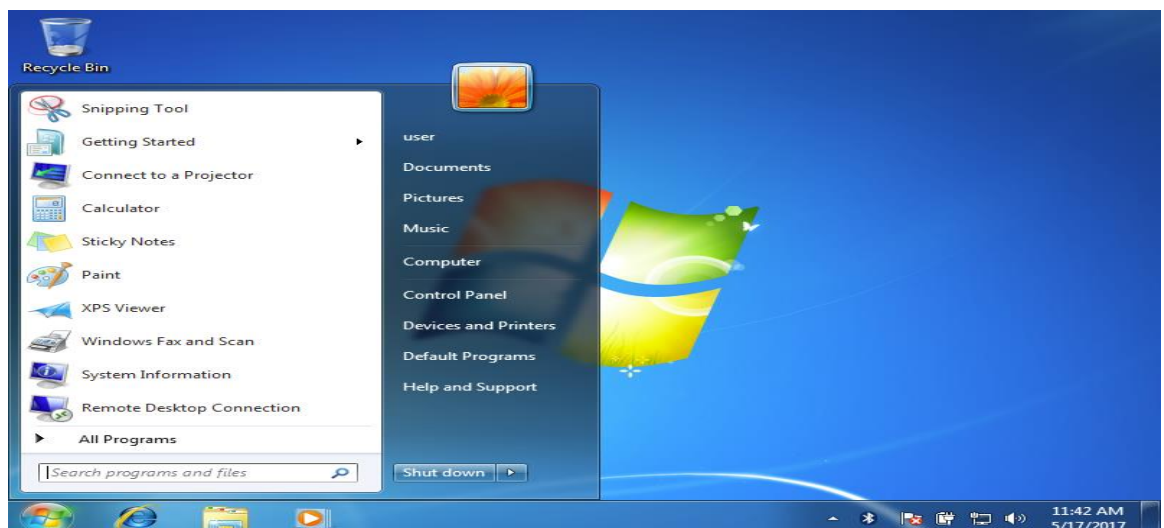
Figure 1.16: Image with the windows button clicked
Source: Screenshot

3.3.4 Dialog box

Dialogue (Dialog) box: A dialog box is a window that opens to allow communication between the computer and you, the user. Dialogue can ask questions or give you information. Generally, once a dialogue box appears, an action must be taken which relates to it before the user can access other applications.
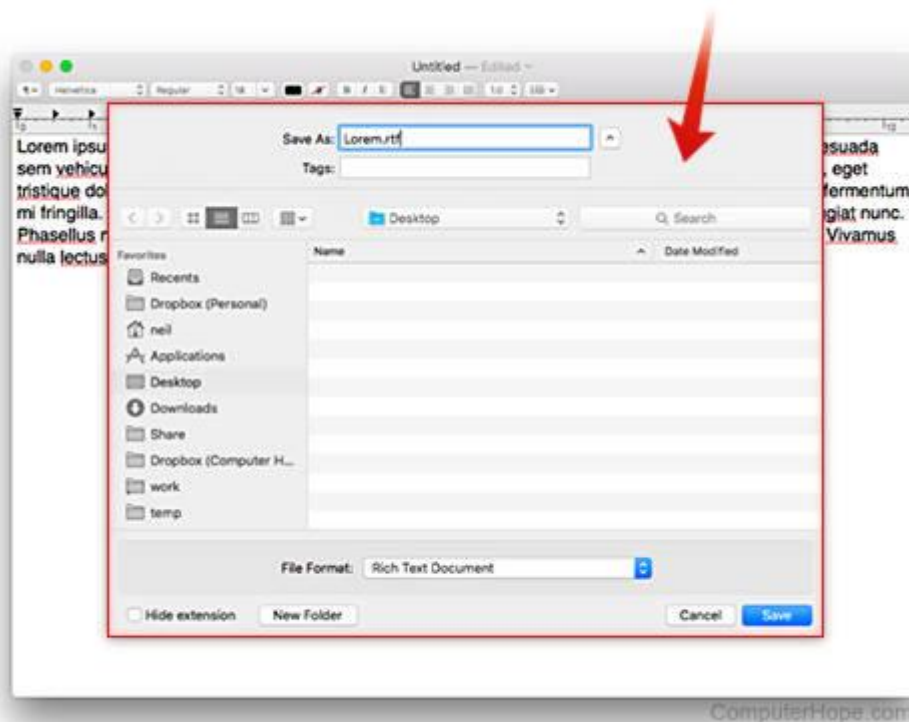
Figure 1.17: Image of a Dialogue Box

Source: Screenshot

3.4   Tutorials and Documentation and Helps for Software Users

3.4.1   Tutorials and Documentations

How does a new user intend to get familiarized with the program? Please note that commercial producers of application packages also provide tutorials and documentation along with products.

❑ **Tutorials:** A *tutorial* is a book, document, or video that shows a new user the walk through on how to get familiarized with the program**.** Take, for instance, publishers provide several books on how to get familiarized with the software package, sometimes they are provided as part of the software package.

Note: Not all software products come with tutorials.

❑ **Documentation:** *Documentation* can be said to be a short pictorial description of a program. The documentation may be in print, but today it is generally available on CD-ROM and the Internet. The documentation may be educational, but features and functions are generally grouped by category for reference.

Let us now consider the various forms of applications software used as productivity tools. Then we will cover specialty programs.

3.4.2 Help for Software Users

Why devote so much space to a discussion of the difficulties of software and risk frightening newcomers before they've even begun? Because it is easy for users (especially newcomers) to think that the reason they can't make a program work lies with their ineptness – when the culprit is the manufacturer making slipshod goods. There are, however, some sources of user assistance – although even here, to be forewarned is to be forearmed.

❑ **Instruction manuals:** User guides or instructions manuals printed on paper have traditionally accompanied boxes of applications software diskettes or CD-ROMs. Sometimes these are just what you need. Sometimes, however, you need to know what you need help with, and it may be difficult to define the problem. In addition, these guides may be a puzzle to anyone not trained as a programmer because they are often written by the very people who developed the software. And experts are not always able to anticipate the problems of the inexpert. More recently, software manufacturers have been giving short shrift to print-on-paper manuals. Says business-technical writer John Merchant, "as the software has become more complex, the (paper) user guides have become slimmer the drastically reduced time allowed to get new software products to market does not allow for comprehensive manuals to be written."

❑ **Help software**: Instead of printed manuals, software manufacturers now rely more on the "help" programs on a floppy disk or CD-ROM that come with the software, which contain various help menus. However, these can also include techno language that is confusing for newbies. As with paper manuals, utilities can be in the last-minute rush to publish them. Help programs may also be available on the Internet. The issue with going online is that, How do you go online to ask for help when the system is not working? Or how can you go online to get advice on how to fix your software and fix your software at the same time? (It helps to have two computers!).

❑ **Telephone helplines:** If you encounter a software glitch,   use a helpline to call a customer-support technician at the program's manufacturer. The tech would then try to talk you through the problem or might refer you to a Web site from which you could obtain a file that would remedy your

problem. Both software and hardware makers have long offered telephone helplines for customers. If your computer breaks down, you may find that your hardware company still offers emergency advice for free (although you may have to pay the phone company's long-distance tolls). However, software manufacturers now invariably charge for help calls if you have had the software longer than 30-90 days. This could run to a few hundreds or thousands of Naira depending on the arrangement you have with them. An analyst for Dataquest, a market-research firm based in the United States of America estimates that microcomputer users placed 200 million calls in 1999 to ask software questions. He also found the average time a user had to wait on hold was about 3 minutes. It is quite common to wait for 20 or 30 minutes – even at midnight – listening to bubbly music and a recorded voice urging you to "stay on the line for the next available technician."

❑ **Commercial how-to books:** Because of the inadequacies in user support by the software developers themselves, an entire industry has sprung up devoted to publishing how-to books. These are the kind of books found both in computer stores and in general bookstores such as Barnes & Noble or Abiola Bookshops, based in Lagos. Examples are the "For Dummies" or "Complete Idiot's" books (such as *Adobe Photoshop for Dummies* and The *Complete Idiot's Guide to Microsoft Office 2000 Professional*). It needs to be said, however, that many of these are guides to how to use a particular program – that is, they are tutorials, rather than fix-it manuals telling you how to make the software work right. Sometimes, some users complain that they are rather too technical to them.

❑ **Knowledgeable friends:** Believe it or not, nothing is better than having a knowledgeable friend: your teacher or mentor, a more advanced student than you, or someone with a technical interest in computers.. Business people pay millions of dollars to have computer technicians come into their offices and deal with software and hardware problems. However, many users can't afford expensive consultants. Thus, we can't stress enough how important it is to get to know people – from your classes, from computer user groups (including online Internet groups), from family friends, or whatever – who can lend aid and expertise when your computer software gives you trouble. As it assuredly will at some point. (And don't forget to do something for them in return!.)

A final word: If you are happy with a particular applications program, don't feel you have to go out and upgrade to the latest version just because everyone around you seems to be doing so. The ultimate test, after all, is: How useful is the software for you? You don't necessarily need to be influenced by the argument that something is "better, faster, and incorporates all the latest technology."

3.5. Public Domain Software: Freeware and Shareware and Propriety Software and Types of Licenses

1.5.1 Public Domain Software: Freeware, & Shareware

These are the general issues you need to consider when you are thinking about how to use someone else's intellectual property in the Digital Age. Now let's see how software fits in. No doubt most of the applications programs you will study in conjunction with this book will be commercial software packages, with brand names such as Microsoft Word or Excel. However, there are some software products – many available over communications lines from the Internet – that are available to you as *public domain software, freeware, or shareware.*

❑ **Public domain software:** *Public domain software* is software that can be duplicated by anyone meaning, it is not protected by copyright**.** Public domain programs have been donated to the public by their creators. They are made available through various sites, for example, GitHub; users can upload their systems and make them public if they want others to have access to it. With public domain software, you don't have to fear authorities if you make any changes to it, but in hindsight, we have to be careful of the free software we download some conceal malicious programs that can be harmful to your system.

❑ **Freeware:** *Freeware* is software that is available free of charge**.** Freeware is distributed without charge, usually through the Internet or among user groups. Software creators let their software go for free for seeing how the users response to the program to improve in the program, later on, sometimes it could be for a scholarly purpose. Freeware developers often retain all rights to their programs, so that technically you are not supposed to duplicate and distribute them further. Still, there is no problem with your making several copies for your use.

  ❑ **Shareware:** Shareware is copyrighted software that is distributed free of charge, but whose users must contribute to continue using it. Shareware is also distributed mainly through communication links such as the Internet. An example is WinZIP, a program for managing computer files that you can get from the Internet. "Trialware" versions of shareware are sometimes available on the Internet. This type of software has limited functionality (it is a weakened version of the real version) or the amount of time that the software can work is self-limited. After the trial period ends, the user pays a fee to get the fully functional version, or the software simply becomes unusable. Have trouble making copies of shareware for your friends? The developer hopes it will. In this way, the program is distributed to many people, some of whom the creator of the software expects to "contribute" or pay a "registration fee" for advice or updates. Although shareware copying is allowed, because it is copyrighted, you cannot use it as a basis for developing your software to compete with the developer.

3.5.2 Proprietary Software & Types of Licenses

Proprietary software is software whose rights belong to a person or a company, usually the software developer. The property is copyrighted and the owner expects you to buy a copy to use it. The software may not be legally used or copied without permission.

Software manufacturers don't sell you the software as much as a license to become an authorized user. What is the difference? By paying for a software license, you are signing an agreement that you agree not to make copies of the software for donation or resale. That is, you have only purchased the company's authorization to use the software and not the software itself. This legal subtlety allows the company to retain its rights to the program and restrict how its customers can use it. The fine print in the license agreement allows you to make one copy (backup or archive copy) for your use.

There are several types of licenses:

❑ **Shrink-wrap licenses:** Shrinkwrap licenses are printed licenses that are inserted into software packages and are visible through the clear plastic film. The use of shrink film licenses eliminates the need for a written signature, as the buyer knows they are entering into a binding contract simply by opening the package. Each Shrinkwrap license is for a single system.
❑ **Site licenses:** A site license allows a customer to make multiple copies of a software product for use only within a specific installation.
❑ **Concurrent-use licenses:** A concurrent use license allows the simultaneous use of a certain number of copies of software within a given installation. For example, if a concurrent use license is granted for 10 users within a company, all 10 users in the company can use the software at the same time..
❑ **Network single-user licenses:** A single-user network license limits the use of the software on a network to one user at a time.
❑ **Network multiple-user license:** A network multi-user license allows more than one person on a network to use the software. Each user is assigned a license and only those licensed as such can use the network software.

3.6. SUMMARY

This unit has treated the various features of software such as an interface, tutorials, and documents. It also took a look at some free and proprietary wares and how they make the use of certain software easier. Typical software will have the Users' Interface which contains the Windows, the Icons, the Buttons, and the Dialog box. To use the software a user must familiarize themselves with these features and correctly use them. Also, to make the use of the software easier,

most software packages have tutorials and documentation as part of the features in the software. These and other features on software packages make them easier to use and navigate.

Self-Assessment Exercise1: Mention the major features of graphic user interface (Graphic User Interface.
Self-Assessment Exercise 2: What are the sources of help for software users?
Self-Assessment Exercise 3: What type of licences are available to users?

3.7   Glossary

Public domain software: *A software* that can be duplicated by anyone meaning, it is not protected by copyright**.**
Freeware: *Freeware* is software that is available free of charge**.**
Shareware: Shareware is copyrighted software that is distributed free of charge, but whose users must contribute to continue using it
Proprietary software: Proprietary software is software whose rights belong to a person or a company, usually the software developer.
Tutorials: A *tutorial* is a book, document, or video that shows a new user the walk through on how to get familiarized with the program**.**

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3.9   Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise1: Mention the major features of Graphic User Interface.

Answer to SAE 1: Common features of GUIs are menus, windows, icons, buttons, and dialog (dialogue) boxes.

Self-Assessment Exercise 2: What are the sources of help for software users?

Answer to SAE 2:
The major sources of user assistance include:

❑ **Instruction manuals:** User guides or instructions manuals printed on paper

have traditionally accompanied boxes of applications software diskettes or CD-ROMs.

❑ **Help software**: Instead of printed manuals, software manufacturers now rely more on the "help" programs on CD-ROM that come with the software, which contain various help menus. Help programs may also be available on the Internet.

    ❑ **Telephone helplines:** If you encounter a software hitch, you can use a helpline to call a customer-support technician at the program's manufacturer. Both software and hardware makers have long offered telephone helplines for customers. If your computer breaks down, you may find that your hardware company still offers emergency advice for free (although you may have to pay the phone company's long-distance tolls).

❑ **Commercial how-to books:** Because of the inadequacies in user support by the software developers themselves, an entire industry has sprung up devoted to publishing how-to books. These are the kind of books found both in computer stores and in general bookstores Examples are the "For Dummies" or "Complete Idiot's" books (such as *Adobe Photoshop for Dummies* and The *Complete Idiot's Guide to Microsoft Office 2000 Professional*).

    ❑ **Knowledgeable friends:** Believe it or not, nothing is better than having a knowledgeable friend: your teacher or mentor, a more advanced student than you, or someone with a technical interest in computers..

Self-Assessment Exercise 3: What type of licences are available to users?

Answer to SAE 3:
There are at least five types of licenses available to software users. They include:

    ❑ **Shrink-wrap licenses:** Shrinkwrap licenses are printed licenses that are inserted into software packages and are visible through the clear plastic film. The use of shrink film licenses eliminates the need for a written signature, as the buyer knows they are entering into a binding contract simply by opening the package. Each Shrinkwrap license is for a single system.

    ❑ **Site licenses:** It allows a customer to make multiple copies of a software product for use only within a specific installation.

    ❑ **Concurrent-use licenses:** A concurrent use license allows the simultaneous use of a certain number of copies of software within a given installation. For example, if a concurrent use license is granted for 10 users within a company, all 10 users in the company can use the software at the same time..

    ❑ **Network single-user licenses:** A single-user network license limits the use of the software on a network to one user at a time.

    ❑ **Network multiple-user license:** The license allows more than one person on a network to use the software. Each user is assigned a license and only

those licensed as such can use the network software.

MODULE 2: WORD PROCESSING PACKAGE

UNIT 1: INTRODUCTION TO MICROSOFT WORD ENVIRONMENT

CONTENTS

1.1 INTRODUCTION

1.2 LEARNING OUTCOMES

1.3 Microsoft Basic 1: Microsoft word environment

1.3.1 The Tile bar

1.3.2   The Ribbon

1.3.3   The file tab and backstage view

1.1 INTRODUCTION

This Unit introduces students to Microsoft environment basics such as Title bar, ribbon ruler, keyboard shortcuts, and how to create, print, and save documents.

1.2 LEARNING OUTCOMES

After going through this Unit students gain an understanding of:

- the title bar, the Ribbon, the file tab and backstage view, Touch mode,

- how to use Ruler,

- how to use Scroll Bars,

- how to use Document View Buttons,

- how to use Zoom sliders,

- how to use the mini Toolbar,

- how to use Keyboard Shortcuts and learn how to create a document,

1.3. Microsoft word environment

The new Word environment is designed to more closely reflect the way people generally work with the program. Microsoft Word 2016 is a word processing application that allows you to create a variety of documents, including letters, resumes, and more. In this section, you'll learn how to navigate the Word interface and become familiar with some of its most important features, such as the Ribbon, Quick Access Toolbar, and Backstage view. Word 2016 is similar to Word 2013 and Word 2010. If you've previously used either version, then Word 2016 should feel familiar. But if you are new to Word or have more experience with older versions, you should first take some time to become familiar with the Word 2016 interface.

To open this application called Microsoft Word, go to the start button and click it, you will see all app there, look for the Microsoft icon and lunch it. This is the environment you will be working on, it comprises of the title bar, menu bar, standard toolbar, formatting toolbar, ruler, insertion point, End of Document Marker, Help, Scroll bars, Status Bar, Task pane, View Buttons, Office Assistant, etc.
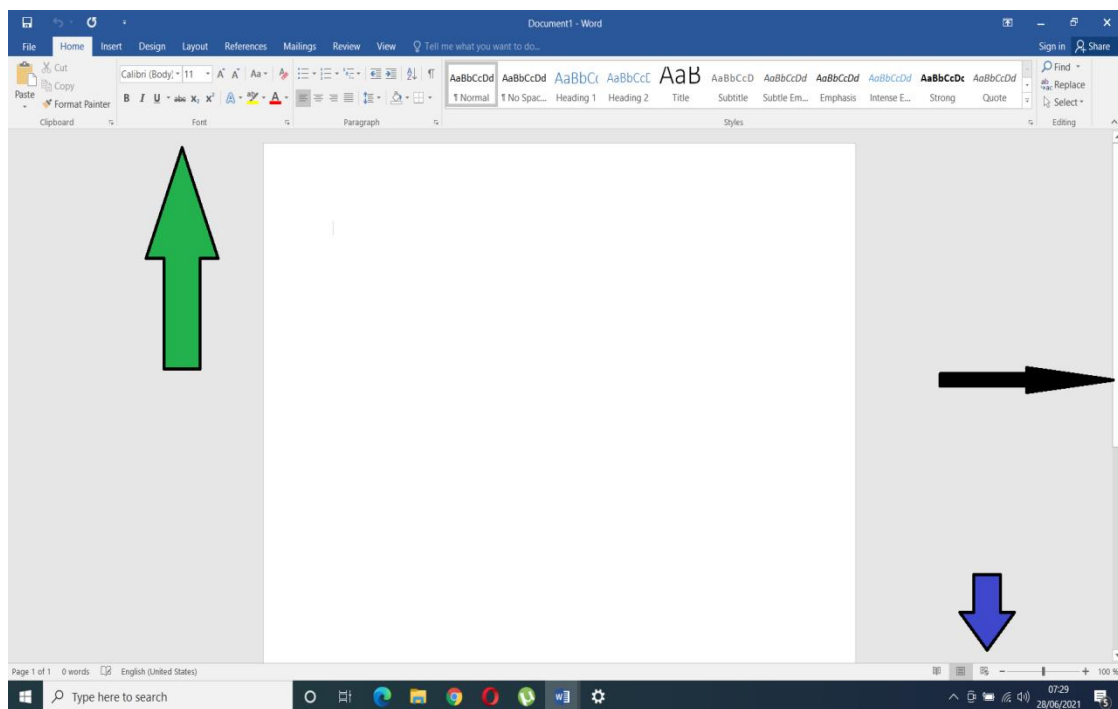
Figure 2.1: The tool bar
Source: Screenshot

1.3.1 The Tile bar
As seen above, by default it is titled "Document 1-Word". When you save as then you have the option to name it whatever you want to name it.

1.3..2 The Ribbon

As seen above, the ribbon is a set of toolbars at the top of the window in Office programs designed to help you quickly find the commands that you need to complete a task.

1.3.3   The file tab and backstage view

As seen above, The File tab is a colored tab, for example, a blue tab in Word, located in the upper-left corner of Microsoft Office programs while the backstage view provides access to saving, opening, info about the currently open file (Permissions, Sharing, and Versions), creating a new file, printing, and fc
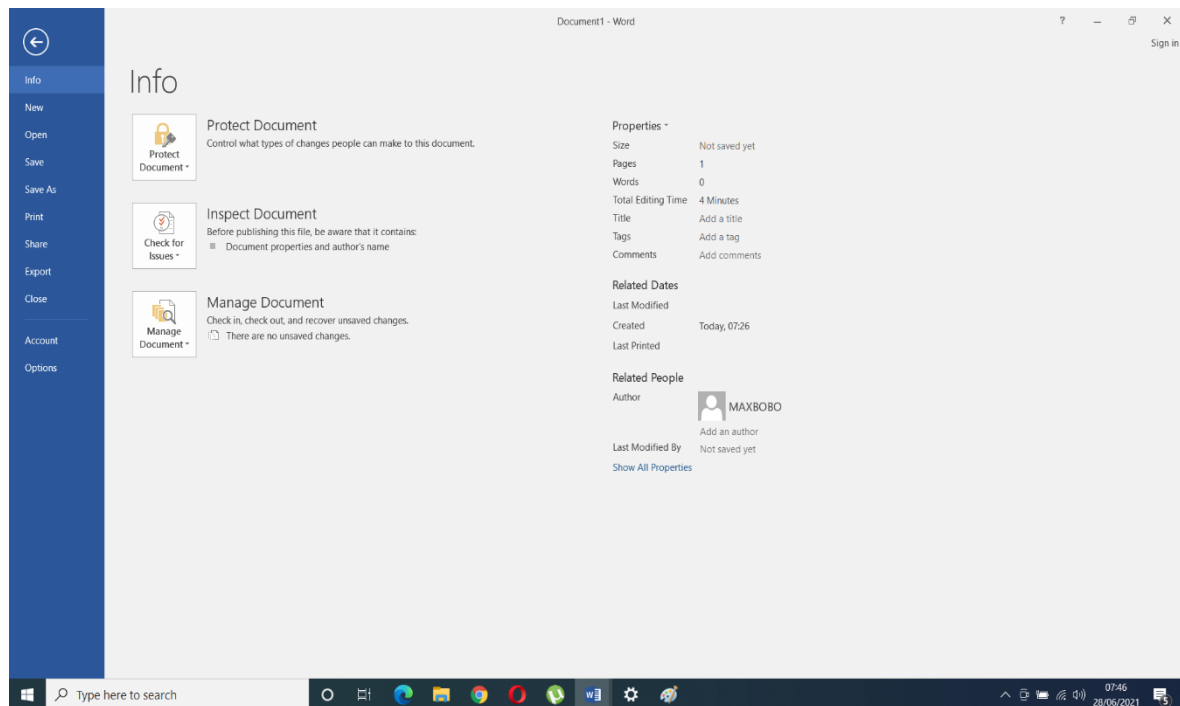
Figure 2.2: The Microsoft Word environment
        Source: Screenshot

1.3.4   Touch mode

To do this click the drop-down arrow to the right of the quick access toolbar and select touch mode from the dropdown you see, the touch mode will appear on the quick access toolbar**.**

1.3.5   Ruler

You can see this at the top side of your document as shown above.

1.3.6   Scroll Bars

You can see this on the right side of your document as shown above.

1.3.7   Document View Buttons

The view buttons are a feature that lets you change how the presentation or document appears.

1.3.8   Zoom sliders

The zoom slider is usually in the lower right corner of the software window as shown above.

1.3.9   The mini Toolbar

The mini toolbar appears whenever you right-click text in Word.

1.3.10 Keyboard Shortcuts

Here are a list of shortcuts you can always use,   Basic Windows keyboard shortcuts

Ctrl+Z: Undo., Ctrl+W: Close., Ctrl+A: Select all., Alt+Tab: Switch apps., Alt+F4: Close apps., Win+D: Show or hide the desktop., Win+left arrow or Win+right arrow: Snap windows., Win+Tab: Open the Task view.

1.4   Microsoft Basic 2: Creating and Printing Document.

Using MS Word is a very practical issue. It is therefore important to master how to open a document, close a document, save a document, and recover unsaved document. Also, skills such as entering and selecting text are important to using MS Word. Equally important are skills related to printing a document, using pictures and media, and how to insert video in your document. Let us discuss them one after the other.

Opening a document

The first step in creating a word document begins with the opening of the Microsoft Word program. In the menu at the top, click the File menu and select the Open option otherwise open the document direct from where you saved it on your PC. See below.
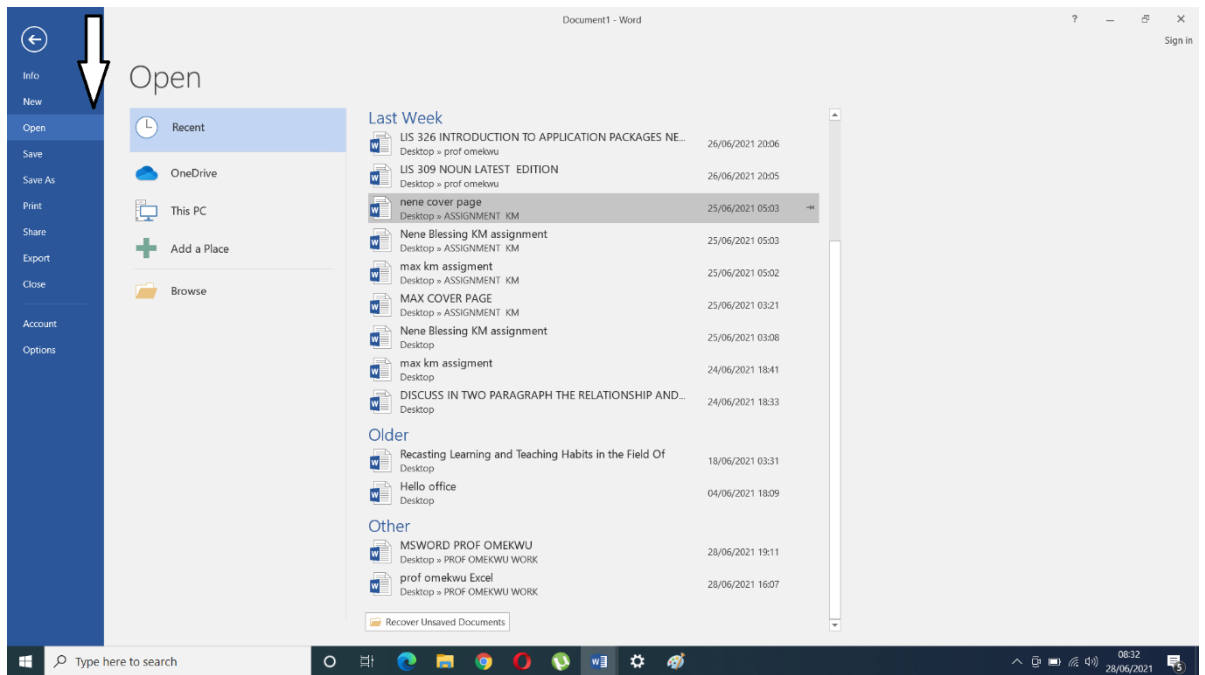
Figure 2.3: Opening of Word document
Source: Screenshot

Closing a document

Click the gray "X" in the upper-right-hand corner. But ensure to save your work if you will still use it next time for it is a good practice. See below to see the blue arrow pointing where to click to close your document.
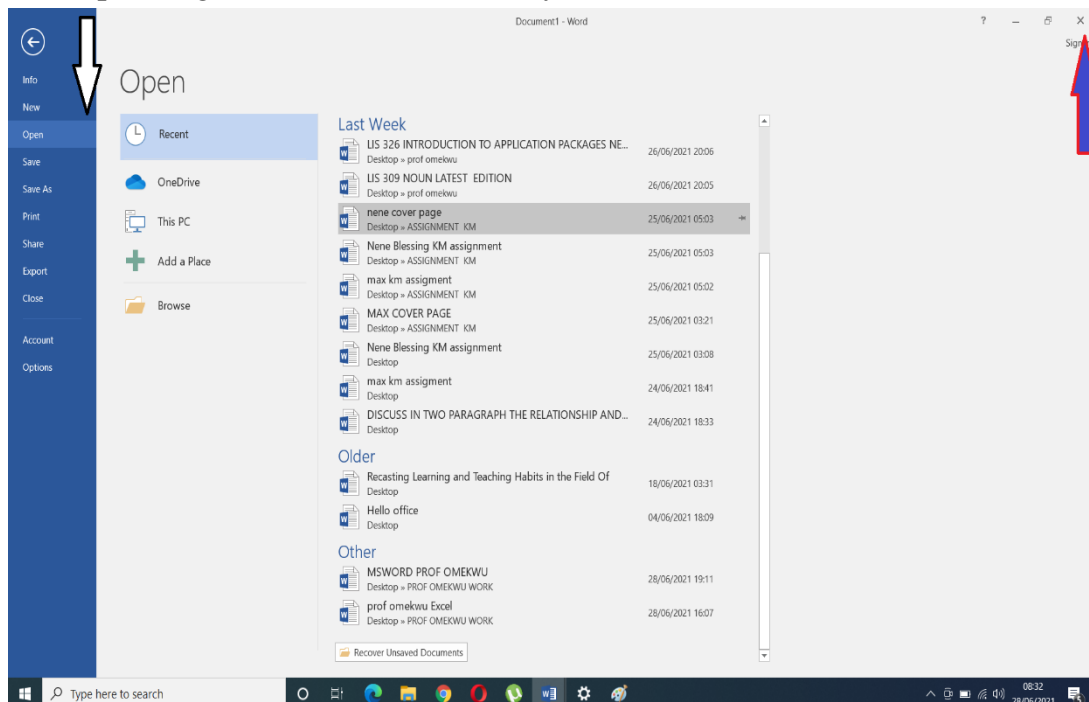
Figure 2.4: Closing of Word document

Saving document

To save a document, press ctrl S or you click the file button and click the save As after which you save the document with whatever name you want to save it as and also you have the option to choose whatever file type you want to save the document with. See below

Note the file path you are saving your document to as shown below.
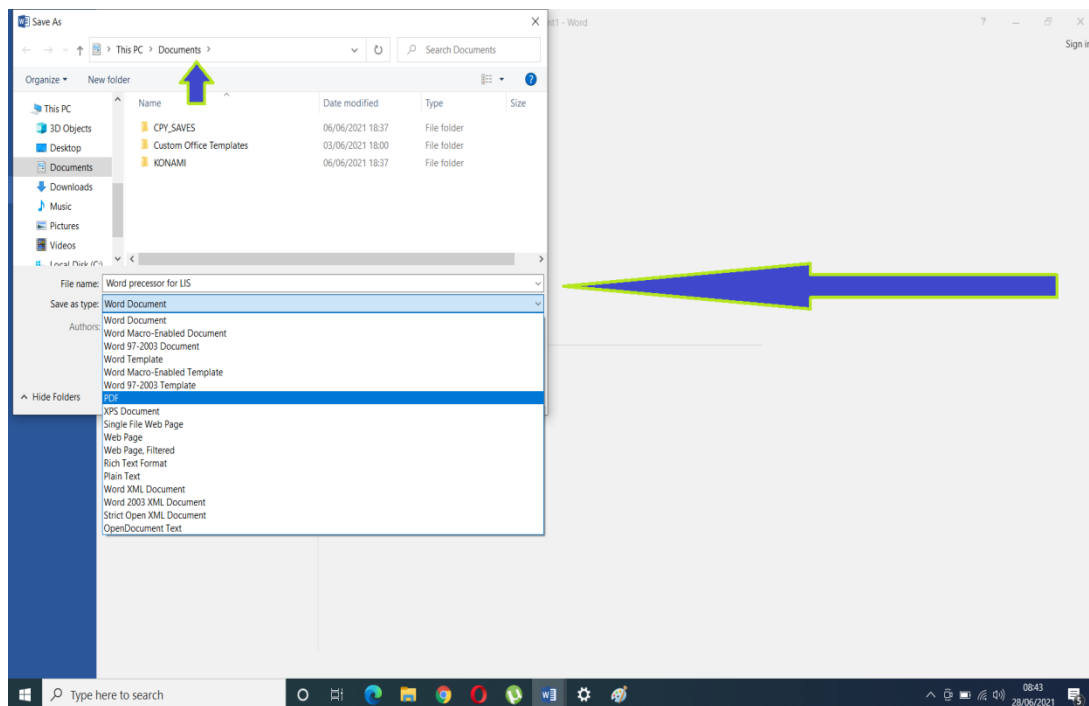
Figure 2.5: Saving of Document Window
Source: Screenshot

Recovering Unsaved document

In MS Word, click the File Tab in the upper left. Click Manage Document and select Recover Unsaved Documents from the d rop-down list.

Entering Text

Entering text is always done at the position of the cursor. Any newly-typed character is added to the text at the position occupied by the cursor, after which the cursor is moved one column to the right.

Selecting Text

Selecting is highlighting text or picking an object.

Printing Documents Printing to a File. Word allows you to send your output to a file instead of to a printer.

Working with Tabs

Word inserts a tab character and moves the insertion point to the tab setting, called the tab stop. You can set custom tabs or use Word's default tab settings.

Pictures and Media

Word allows you to insert pictures into your document. See below.
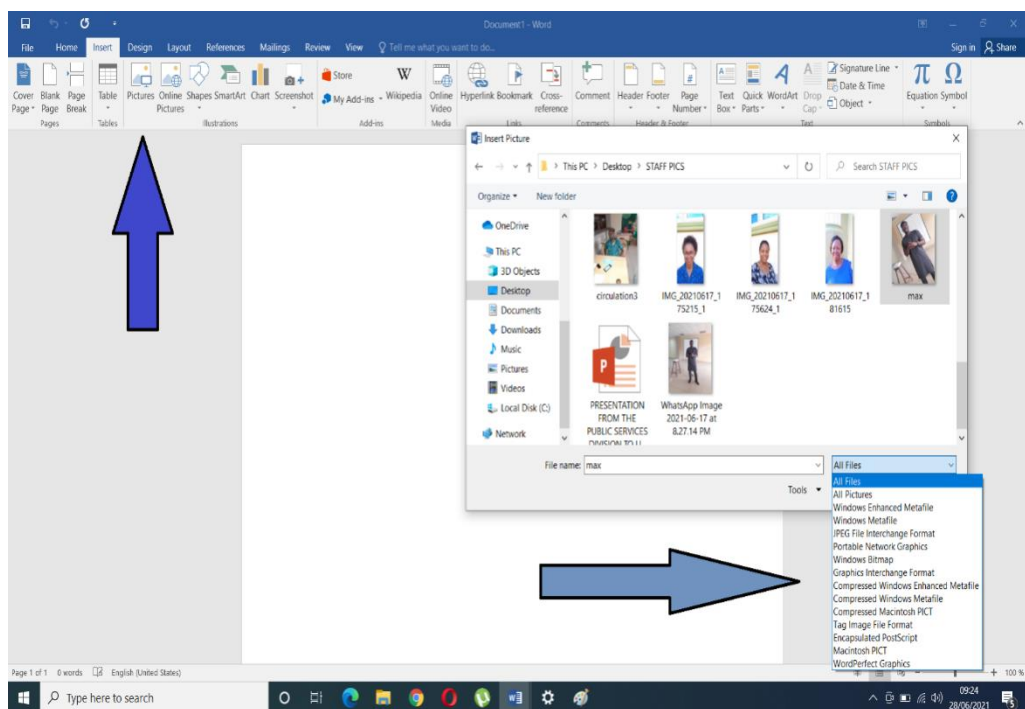
Figure 2.6: Insertion of pictures window
Source: Screenshot

Inserting online pictures

Same procedure as shown above.

Inserting your pictures from your PC

Same procedure as shown above.

How to insert screenshots

As shown below, you can screenshot your document.
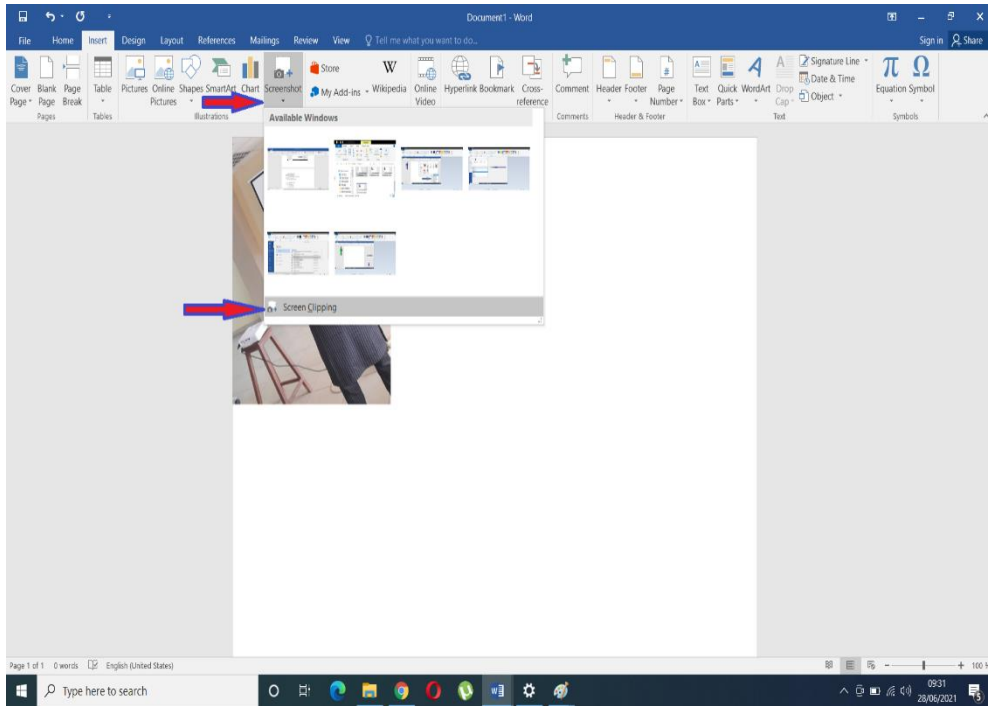
Figure 2.7: Inserted screenshot window
Source: Screenshot

Also you can use screen clipping option, see below
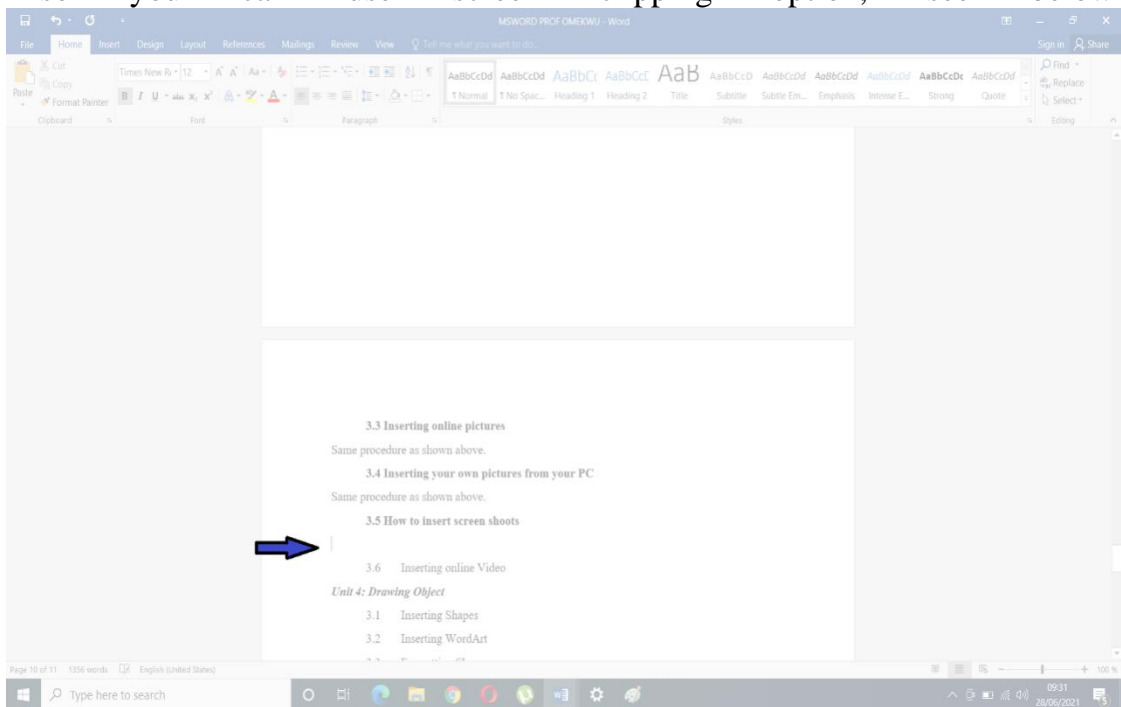
Figure 2.8: Screen clipping option
Source: Screenshot

Inserting online Video

Same as seen above from the insert tab.

1.5 Final point to note

The environment is where we work with word document, a lot of document formatting are carried out there. The document is where users interact most of the time with text entering and document saving and recovery are done. Also, we can print out a document, insert an image from our PC, and we can use screenshot. Furthermore, we have been able to learn how to create a document, how to close a document, how to save and retrieve a document. Also, we have been able to learn how we can print from our PC, from the back view, or by pressing the ctrl P key. Also, we (hopefully) now understand how to insert images, videos and use screen shoot in your document.

1.6   SUMMARY

In this Unit, we have been able to understand the title bar, the Ribbon, the touch mode, the ruler, the scroll bar, the zoom slides, etc. The first step in creating a word document begins with the opening of the Microsoft Word program. Printing is an output process that enables us to have a hard copy of our word processing activities. We can print from our PC, from the back view, or by pressing the ctrl P key.

Self-Assessment Exercises
Self-Assessment Exercise 1. What do you understand by the ribbon?
Self-Assessment Exercise 2. What is the Microsoft environment?
Self-Assessment Exercise 3: What is the first step in creating a word document?
Self-Assessment Exercise 4: What is printing in MS Office?
Self-Assessment Exercise 5 : List at least seven window keywors short you can use.

1.7 Glossary

Ribbon in MS Word: The ribbon is a set of toolbars at the top of the window in Office programs designed to help you quickly find the commands that you need to complete a task
MS Environment: The environment is where we work with word document, a lot of document formatting are carried out here
Printing in MS Word: Printing is an output process that enables us to have a hard copy of our word processing activities.

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1.9 Possible Answers to Self-Assessment Exercises (SAEs)

Self-Assessment Exercise 1. What do you understand by the ribbon?

Answer to SAE 1:
The ribbon is a set of toolbars at the top of the window in Office programs designed to help you quickly find the commands that you need to complete a task

Self-Assessment Exercise 2. What is the Microsoft environment?
Answer to SAE 2
The environment is where we work with word document, a lot of document formatting are carried out there.

Self-Assessment Exercise 3: What is the first step in creating a word document?
Answer to SAE 3
The first step in creating a word document begins with the opening of the Microsoft Word program.

Self-Assessment Exercise 4: What is printing in MS Office?

Answer to SAE 4

Printing is an output process that enables us to have a hard copy of our word processing activities. We can print from our PC, from the back view, or by pressing the ctrl P key.

Self-Assessment Exercise: List at least seven window keywors short you can use.

Answer to SAE 5

Here are a list of shortcuts you can always use. They are Basic Windows keyboard shortcuts

1.   **Ctrl+Z** to Undo., 2. **Ctrl+W** to Close., 3.   **Ctrl+A** to Select all., 5. 5.   **Alt+Tab** to Switch apps., 6.**Alt+F4** to Close apps., 7.   **Win+D** to Show or hide the desktop.,8. **Win+left arrow or Win+right arrow** to Snap windows.,9. **Win+Tab** to Open the Task view.

UNIT 2: DRAWING OBJECT, PAGE BACKGROUND, APPLYING BULLETS AND NUMBERS

2.1 INTRODUCTION

2.2 LEARNING OUTCOMES

2.3 Drawing Objects, Page Background

     2.3.1 Drawing Object

     2.3.2 Page Background,

2.4 Applying Bullets and Numbers

     1.4.1Applying Bullet and Numbers

     1.4.2 Formatting bullet and numbers

2.5 Selecting of the table object and Deleting cells and Tables

     2.5.1 Selecting of the table object

     2,5,2 Deleting cells and Tables

2.6 Summary

2.7. Glossary

2.8 References/Further Reading

2.9   Possible Answers to Self-Assessment Exercises (SAEs)

2.1   **INTRODUCTION**

Having gone through MS Word basics in Unit 1, this unit is intended to take students further in their ability to navigate the MS Word environment. You will be introduced to drawing an object, page background, and applying for bullets and numbers. We will be able to build bullets, apply numbers and tables in our document, this is very essential for itemizing points we want people to see whenever they receive or see our message or document.

2.2   LEARNING OUTCOMES

At the end of this course, you should be able to

- draw an object on MSWord using insert shapes,
- use WordArt,
- format shapes and insert charts.
- apply watermark on their document, format it
- create page borders on their document, and apply for bullets and numbers.
- apply for number in a listed text,
- create and format a table
- use merging and splitting effectively.

2.3 Drawing Objects, Page Background

2.3.1 Inserting Shapes

To **add** a **shape**, click **Insert**, click **Shapes**, select a **shape**, and then click and drag to draw the **shape**. See below.
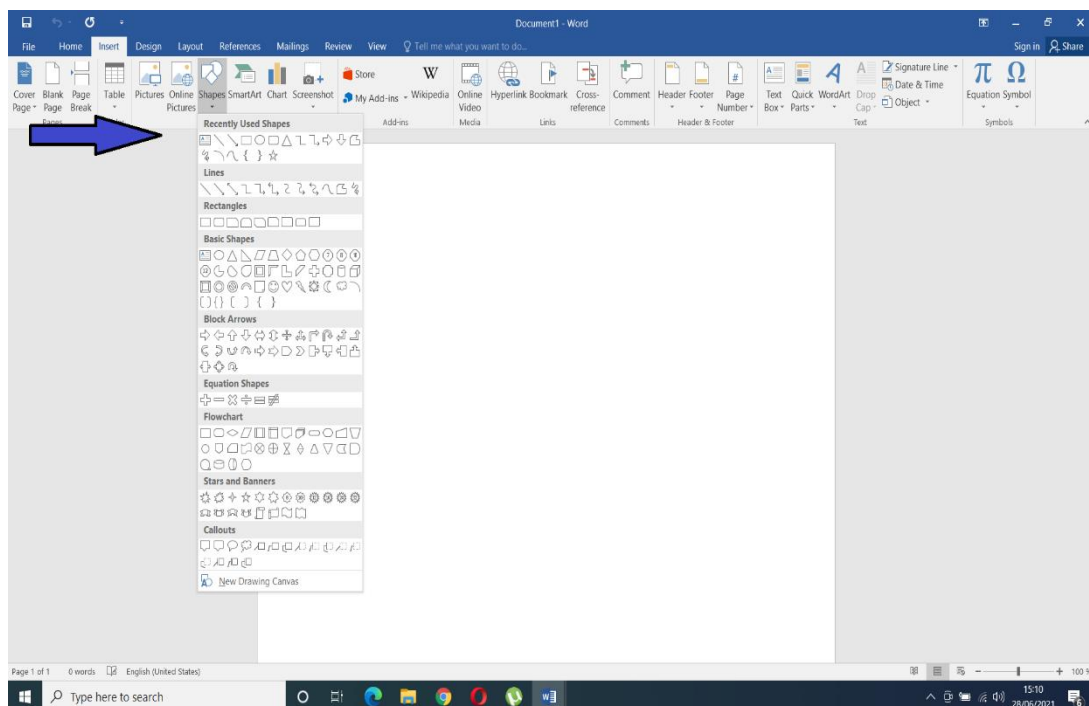
Figure 2.9: Process of inserting shape
Source: Screenshot

You have many options to design whatever you want with the New Drawing canvas as shown below.
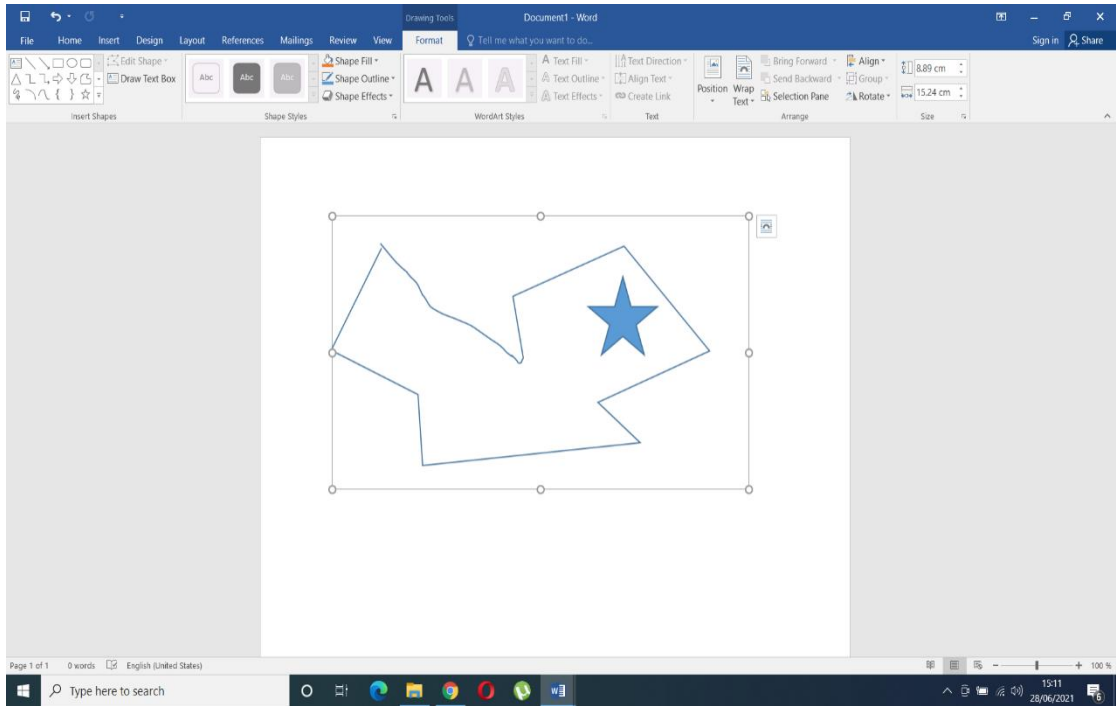
Figure 2.10: New drawing canvas
Source: Screenshot

Inserting WordArt

On the Insert tab, in the Text group, click WordArt, and then click the WordArt style that you want. See below
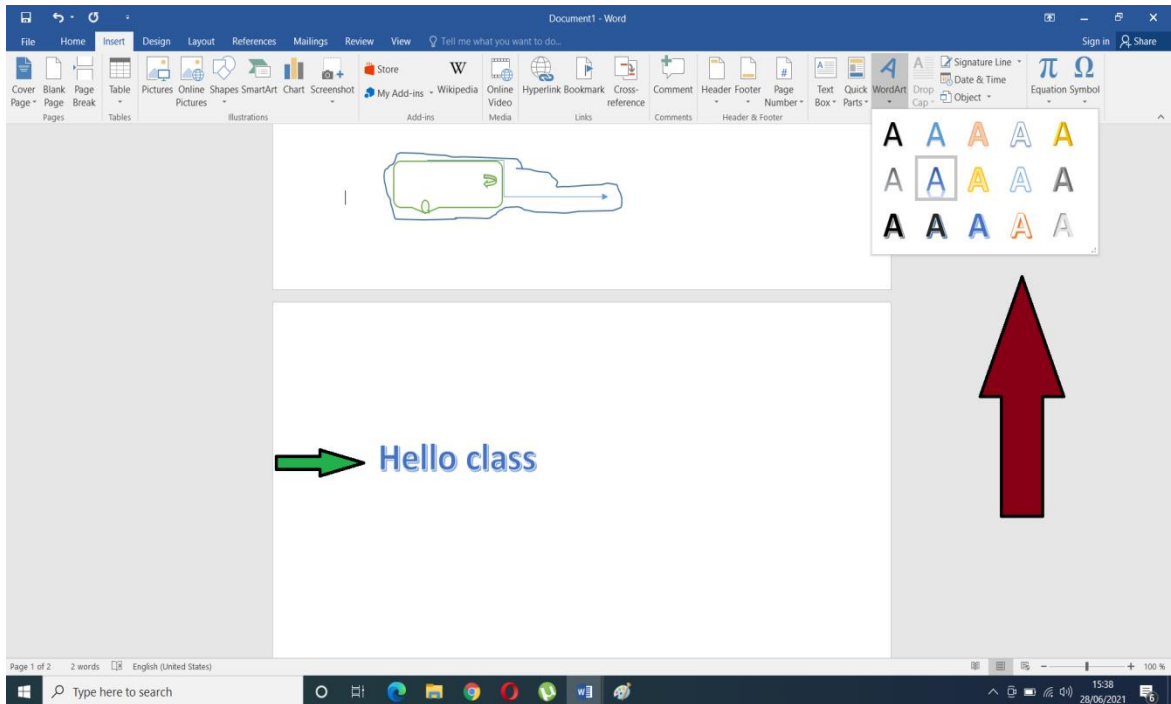
Figure 2.11: Inserting WordArt; Source: Screenshot

Formatting Shapes

To format shapes, click the shape that you want to change after which under Drawing Tools, on the Format tab, in the Insert Shapes group, click Edit text. See below.
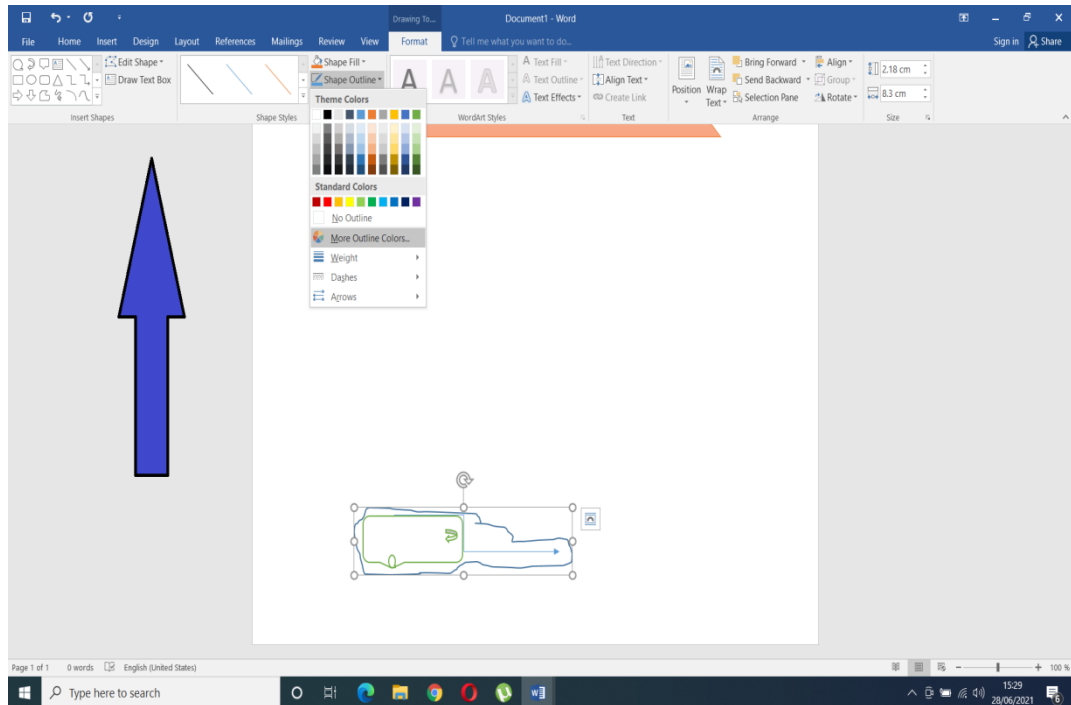
Figure 2.12: Formatting shapes
Source: Screenshot

Inserting SmartArt

To insert smartArt, click the insert tab, in the Illustrations group, click SmartArt. In the Choose a SmartArt Graphic dialog box, click the type and layout that you want. See below
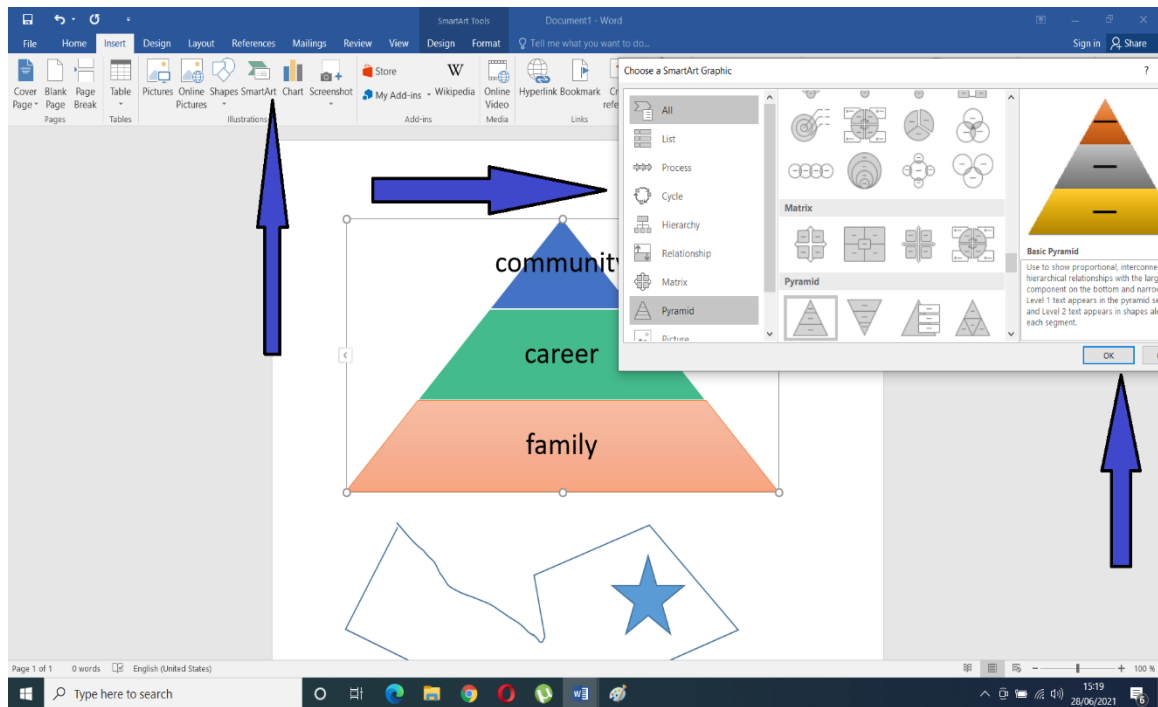
Figure 2.12: Inserting SmartArt
Source: Screenshot

Inserting Charts

On the Insert tab, in the Illustrations group, click charts. In the Choose a chart Graphic dialog box, click the type and layout that you want. As seen with the case of SmartArt above.

2.3.2 Page Background

2.3.2.1 Applying Watermarks

To use watermarks, click on the layout tab, select Watermark. In the Insert Watermark dialog, select Text and either type your own watermark text or select one, like DRAFT, from the list. Then, customize the watermark by setting the font, layout, size, colors, and orientation, select OK. See below
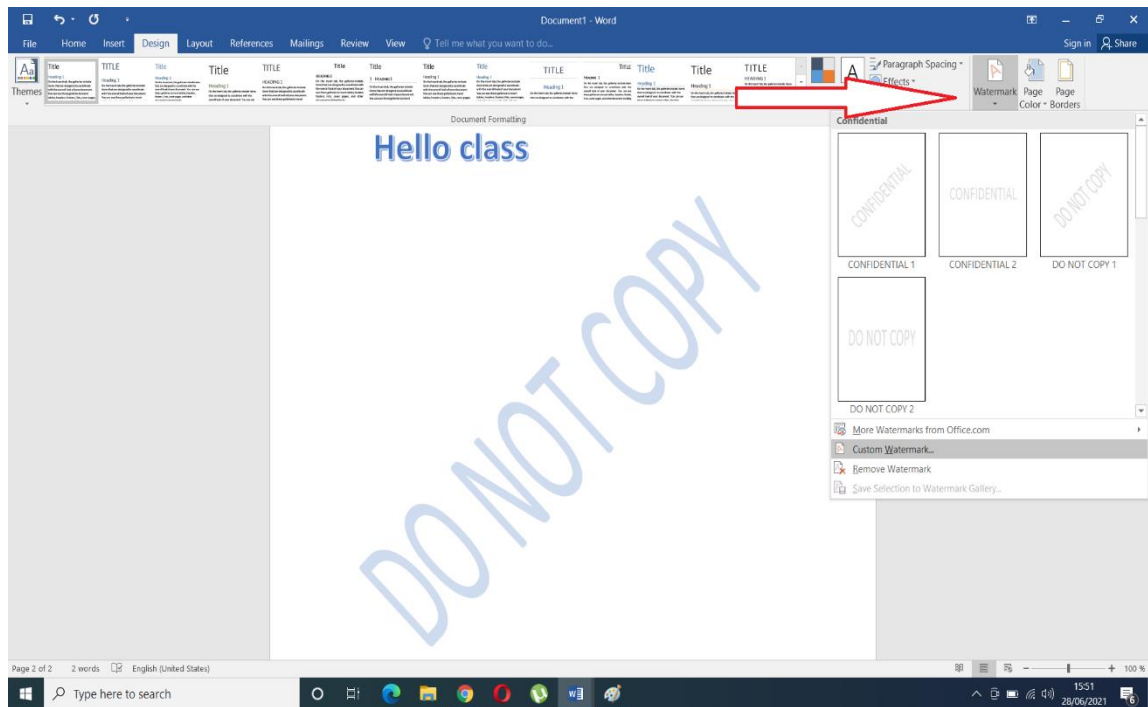
Figure 2.13: Applying watermarks
Source: Screenshot

Creating Customs Watermarks

As shown above.

Removing watermarks

Removing watermarks as shown in the image above at the dropdown of the watermark tab.

Applying Page Borders

To apply page borders, enter the "Page Border" settings menu (Layout/Design/Page Layout > Page Borders) and click the "Apply To" drop-down menu. See below
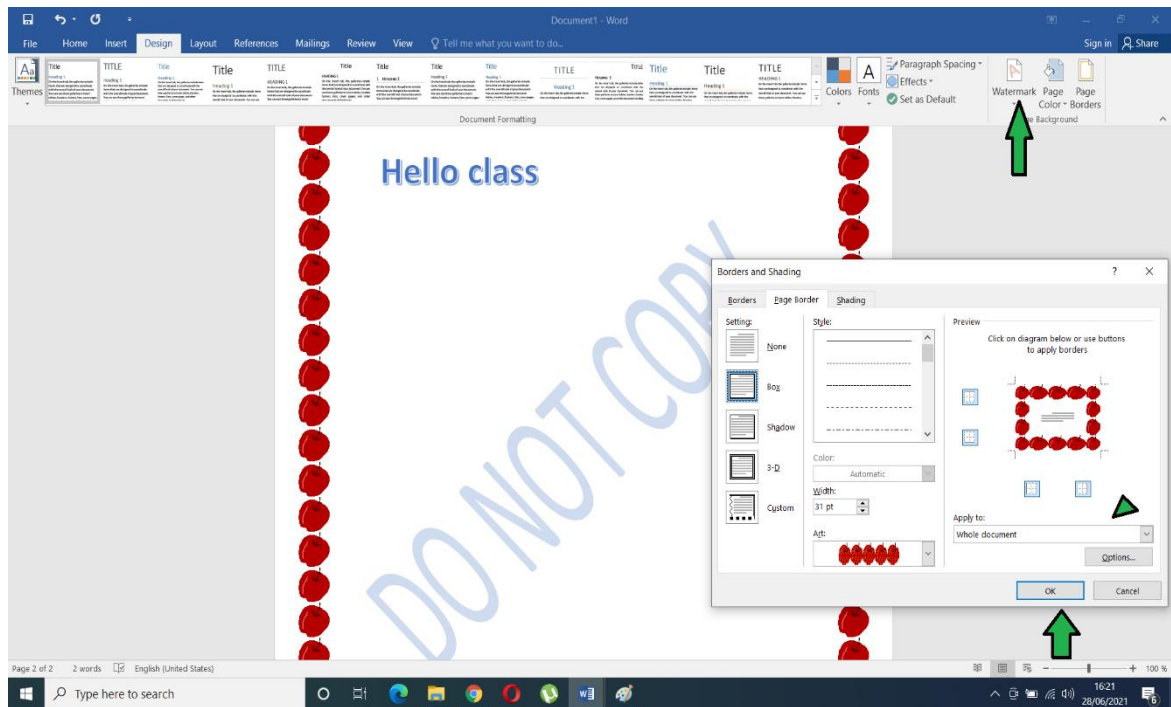
Figure 2.14: Page borders
Source: Screenshot

2.4   Applying Bullets and Numbering

2.4.1   Applying Bullets and Numbering

In your Microsoft document, place your cursor or highlight the text where you wish to insert a bulleted list. Under the [Home] tab in the "Paragraph" section, click the [Bullets] drop-down menu. Choose a bullet style or select "Bullets and Numbering" to create a customized bullet style. See below
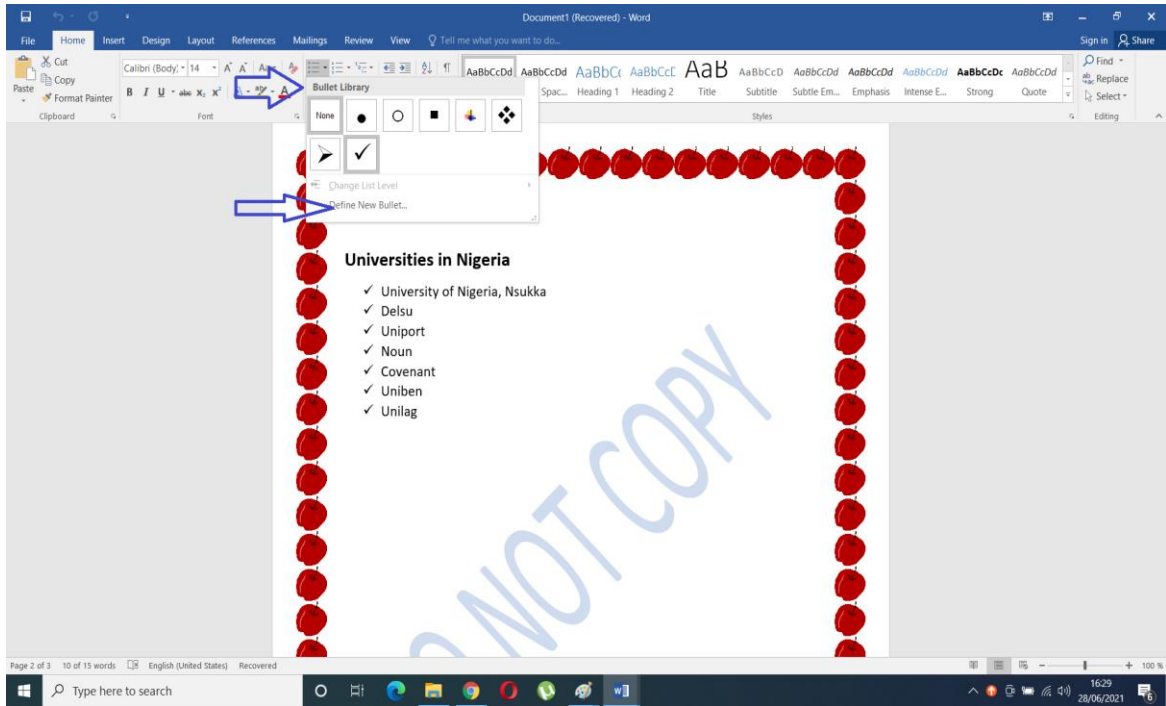
Figure 2.15: Applying bullets
Source: Screenshot
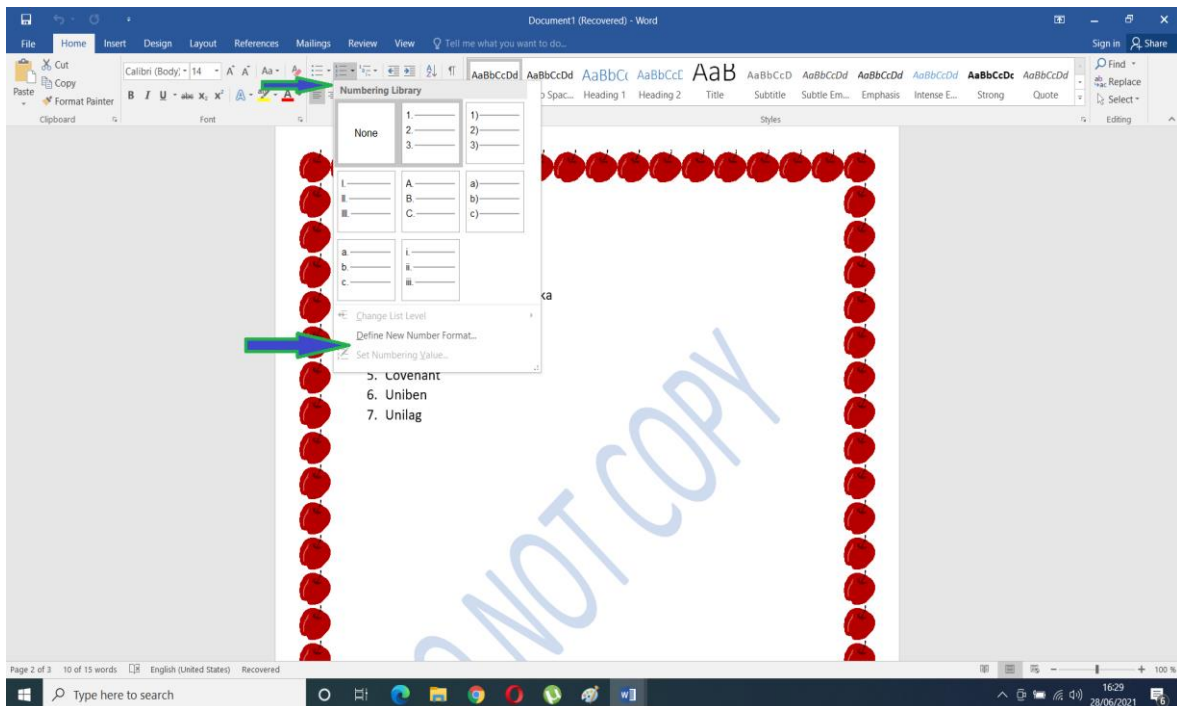
Figure 2.16: Applying numbers;
Source: Screenshot

2.4.2 **Formatting Bullets and Numbering**

As seen previously you can also format bullets and number an item on your document, Select the bulleted list that you want to format. , and then click Bullets and Numbering. Click on the style that you want. Click the button under Customize, and then click the bullet style that you want.

Creating a table

To do this, Click Insert > Tables > Insert Table from the dropdown menu. In the Insert Table dialog box, enter the number of columns and rows you want in this table. You can also draw tables as displayed in Fig………
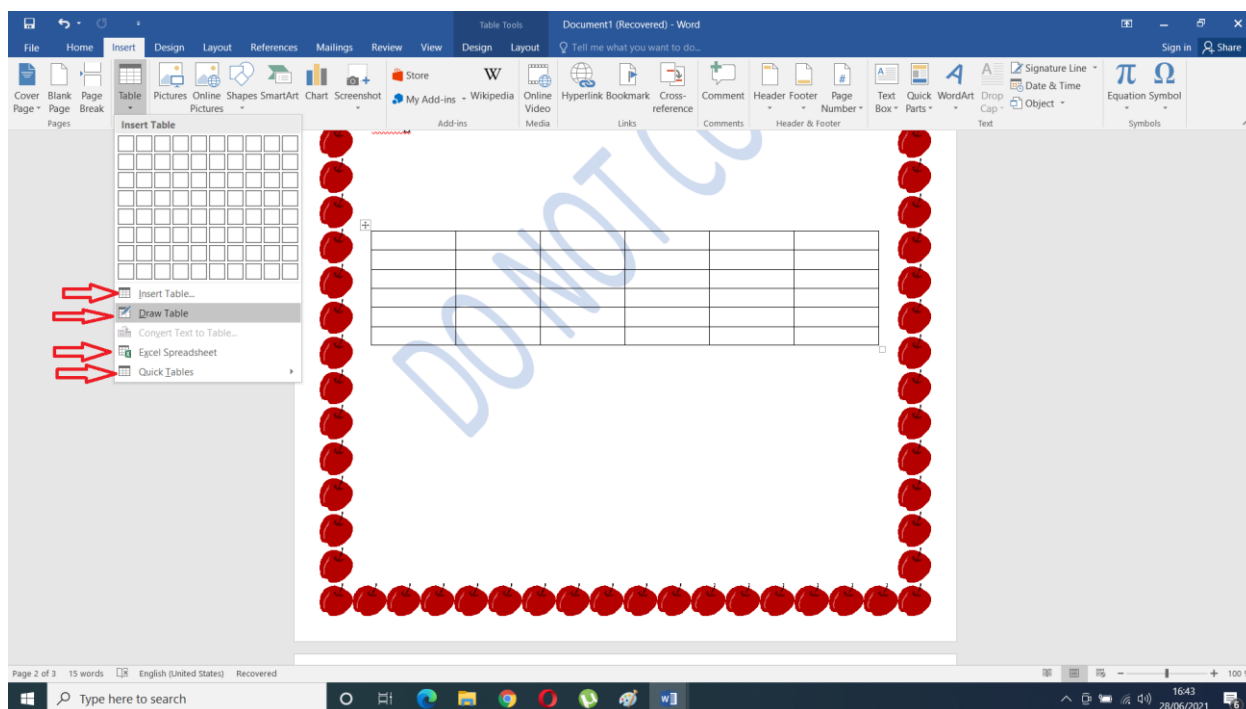
Figure 2.17: Tables
Source: Screenshot

2.5 Selecting of the table object and Deleting cells and Tables

2.5.1 Selecting of the table object

To select an entire table, move your mouse over the table until you see the table selection icon in the upper-left corner of the table and click on it to select the table. When working within a table, the Table Tools tab appears in the Ribbon and includes the Design and Layout tabs. See below
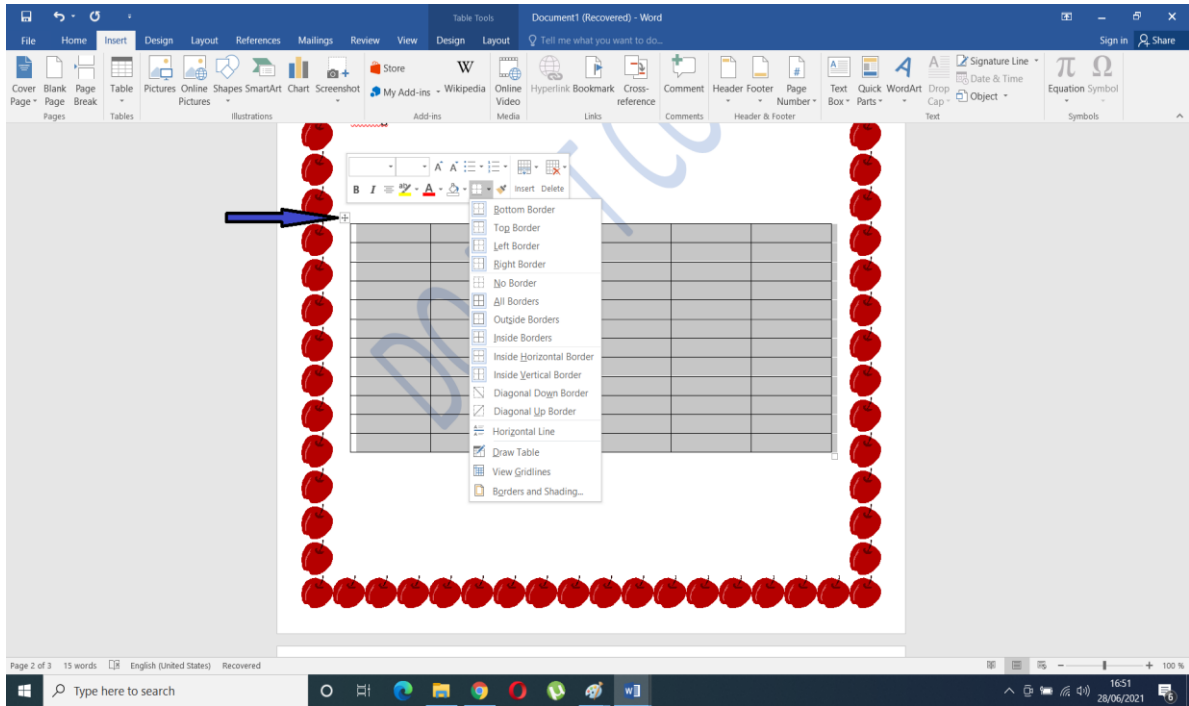
Figure 2.18: Table objects
Source: Screenshot

Inserting and deleting columns and rows

To do this, click a row or cell in the table, and then click the Table Layout tab.
Under Rows & Columns, click insert or Delete Rows. See below
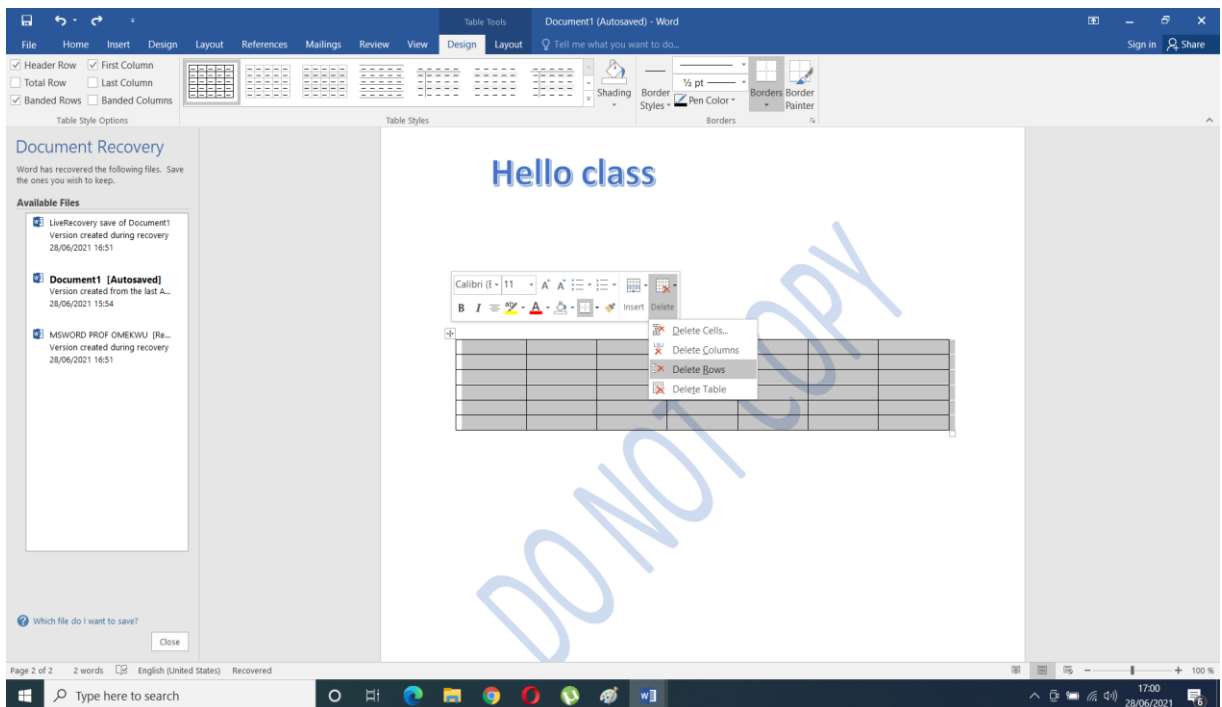
Figure 2.19: Colunm and rows
Source: Screenshot

2.5.2 Deleting cells and Tables

Position the insertion point in the cell you want to delete. And click OK. See below
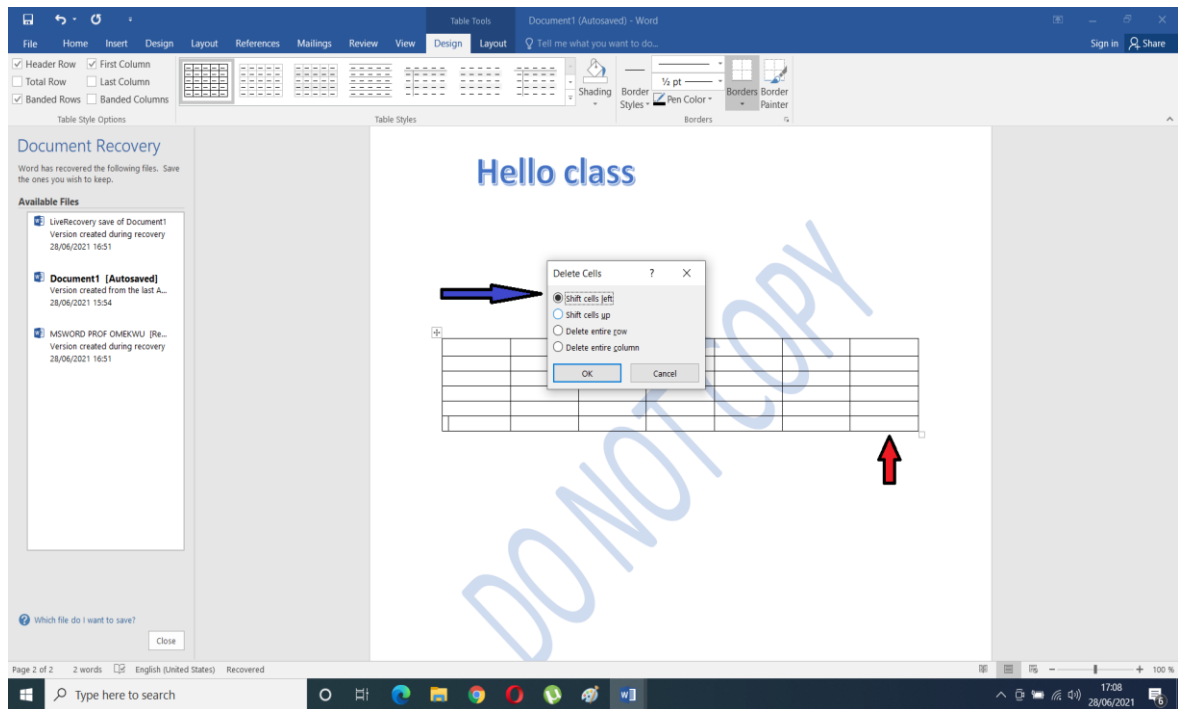
Figure 2.20: Cells and tables
Source: Screenshot

Merging and Splitting cells

You can **split** and **merge cells** in a table. **Splitting cells** is similar to adding a row or column, but it all takes place in one **cell** instead of a group of **cells**. **Merging cells**, however, is similar to deleting a **cell** and then adjoining it with a neighboring **cell**. See below
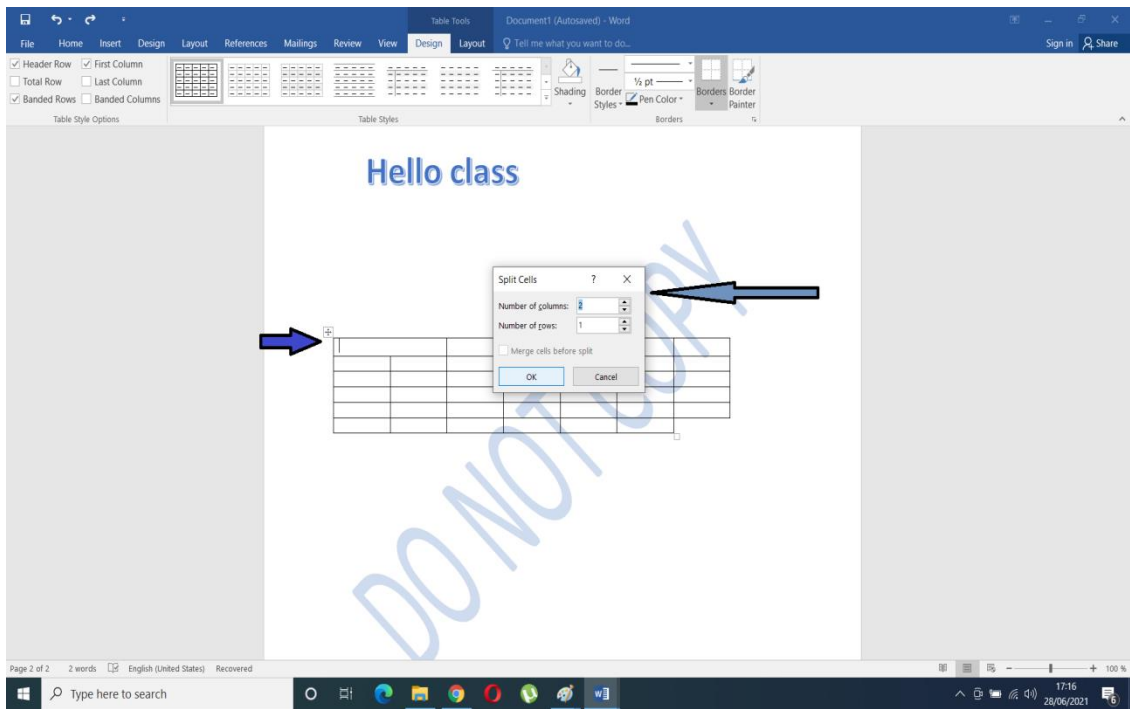
Figure 2.21: Splitting cells
Source: Screenshot
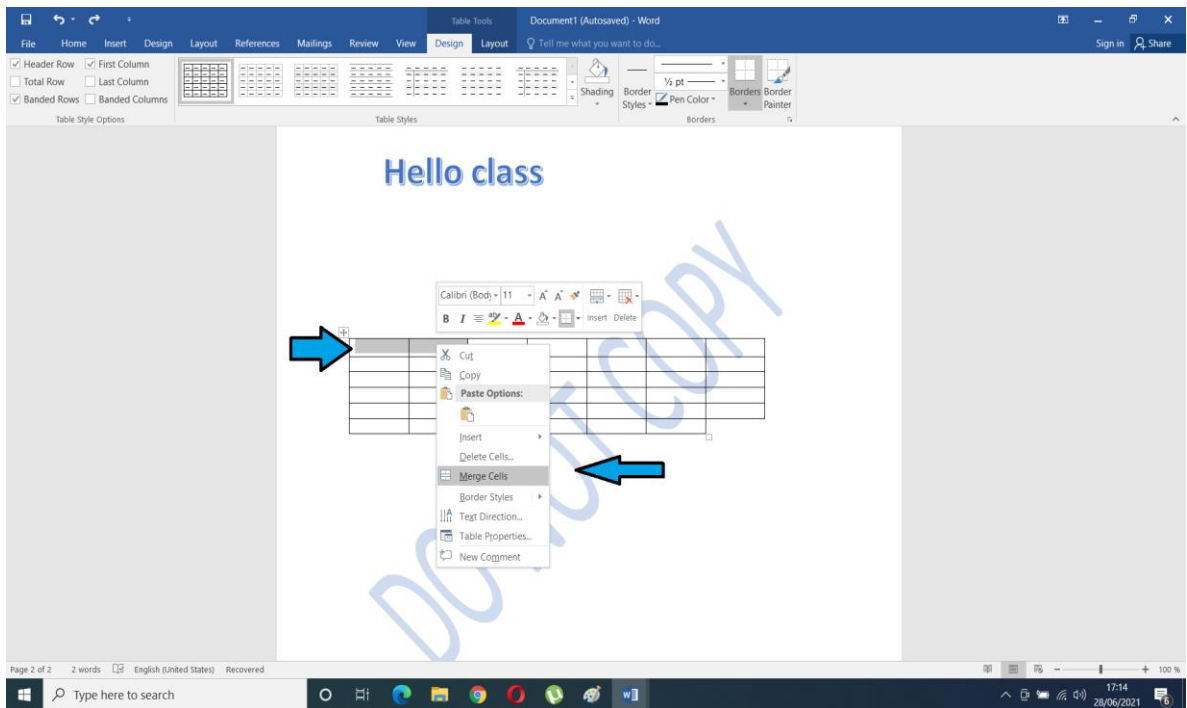
Figure 2.22: Merging of cells
Source: Screenshot

2.6   SUMMARY

At the end of this Unit, you have hopefully been acquainted with how to add watermark to your document and custom watermark to your document. You have also seen how you can apply borders to your document. You have also seen how to use shapes, WordArt, how to format shapes, and also include charts on your document. You can apply bullets and number text in your document. Hopefully, you also can create tables and insert new rows and columns in your tables.

Self-Assessment Exercises (SAEs)
1. Where can we locate the shape Element on our Word Environment?
2. What is WordArt used for?
3. Where is the watermark Element located?
4. How can you customize a watermark of your choice?
5. How can we apply bullets to out text?
6. How can we apply numbering to out text?
7. How can we create tables and split them and also merge them on MS word?

2.7   Glossary

Watermark in MS Word: The image or text that appears behind the main document.

WordArt: A fast way to make text to appear special or achieve special effects.

2.8   REFERENCES/FURTHER READING

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2.9   Possible Answers to Self-Assessment Exercises (SAEs)

SAE 1. Where can we locate the shape Element on our Word Environment?
Answer to SAE 1
To locate the shape element click Insert, click Shapes, select a shape, and then click and drag to draw the shape

SAE 2. What is WordArt used for?
Answer to SAE 2
The WordArt is used to create decorative effects or add special text effects to one's documents or publications.

SAE 3. Where is the watermark Element located?
Answer to SAE 3
The watermart element is located on layout tab. To use watermarks, click on the layout tab, select Watermark

SAE 4. How can you customize a watermark of your choice?
Answer to SAE 4
In the Insert Watermark dialog, select Text and either type your own watermark text or select one, like DRAFT, from the list. Then, customize the watermark by setting the font, layout, size, colors, and orientation, select OK.

SAE 5. How can we apply bullets to out text?
Answer to SAE 5
In your Microsoft document, place your cursor or highlight the text where you wish to insert a bulleted list. Under the [Home] tab in the "Paragraph" section, click the [Bullets] drop-down menu. Choose a bullet style or select "Bullets and Numbering" to create a customized bullet style.

SAE 6. How can we apply numbering to out text?
Answer to SAE 6
In your Microsoft document, place your cursor or highlight the text where you wish to insert a number list. Under the [Home] tab in the "Paragraph" section, click the [Number] drop-down menu. Choose a number style or select "Numbering" to create a customized number style

SAE 7. How can we create tables and split and also merge cells on MS word?

Answer to SAE 7

a) To create:***To create a table, Click Insert > Tables > Insert Table from the dropdown menu. In the Insert Table dialog box, enter the number of columns and rows you want in this table***

b) To split or merge cells: You can **split** and **merge cells** in a table. **Splitting cells** is similar to adding a row or column, but it all takes place in one **cell** instead of a group of **cells**. **Merging cells**, however, is similar to deleting a **cell** and then adjoining it with a neighboring **cell**.

UNIT 3: DOCUMENT VIEW AND BASIC EDITING SKILLS

3.1 INTRODUCTION

3.2 LEARNING OUTCOMES

3.3 Document View

      3.3.1 How to change document view

      3.3.2 How to hide Ruler and show it

      3.3.3 How to zoom the document

3.4 Working in new document in a new window

      3.4.2 Working with word file format

      3.4.3 Deleting Text

      3.4.4 Cutting, Copying and Pasting

      3.4.5 Undoing and Redoing actions in word

      3.4.6 Finding and replacing text

      3.4.7 Selecting text and objects

3.5 Basic Proofing Tools

      3.5.1 Spelling and Grammar Tools

      1.5.1 Formatting Paragraphs and Document Layout

      3.5.2 How to use the Thesaurus

      3.5.3 Font Formatting

      3.5.4 Font Dialog Box

      3.5.5 Formatting Paragraphs and Document Layout

      3.5.5.1 Aligning Paragraphs

3.5.5.2 Line Spacing and Paragraph spacing

3. I   INTRODUCTION

This Unit will introduce you to document viewing and editing skills which are essential skills to have when working with a document to effectively optimize MSWord. This Unit will also familiarise you with basic proofing tools and how to format paragraphs essential features of document layout.

3.2   LEARNING OUTCOMES

At the end of this unit students should be able to;
- use ruler and toggle between showing and hiding it,
- know how to zoom a document and how to split windows.
- align paragraphs to either left, right, or center,
- use the line spacing.
- use header and footer in their document.

3.3 Document View

3.3 .1 How to change document view

Click the View tab and then click the view you want to use, such as Print Layout or Draft view. See below
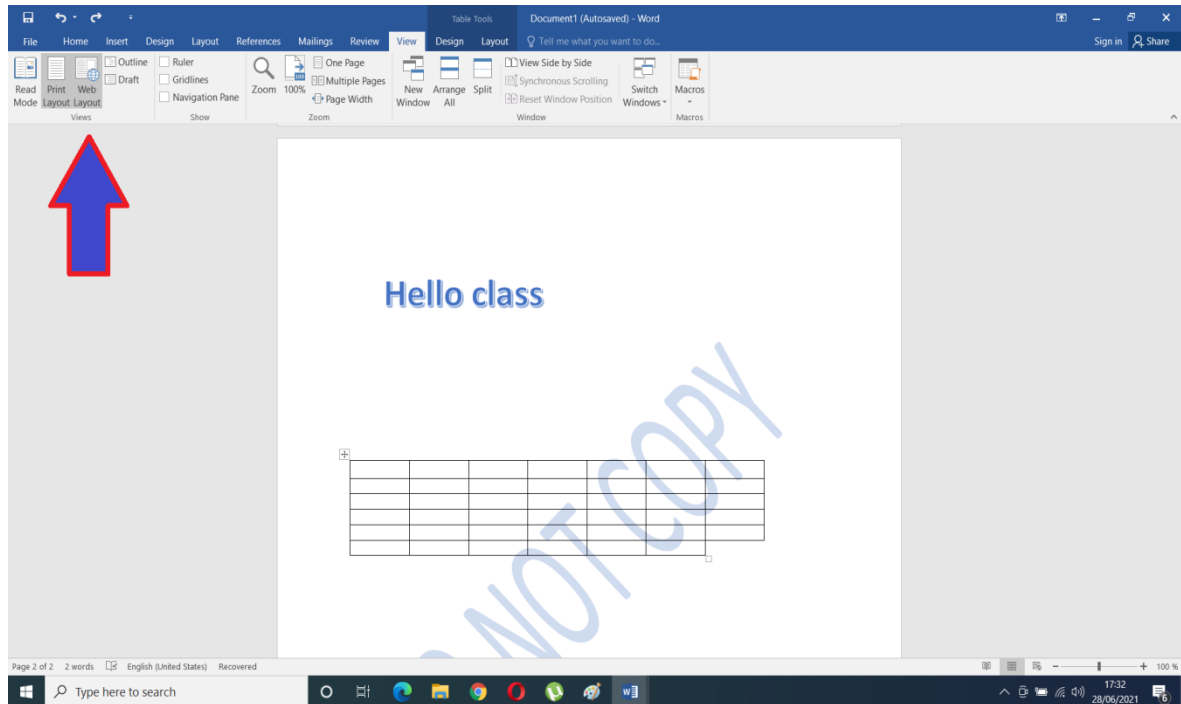
Figure 2.23: Document view
Source: Screenshot

3.3.2 How to hide Ruler and show it

You   can show and hide both rulers simultaneously   by   repeatedly   clicking/ toggling on Ruler in the Show section, under the View tab in the top menu bar. See below
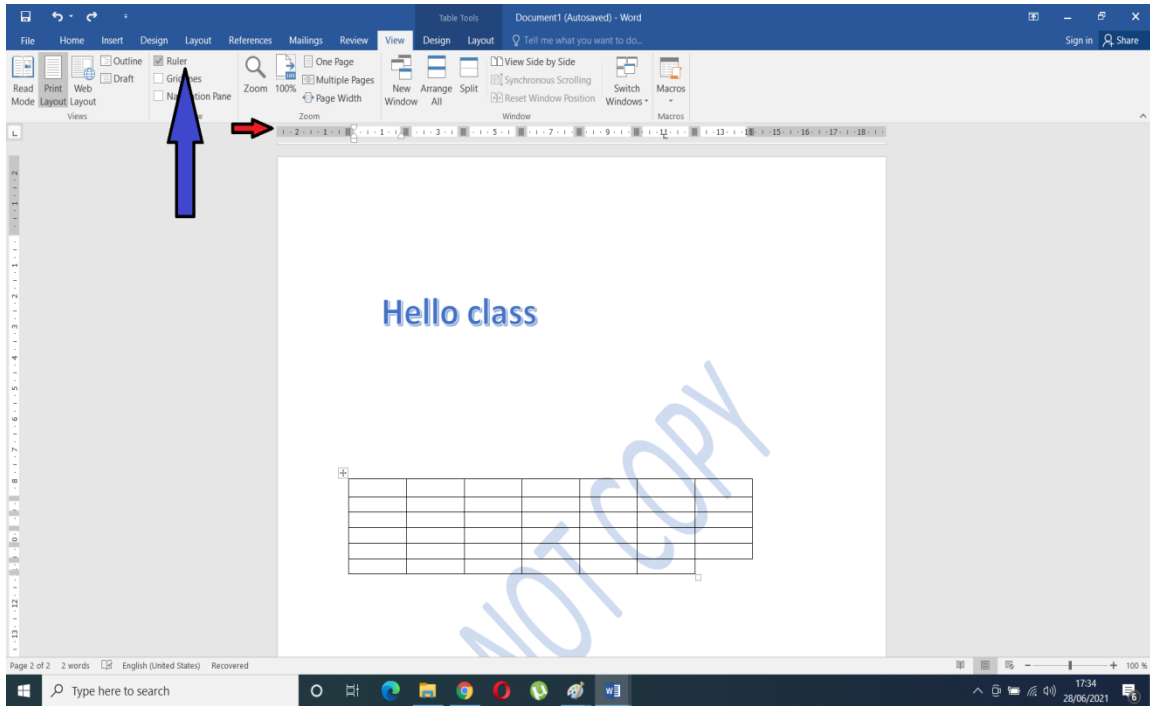
Figure 2.24: Rulers
Source: Screenshot

3.3.3 How to zoom the document

To do this, Select the View menu bar at the top of the screen, and select Zoom. Select your Zoom level. See below
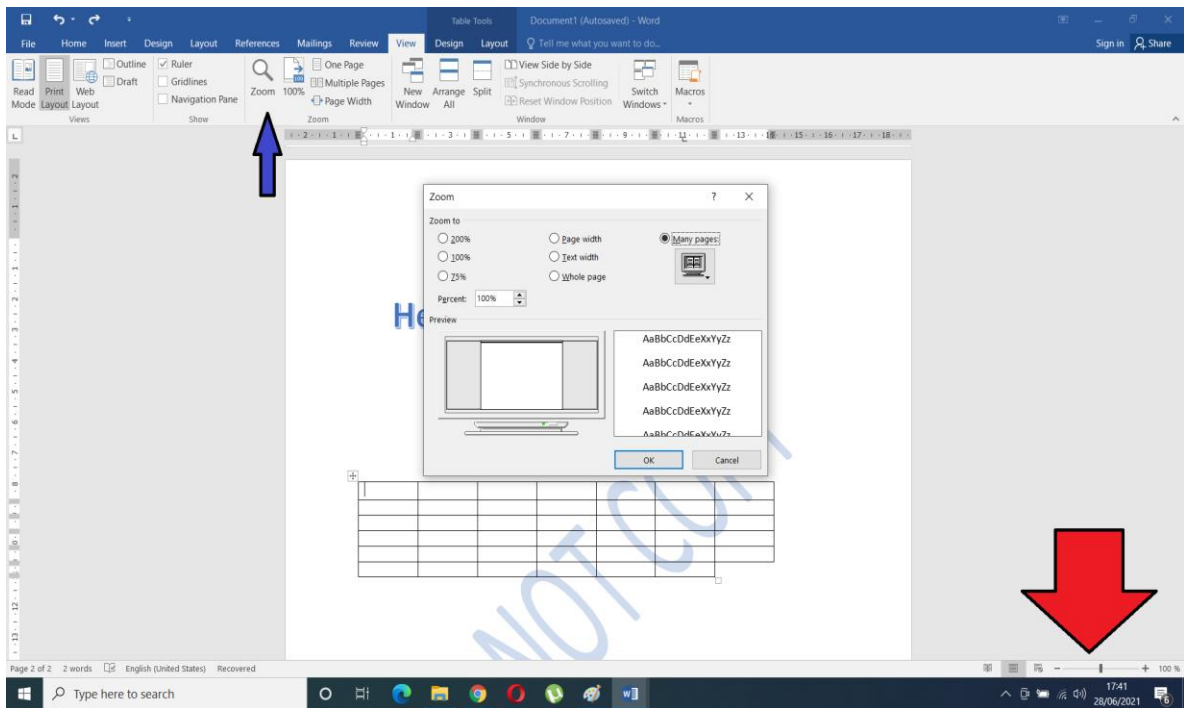
Figure 2.25: How to zoom
Source: Screenshot

3.4 Working in new document in a new window

3.4.1   To open a document in a new document in a new window

To do this, click the VIEW tab in the Window group, click New Window. See

below
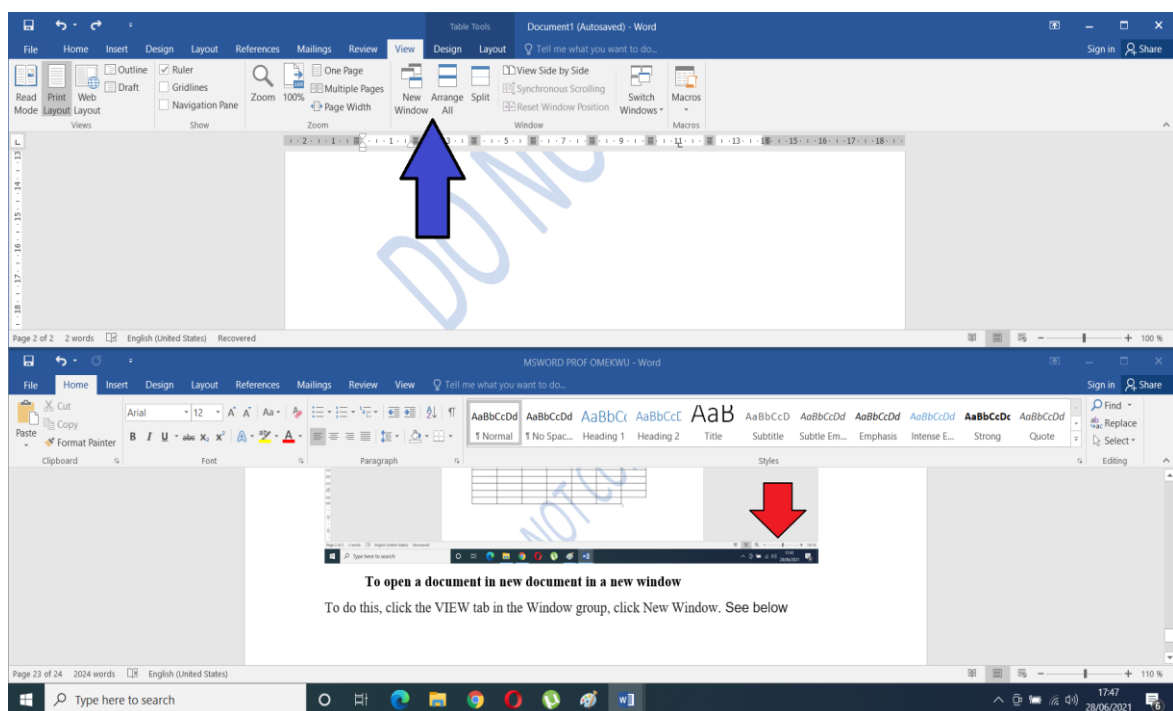
Figure 2.26: Open document in a new view
Source: Screenshot

3.4.2   How to split in window

Same process as indicated above from the view Tab.

Working with word file format

You will see this option when you want to Save As. See below
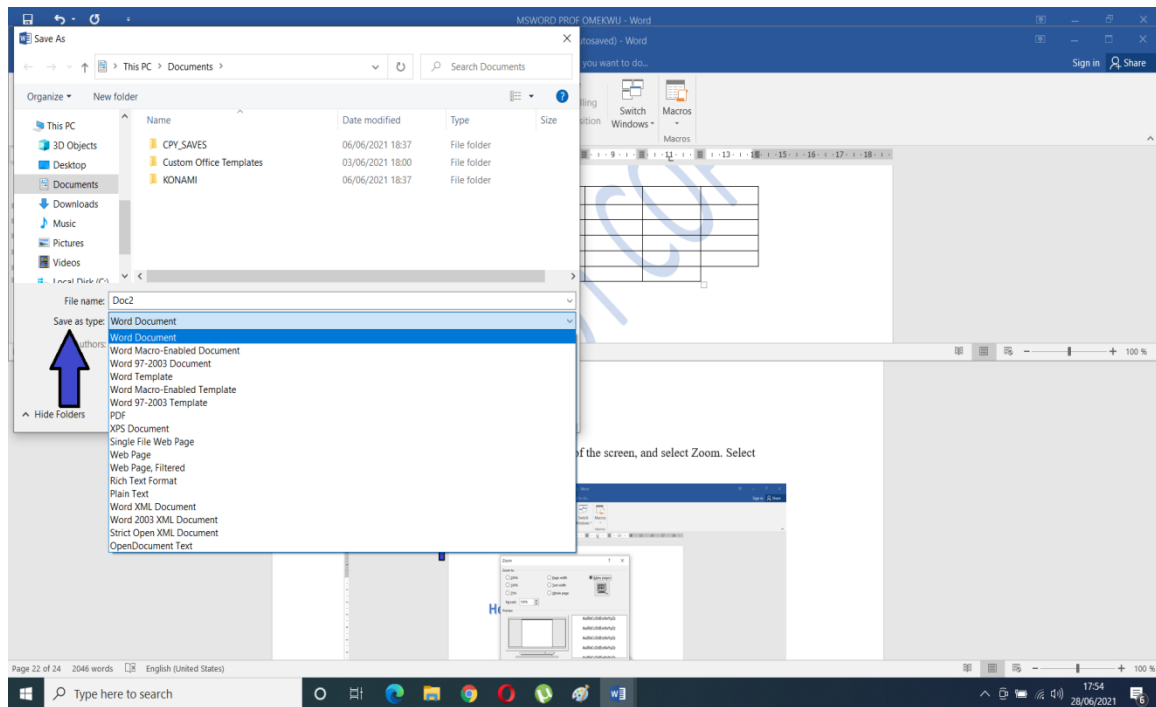
Figure 2.27: Word file document
Source: Screenshot

3.4.3 Deleting Text

To delete a text, click on backspace at the end of the text or highlight it and press the delete key.

3.4.4   Cutting, Copying and Pasting

To cut, copy and paste, highlight the text you want to perform this task on and right click your mouse or you use the shortcuts, like ctrl C for copy, ctrl V to paste.   See below
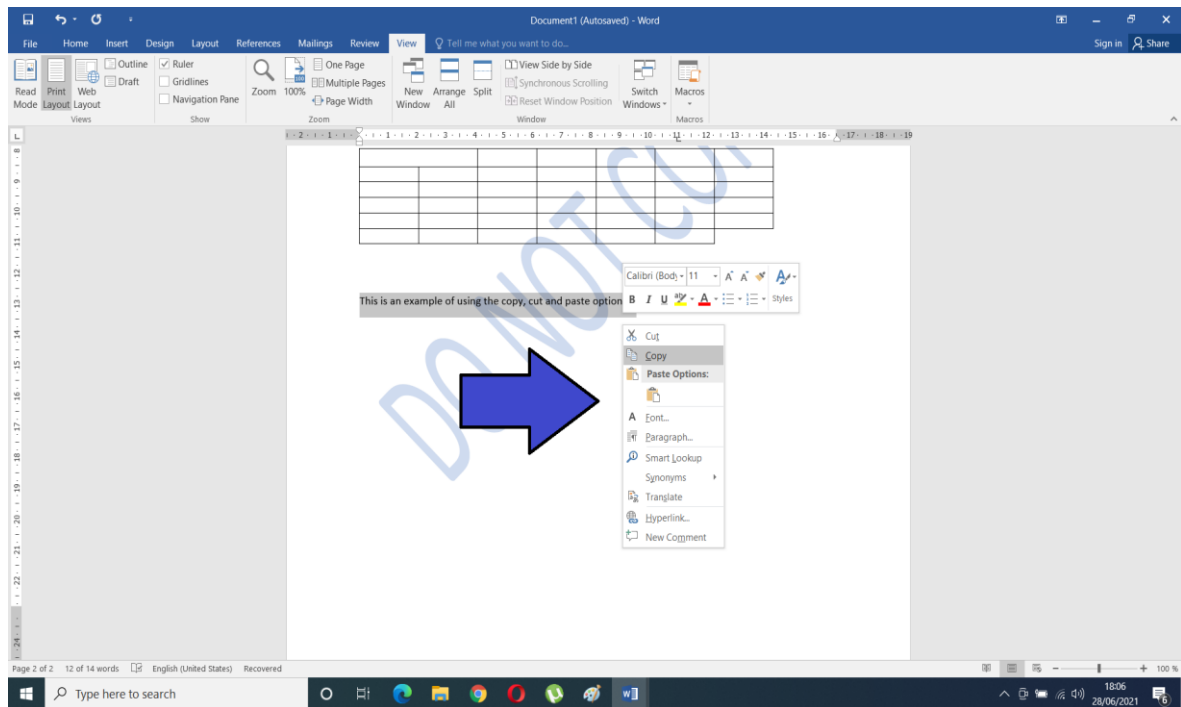
Figure 2.28: Cutting, copyiny and pasting
Source: Screenshot

3.4.5 Undoing and Redoing actions in word

Ctrl Z for undoing and Ctrl Y for redoing

3.4.6 Finding and replacing text

Using crtl F to find and crtl H to Replace or you use the icon under editing ribbon at the top left. See below.
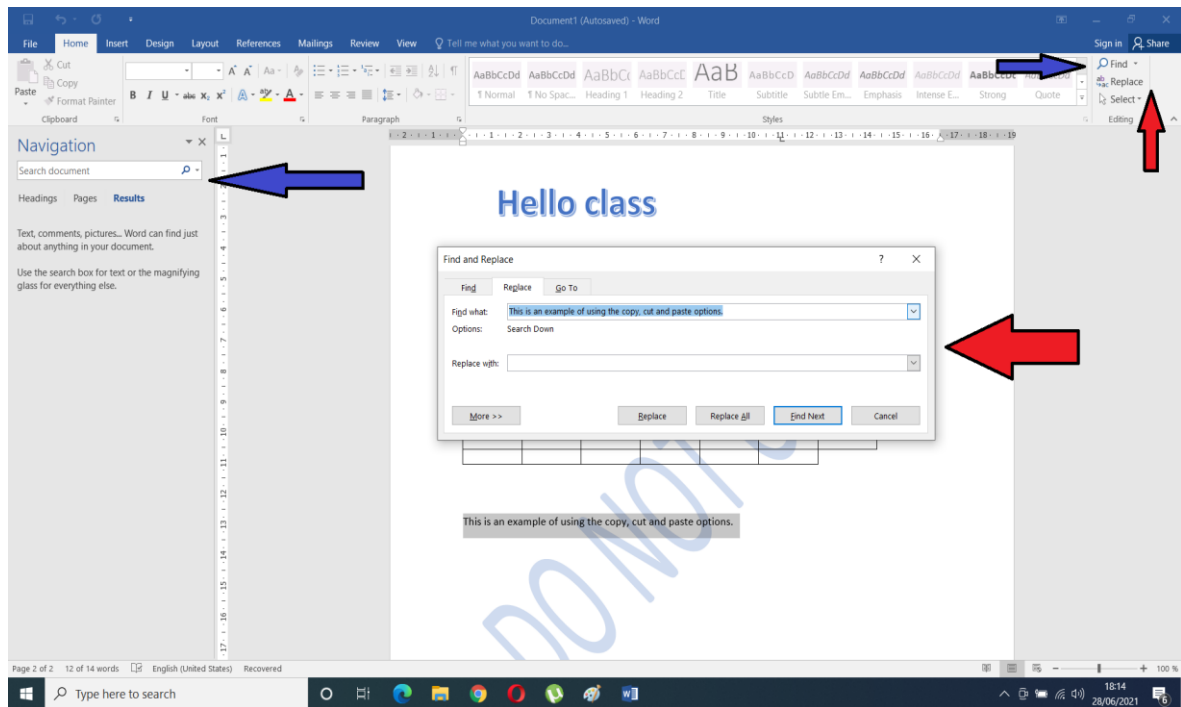
Figure 2.29: Find and replace text
Source: Screenshot

3.4.7   Selecting text and objects

This has to do with highlighting of text or an object.

3.5 Basic Proofing Tools

3.5.1 Spelling and Grammar Tools

Click File > Options > Proofing, clear the Check spelling as you type box, and click OK. To turn spell check back on, repeat the process and select the Check spelling as you type box. To check spelling manually, click Review > Spelling & Grammar. See below. You can choose to do it this way from the file option display below
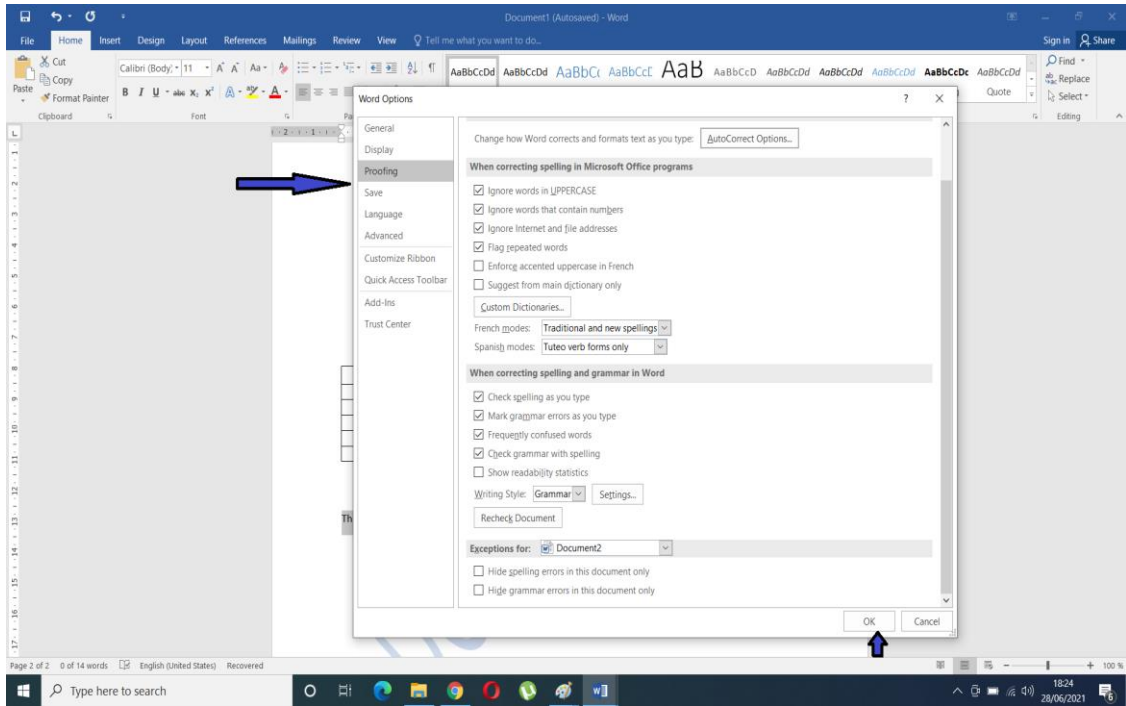
Figure 2.30: Spelling and grammar cheking
Source: Screenshot

Or from the review> spelling and Grammar option, see below.
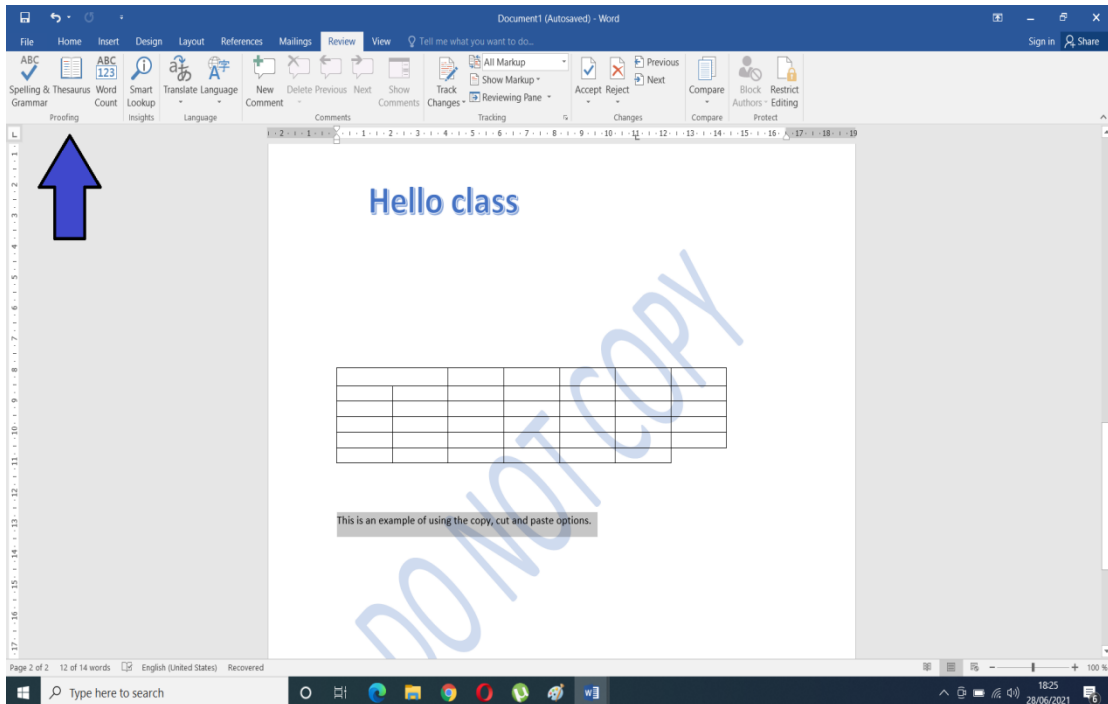
Figure 2.31: Spelling and grammar option
Source: Screenshot

3.5.2 How to use the Thesaurus

Same way as the spelling and Grammar, you can use the Thesaurus in the proofing section.

3.5.3   Font Formatting

Formatting text in Microsoft Word involves tasks like bolding the text, italicising it, and changing the font and size. The commands to perform all of these formatting tasks are found on the Home tab in the Font group. Select your text and then click on the required formatting button to see the effects or highlight it and right-click to see options. To do the former, select an option to change the font, font size, font color, or make the text bold, italic, or underline. See below
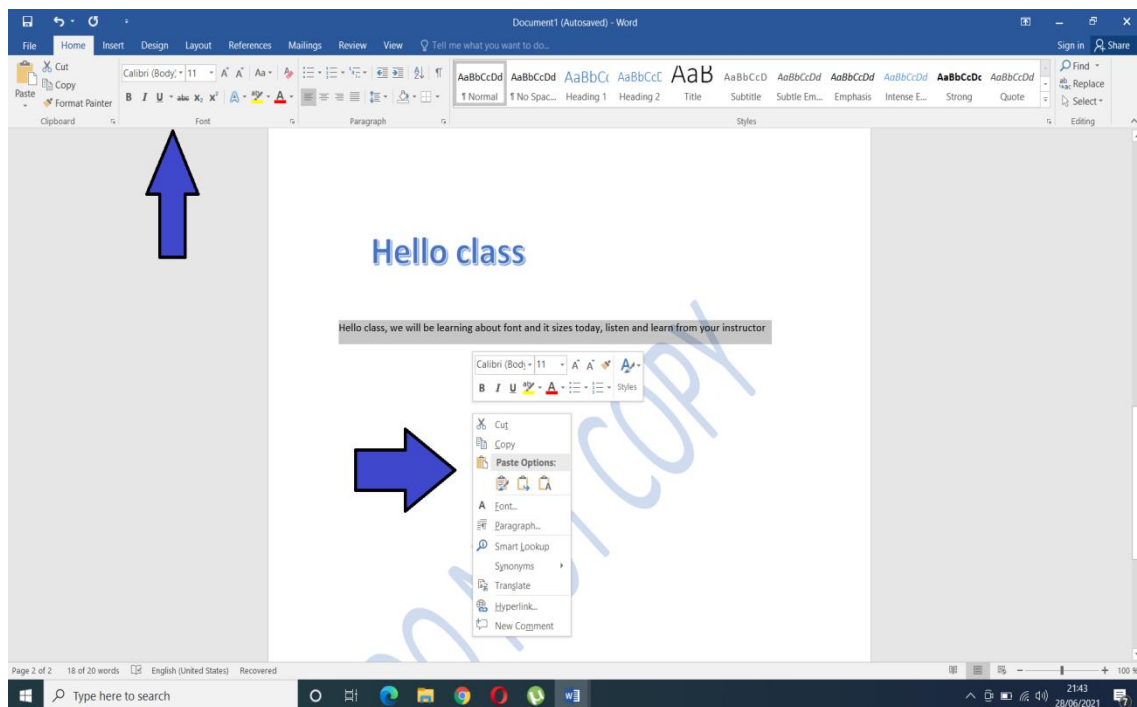
Figure 2.32: Font formatting dialogue box
Source: Screensho

3.5.4 Font Dialog Box

Just as the image above, the Font dialog box contains all the commands for formatting text, including quite a few that didn't find their way into the Font group on the Ribbon. See below
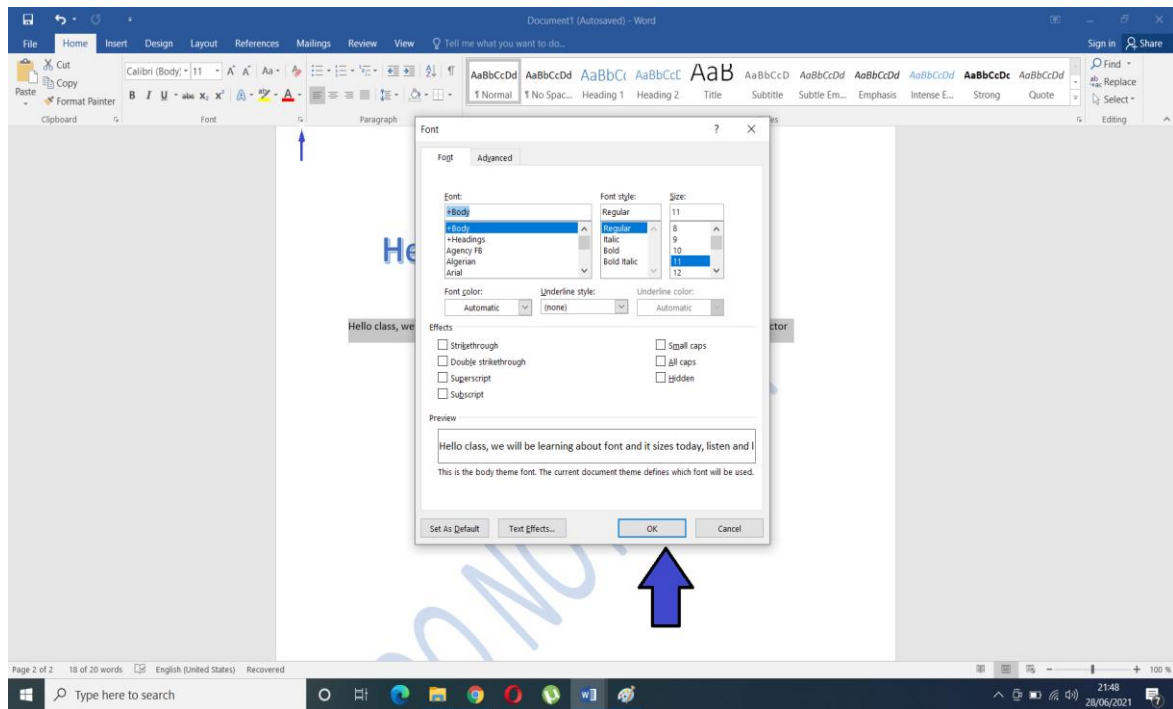
Figure 2.33: Font dialogue box
Source: Screenshot

3.5.5   Formatting Paragraphs and Document Layout

3.5.5.1 Aligning Paragraphs

To do this, select the text that you want to align. on the Home tab, in the Paragraph group, click Align Left or Align Right or Center or Justify. Align left is the default one. See below
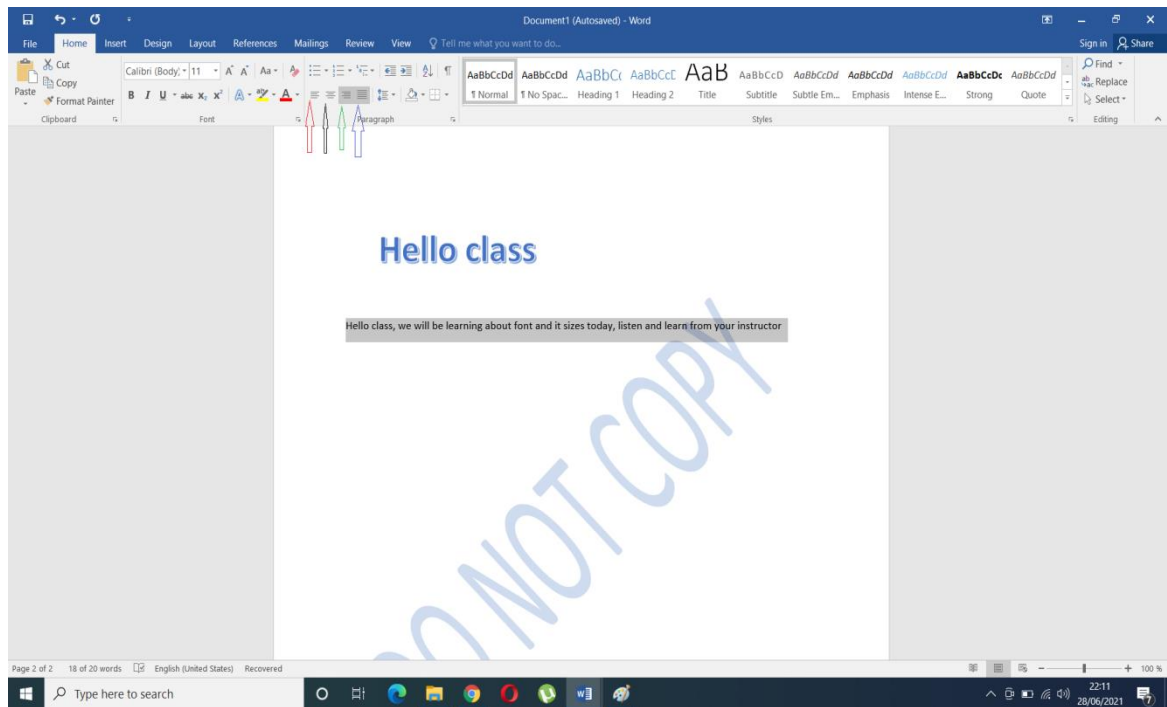
Figure 2.34: Aligning dialogue box
Source: Screenshot

3.5.5.2 Line Spacing and Paragraph spacing

Line spacing determines the amount of vertical space between lines of text in a paragraph. Paragraph spacing determines the amount of space above or below a paragraph. To do this, select the paragraphs you want to change. go to Home > Line and Paragraph Spacing, after which you choose the number of line spaces you want or select Line Spacing Options, and then select the options you want under Spacing. See below
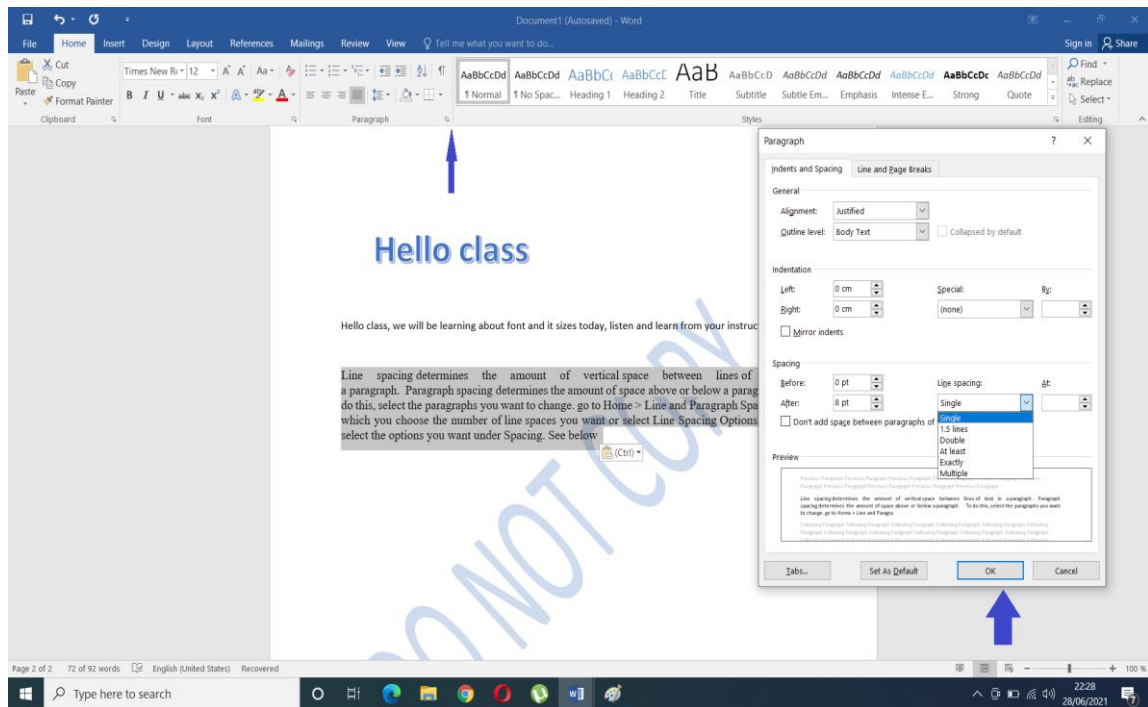
Figure 2.35: Line spacing and paragraphing box
Source: Screenshot

3.5.5.3 Setting Page and Section Breaks

Go to Layout > Breaks, and then choose the type of section break you want. Next Page Starts the new section on the following page. Continuous Starts the new section on the same page. See below
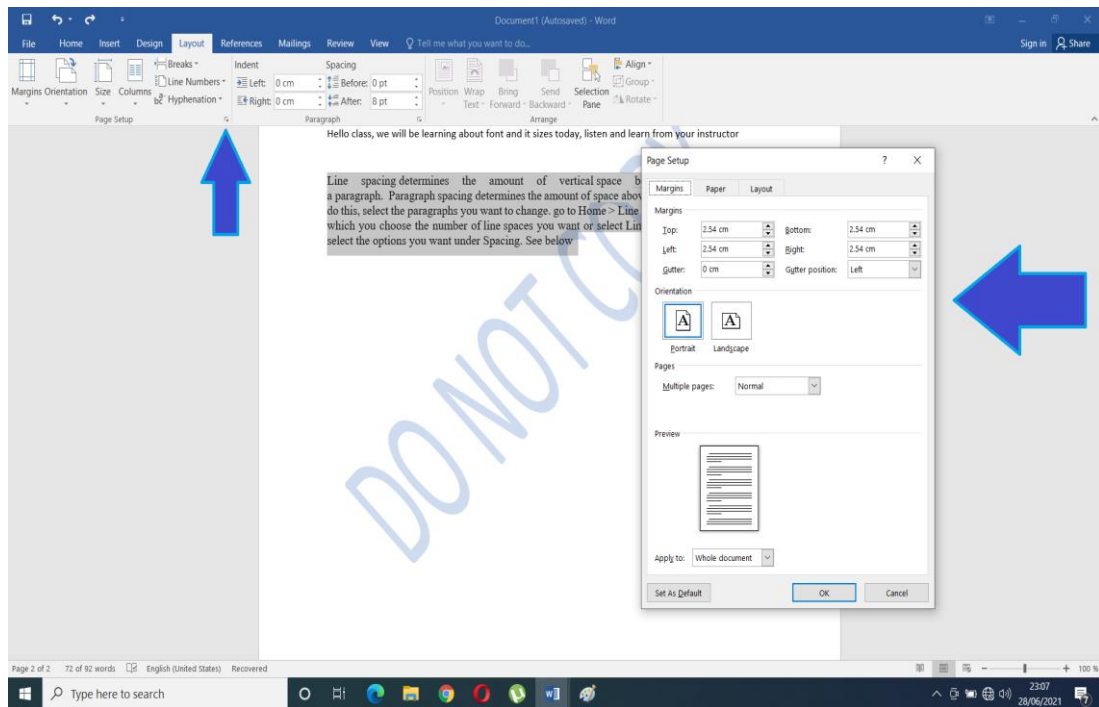
Figure 2.36: Page and section break
Source: Screenshot

3.5.5.4 Creating columns in a document

Select the Layout tab, then click the Columns command. A drop-down menu will appear. Select the number of columns you want to create. The text will format into columns. See below
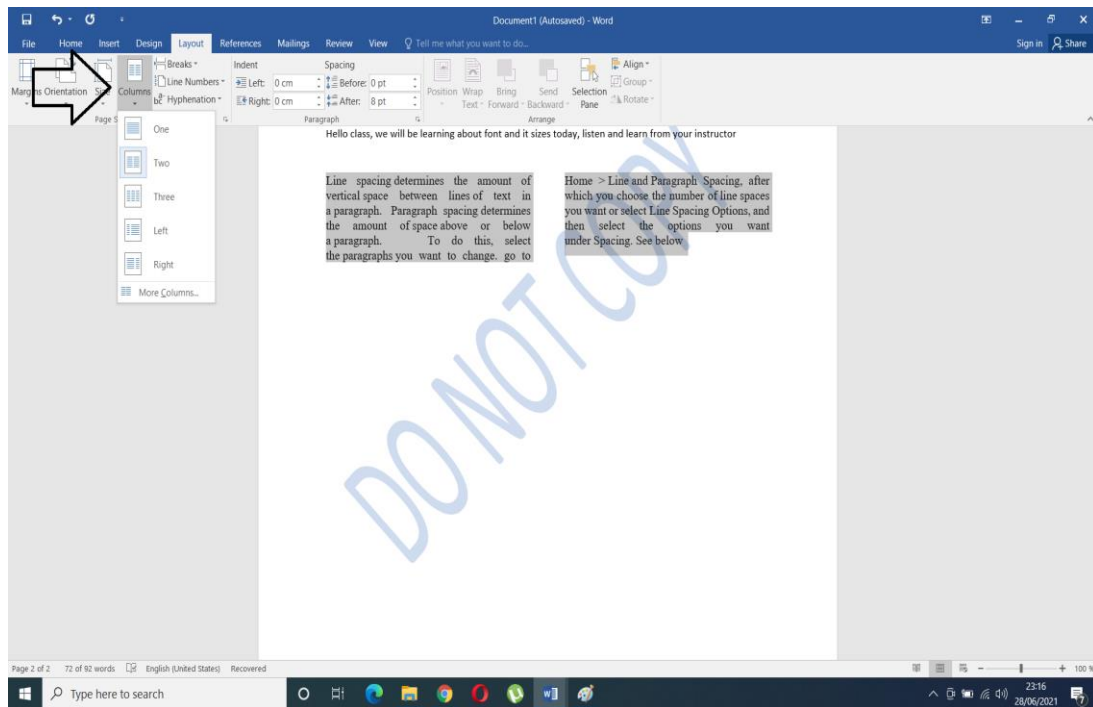
Figure 2.37: Creating columns; Source: Screenshot

3.5.5.5 Using Headers and footers

To do this, go to Insert > Header or Footer. choose the header style you want to use. Tip: Some built-in header and footer designs include page numbers. Add or change text for the header or footer then select Close Header and Footer or press Esc to exit. See below
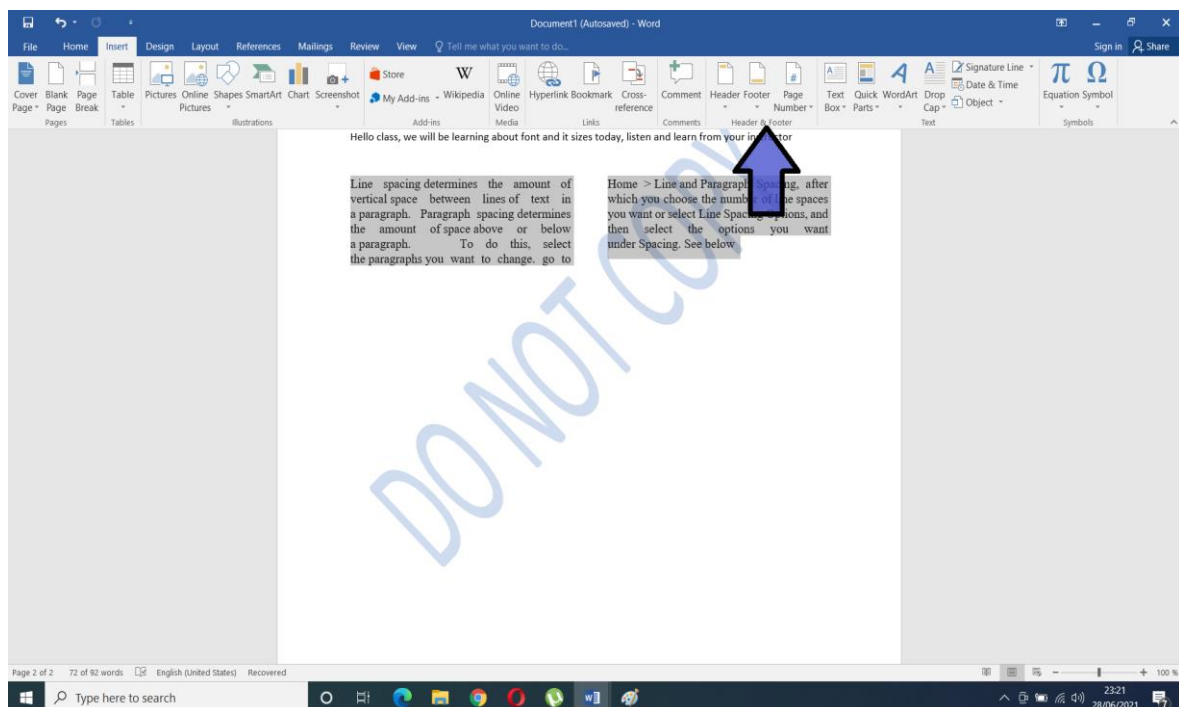
Figure 2.38: Header and footer
Source: Screenshot

3.5.5.6 Page setup dialog box

First, click the Layout tab, click the dialog box launcher in the lower-right corner of the Page Setup group, the Page Setup dialog box appears, Margins tab forward. Then you type the margin offsets in the Top, Bottom, Left, and Right boxes. Or you can use the spinner gizmo to set the values. Use the Preview to check the margins as they relate to page size. Ensure that the Whole Document is chosen from the Apply to menu button. You can reset margins for only a section or selected text if you instead choose those options from the menu. Click the OK button to confirm your new settings and close the Page Setup dialog box. See below
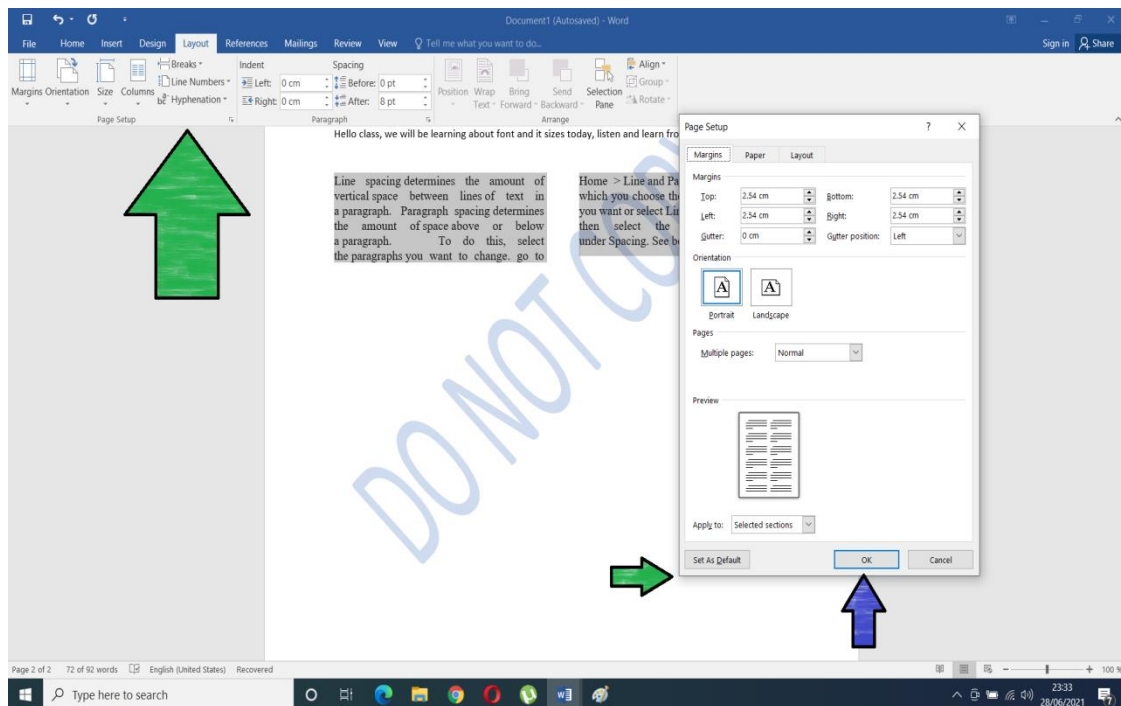
Figure 2.39: Page set up dialogue box
Source: Screenshot

3.5.5.7   Setting margins

Just as shown in the above picture, the margin is also in the page setup. See

below.
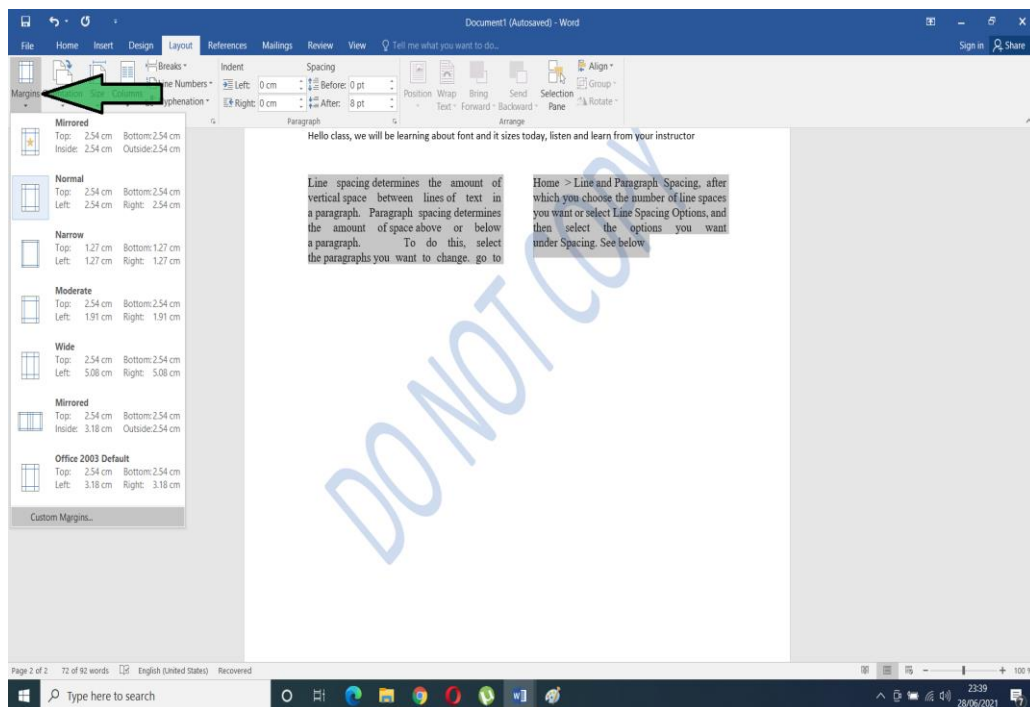
Figure 2.40: Margins
Source: Screenshot

3.5.5.8 Layout settings

See this on the page Setup > Orientation, you can either choose portrait or landscape.

3.6   SUMMARY

We have studied how to change document view, how to toggle the ruler, how to zoom a document, how to split our window, and how to select an object. We have examined how to use the spelling and Grammer Tools, how to format fonts, and about the font dialog box. We have also looked at how to align a paragraph, how to use the line spacing, and setting page layout. Also learned how to use margin for our document. Finally, we must know how to work with file formats, how to zoom documents, and delete and copy text as the case may be. Understanding how to use proofing tools are essential to maximize the usage of MS Word for writing. Basic formatting of text is pivotal to bringing the beauty of your writing to MS Word. Formatting of the paragraph makes our work look

professional, to accomplish that we need to align our paragraphs, we need to learn how to do page setup, how to set our layout.

Self-Assessment Exercises (SAEs)

1. Where is the Thesaurus located?
2. How can we change the fonts of a Text?
3. What is the process of opening a new document?
4. How do you toggle the ruler?
5. How do you work with copy and pasting?
6. How do you replace s text in a document?
7. How are actions undone and redone in MS Word document?
8. Where is orientation located?
9. How can you change the orientation of your document?

3.7 Glossary

Thesaurus: This is a facility available and used in Microsoft Word to find out synonyms and synonyms for a particular selected word. Authors are able to use it to find exact and suitable words to express their idea

Page orientation: This concept refers to "the direction in which a document is displayed. It is of two types; portrait (vertical) and landscape (horizontal). The default orientation is portrait; it can be changed to landscape by following these steps; Select the Page Layout tab. Locate the Page Setup group".

Font: "The word font refers to a set of printable or displayable typography or text characters in a specific style and size. Font styles are used in both print and digital text"

Undo: This is a process of canceling an action in MS Word.

Redo: This is the process of doing again an undone action in MS Word

3.8   REFERENCES/FURTHER READING

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3.9 Possible Answers to Self-Assessment Exercises (SAEs)

SAE 1: Where is the Thesaurus located?

Answer to SAE 1
The thesaurus is located under the review section of MS Word.

SAE 2: How can we change the fonts of a Text?

Answer to SAE 2

The commands to perform all of these formatting tasks are found on the Home tab in the Font group. Select your text and then click on the required formatting button to see the effects or highlight it and right-click to see options. Select an option to change the font, font size, font color, or make the text bold, italic, or underline

SAE 3: What is the process of opening a new document?

Answer to SAE 3

It is assumed that you are working on an open word file. First click on the file menu. Secondly, click on the "New" in the drop down and elect from one of the templates/blank document to open a new document.

SAE 4: How do you toggle the ruler?

Answer to SAE 4

You can show and hide both rulers simultaneously by repeatedly clicking/ toggling on Ruler in the Show section, under the View tab in the top menu bar.

SAE 5: How do you work with copy and pasting?

Answer to SAE 5

First highlight the text you what copied and pasted. Then click on the copy menu. After this move your cursor to the place on the document you want it pasted and click the paste menu.

SAE 6: How do you replace s text in a document?

Answer to SAE 6

Using crtl F to find and crtl H to replace or you use the icon under editing ribbon at the top left.

SAE 7: How are actions undone and redone in MS Word document?

Answer to SAE 7

At the right hand side of MS Word click on the undo icon and to redo an action click on the redo icon. Alternatively use Ctrl Z for undoing and Ctrl Y for redoing

SAE 8: Where is orientation located?

Answer to SAE 8

The page orientation is located under the page layout of MS Word.

SAE 9: How can you change the orientation of your document?

Answer to SAE 9

See this on the page Setup > Orientation,. You can then either choose portrait or landscape.

MODULE 3: PRESENTATION PACKAGE: POWERPOINT

UNIT 1: INTRODUCTION TO POWERPOINT

UNIT 2: USES OF TEXTS AND PICTURES IN POWERPOINT

By completing this module:

- ➢ You should be able to work with Microsoft powerpoint.
- ➢ You should be quick in carrying out presentation tasks given to you with ease.
- ➢ Be acquainted with powerpoint.

UNIT 1: INTRODUCTION TO POWERPOINT

1.1 Introduction

1.2 Learning Outcomes

1.3 Definition of PowerPoint and Description of its Operating Environment
       1.3.1 Definition of PowerPoint
       1.3.2 Description of Powerpoint Operating Environment

1.4 Creating Basic PowerPoint Presentation
       1.4.1 Opening Presentation
       1.4.2 Closing PowerPoint Presentation
       1.4.3 Creating New Presentation
       1.4.4 Saving Presentations
       1.4.5 Inserting New Slides and Slide Layouts
       1.4.6   Sharing presentations

1.5 Views in PowerPoint
       1.5.1   Sorter View and Reading View

1.6 Summary

1.7 Glossary

1.6 References/Further Reading

1.7 Possible Answers to Self-Assessment Exercises (SAEs)

1.1 INTRODUCTION

This Unit introduces you to the most versatile application package used for the presentation of information; and ideas to a large audience. The beauty of it is that It comes with a slide show. We will be creating a basic powerpoint presentation. We will be launching our first powerpoint slide. We will be introduced to the various viewpoint in powerpoint.

1.2 LEARNING OUTCOMES

At the end of this Unit, students should be able to:

● understand the PowerPoint environment,

- use the file back view and the Ribbon alongside the Title bar.
- create a New presentation, how to save their presentation,
- know how to insert New Slides, Share Presentations;
- and lastly, understand how to apply slides layouts.
- understand various viewpoints in powerpoint and these includes; Normal view, outline View, Slide Sorter View, Note page View, and Reading View

1.3 Definition of PowerPoint and Description of its Operating Environment

1.3.1 Definition of PowerPoint

PowerPoint is a graphics presentation package that enables you to create formatted presentations which can be used in some ways. You can produce projects such as overheads for a tea briefing, slides for a business meeting, or interactive onscreen presentations on your company's products. For our discussion here we will use PowerPoint 2010.PowerPoint 2010 allows you to create presentations for printing or online viewing using a variety of tools. The range of tools from wizards in the package helps you with the content, look and feel of your presentation, and the animation tools used to create moving images. Whatever, your presentation style is, PowerPoint has tools and enhancements to make your presentation easy and professional looking.

1.3.2 **PowerPoint Environment**

The PowerPoint window contains many features that look like the ones in Microsoft Office programs. These features include the Office button, Quick Access toolbar, Title bar, Tabs, scroll bars, and a Status bar. Search for PowerPoint on your search icon below is the image.
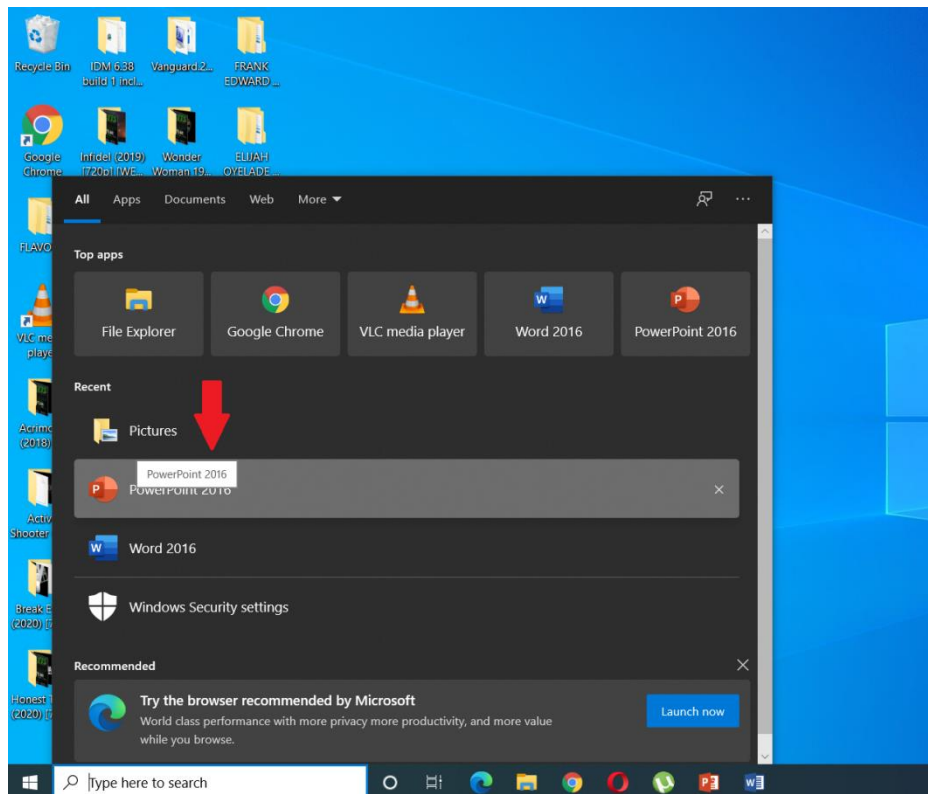
Figure 3.1: Powerpoint environment
Source: Screenshot

After launching the powerpoint app on your pc as followed in the image above,

you should see this below. Click on the Blank presentation.
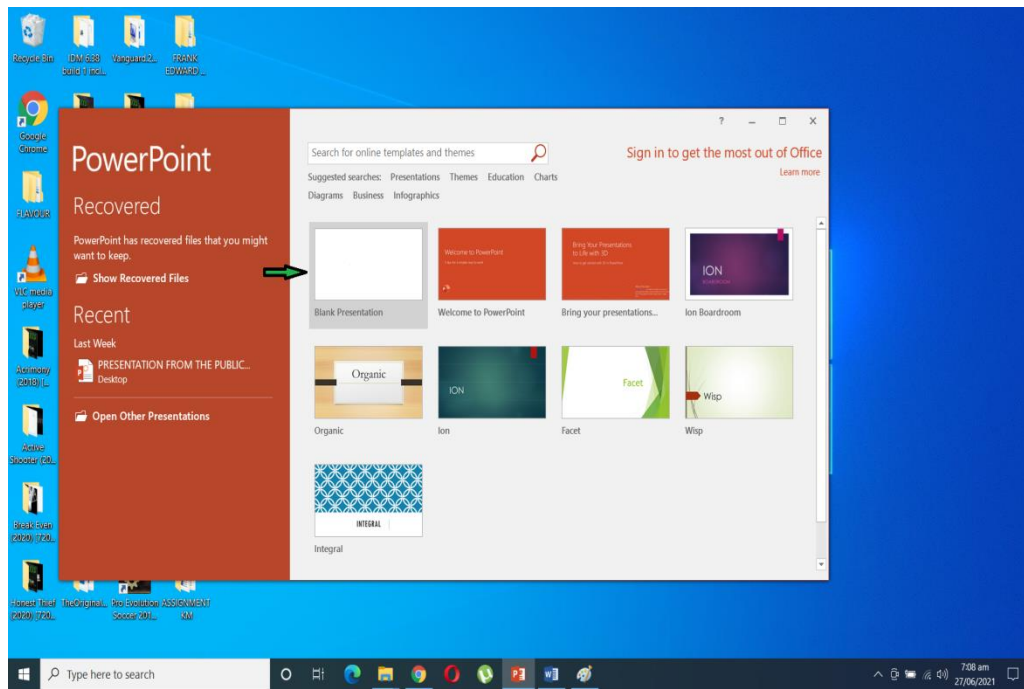
Figure 3.3:Blank presentation window
Source: Screenshot

TITLE BAR

The Title bar is located at the top in the center of the PowerPoint window. The Title bar displays the name of the presentation on which you are currently working.
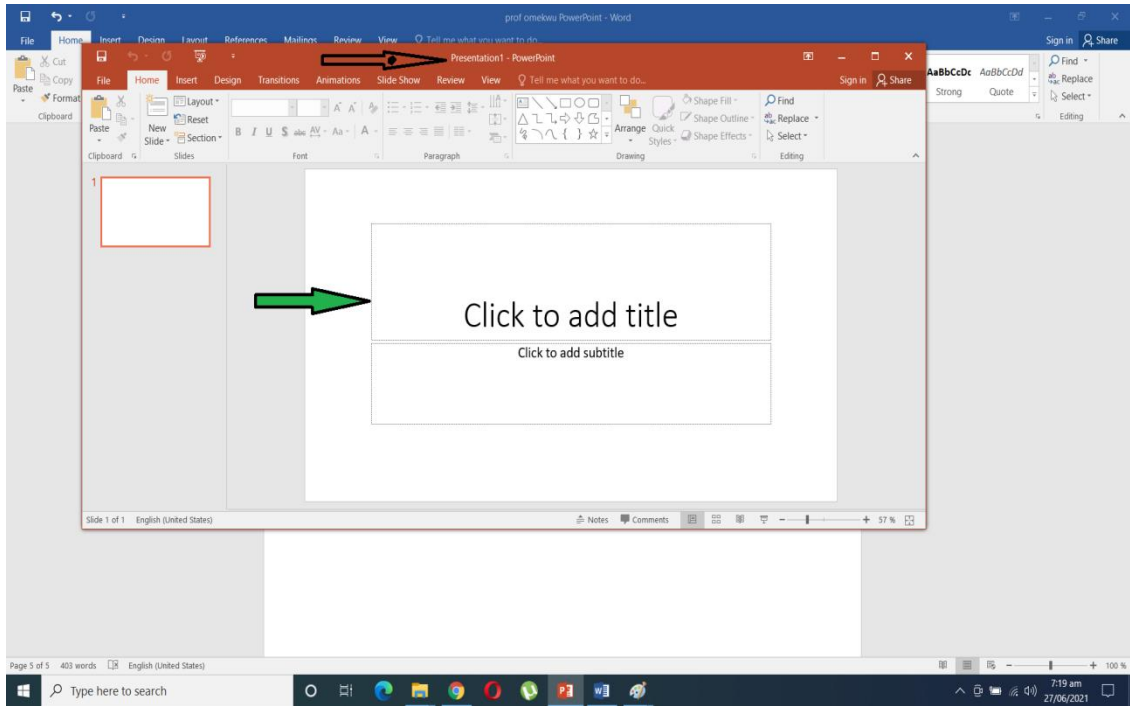
Figure 3.4: Title bar window
Source: Screenshot

The Ribbon

The Ribbon is Microsoft's primary user interface gadget. It is the strip of labels, which PowerPoint calls tabs, that runs across the top of the PowerPoint window.
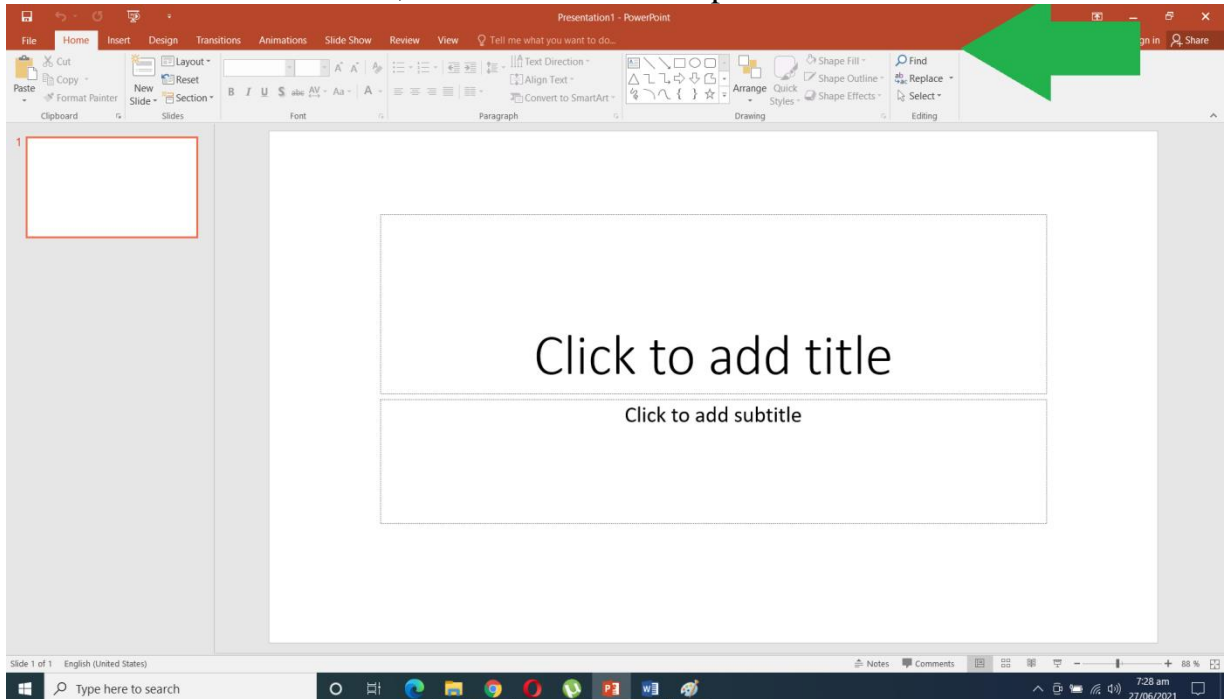
Figure 3.5: Ribbon bar
Source: Screenshot

File and Back view

You can access the Backstage view simply by clicking on the File tab. This is the area where files and data about them is managed— creating, saving, printing, sending to others, inspecting for hidden metadata or personal information, and setting options.
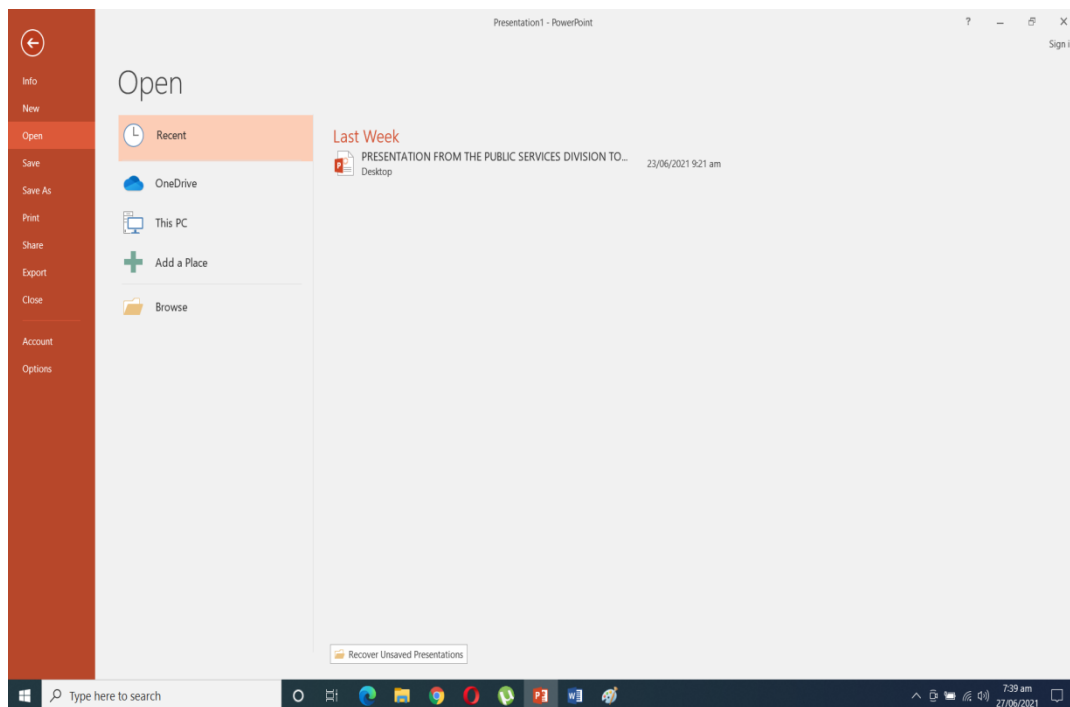
Figure 3.6: Backstage view
Source: Screenshot

1.4   Creating Basic PowerPoint Presentation

This section of the Unit is intended to address some practical aspects of the PowerPoint application package. Let us begin with how to open a PowerPoint presentation

1.4.1 Opening Presentation

First opening a presentation means you already have a powerpoint presentation on your PC, so to do this, click the File tab, then click Open. To see files saved in Open Document format in the File of type list, click Open Document Presentation. Click the file you want to open and click open, you can also double click it.
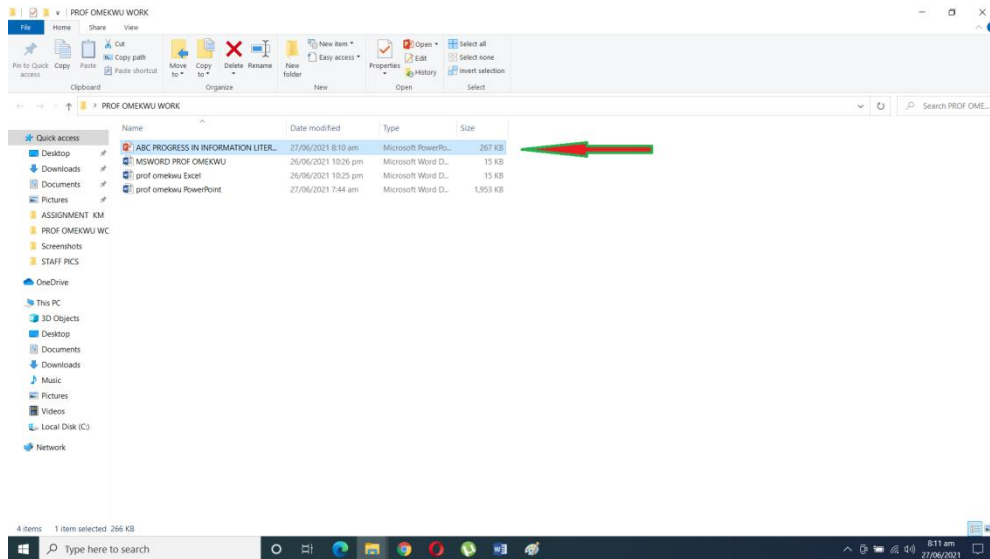
Figure 3.7: Opening presentation window
Source: Screenshot

Double click the already existing Presentation.
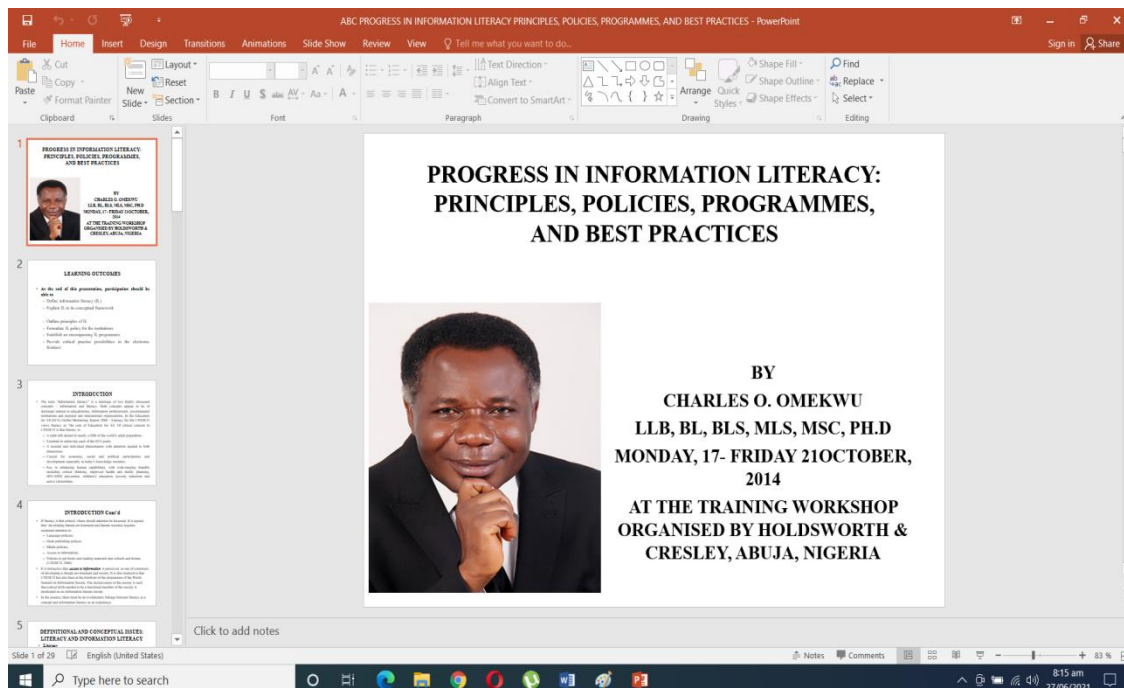
Figure 3.8: Opening an existing presentation
Source: Screenshot

1.4.2 Closing Presentation

Click the Close Window button (the X) in the presentation window.
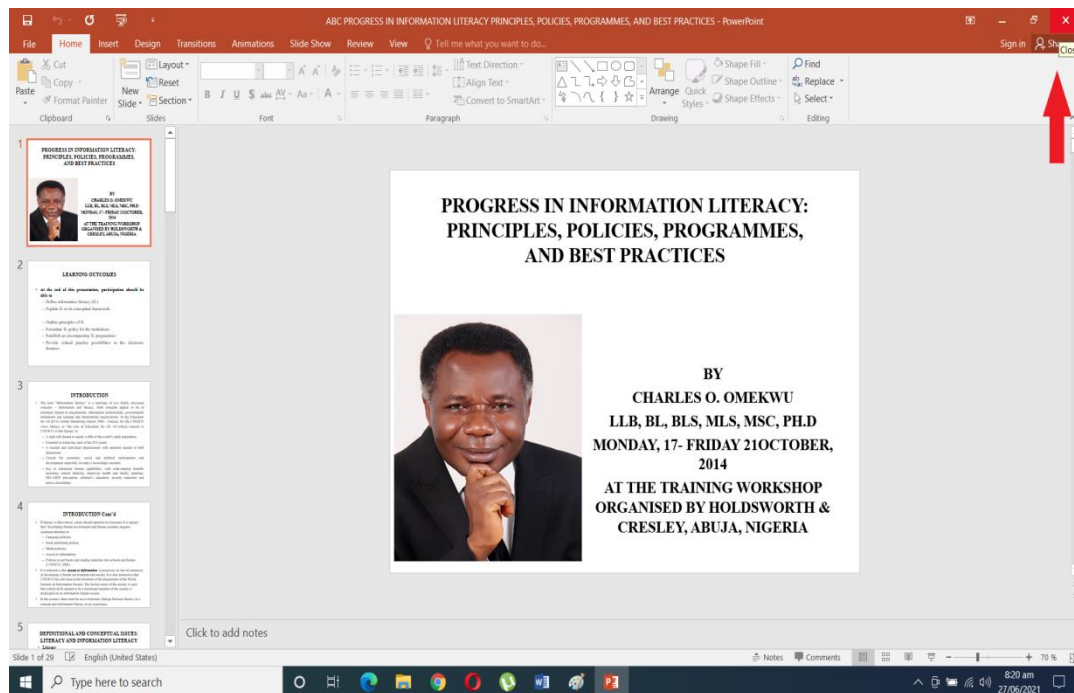
Figure 3.9: Closing presentation
Source: Screenshot

1.4.3 Creating New Presentation

To do this, open PowerPoint. Select an option: Select Blank Presentation to create a presentation from scratch.
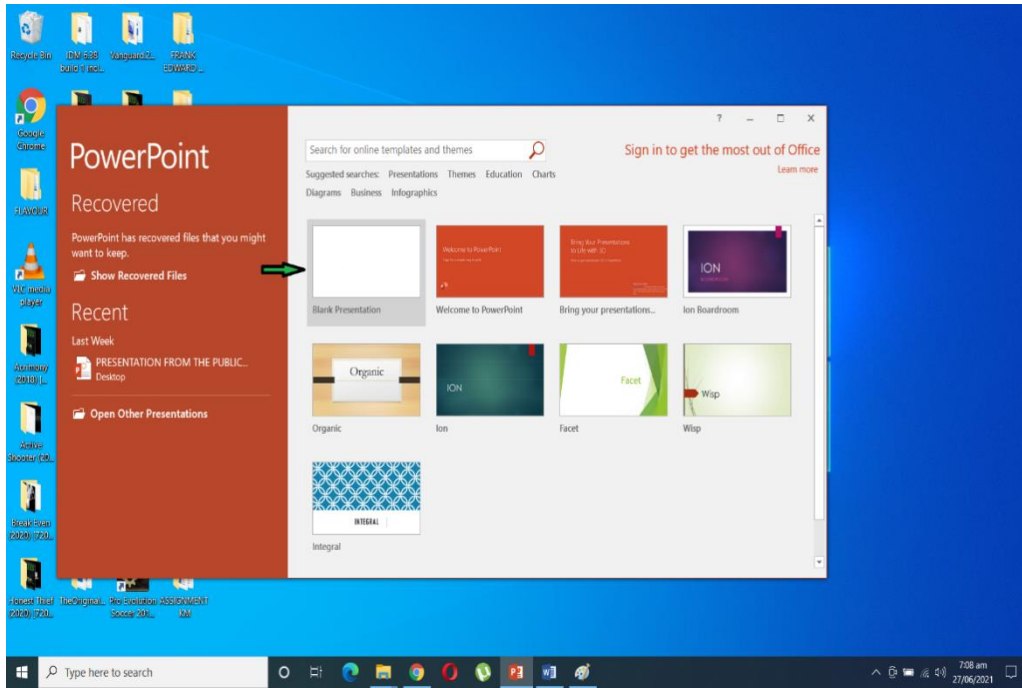
Figure 3.10: New presentation windon
Source: Screenshot

1.4.4 Saving Presentations

Saving for the first time, click the File tab, select Save As, below the Save As under Recent Folder, select Browse, pick the file path and the folder you want to save it into and then name your file. After saving as type with the file format you want. Select Save.
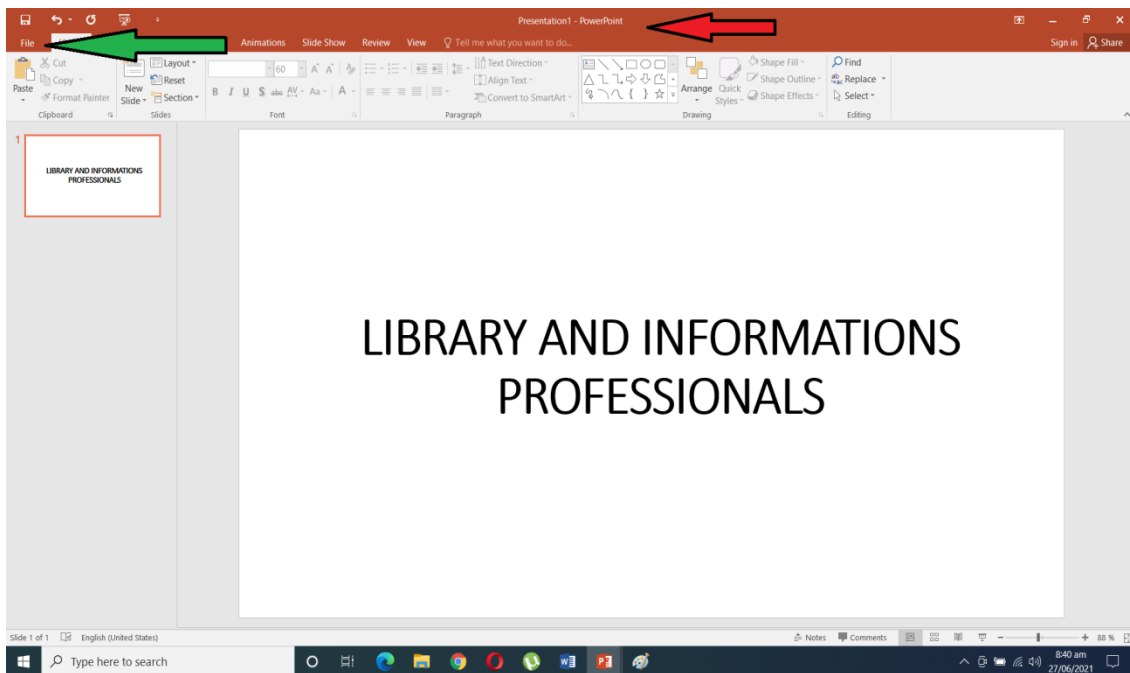
Figure 3.11: Saving presentation
Source: Screenshot

Notice the default name of the presentation above with a red arrow and notice it when it changes after saving it.
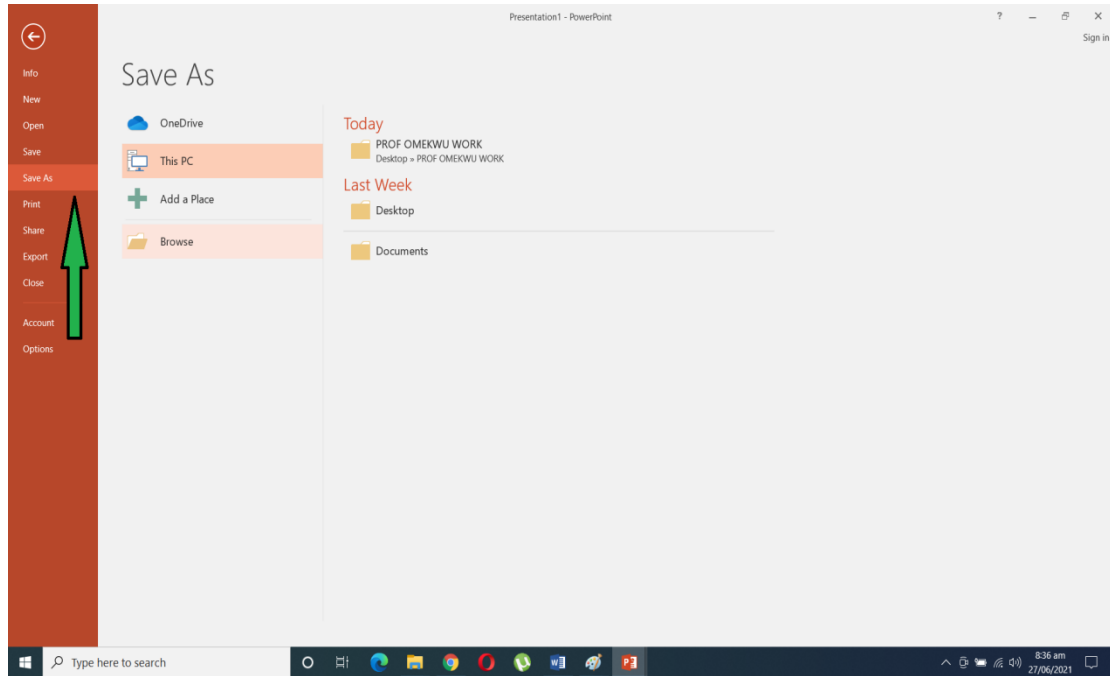
Figure 3.12: Default name of presentation
Source: Screenshot

After clicking the Save As, you will see the **Browse** and click it, it will take you to a dialog box as seen below.
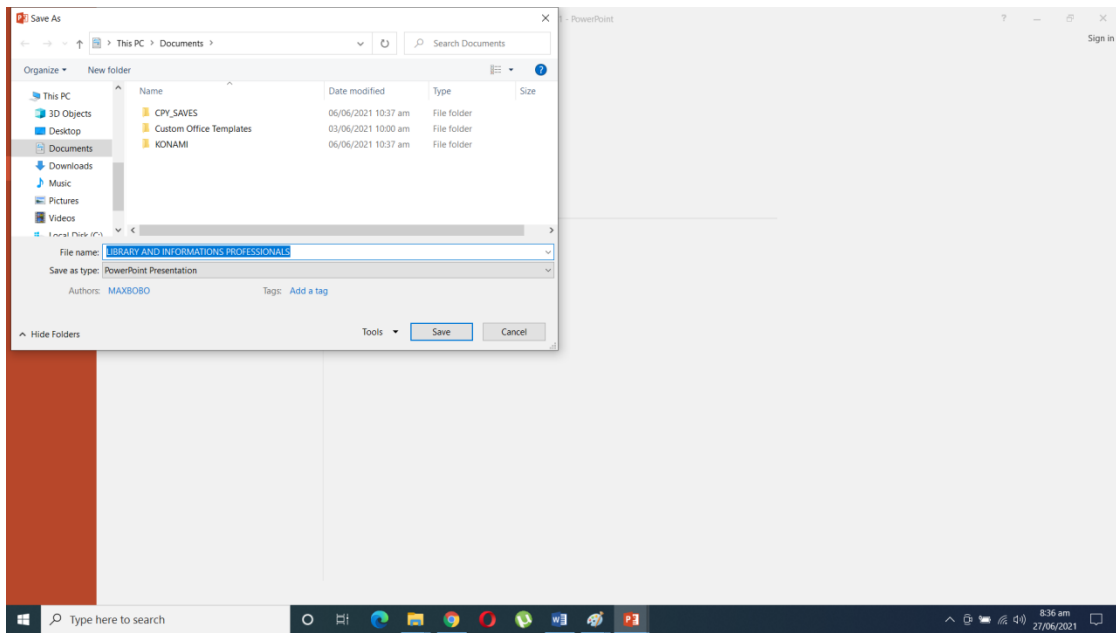
Figure 3.13: Saving presentaion
Source: Screenshot

You can choose to save it wherever you want as seen below.
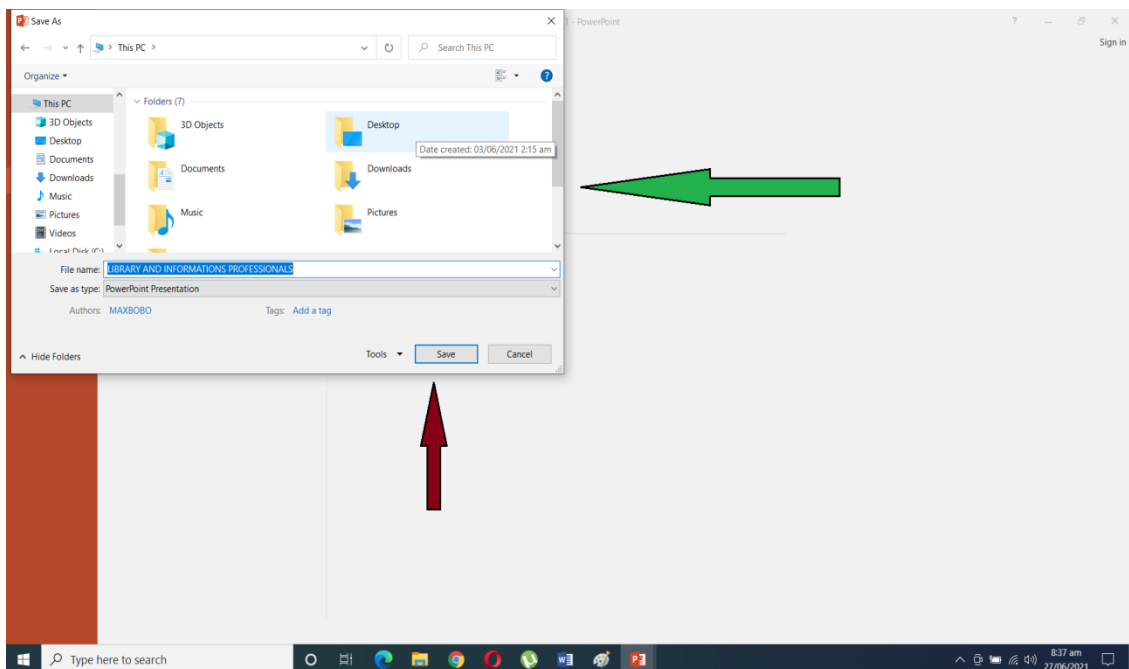
Figure 3.14: Choosing where to save presentation
Source: Screenshot

1.4.5 Inserting New Slides and Slide Layouts

Click the New Slide dialog box, select the layout that you want for your new slide as seen below.
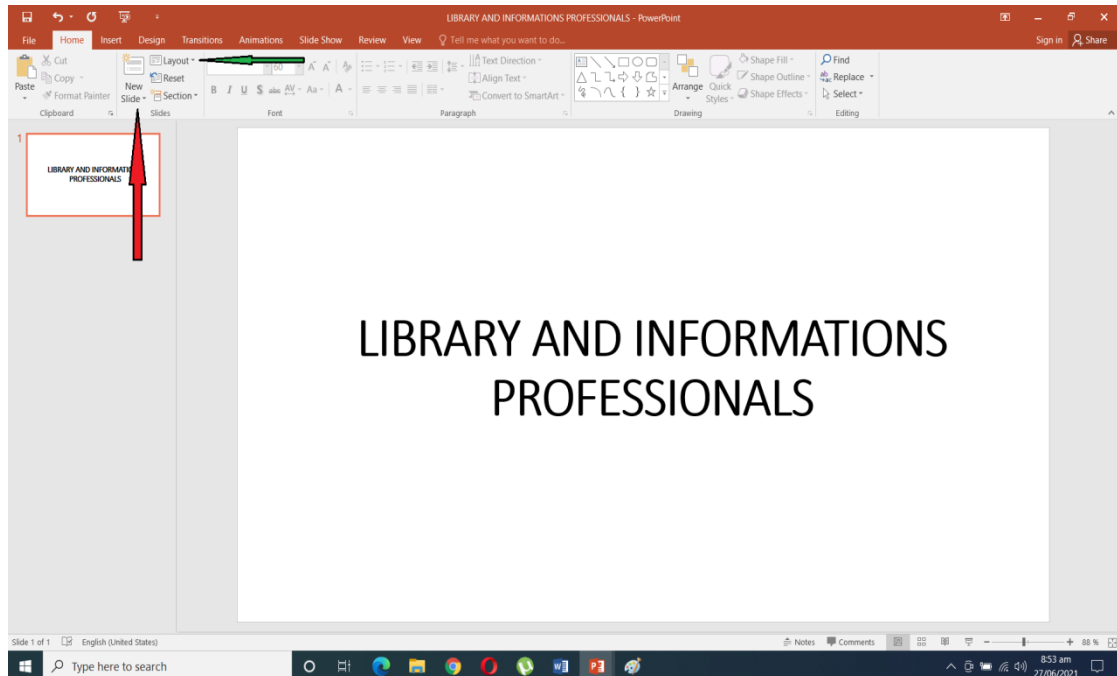
Figure 3.15: Inserting new slide
Source: Screenshot

1.4.6   Sharing presentations

To share your PowerPoint, click the top right of the ribbon, select the share, and select Invite people. After entering the email address of the people or person you wish to share your presentation with. See below.
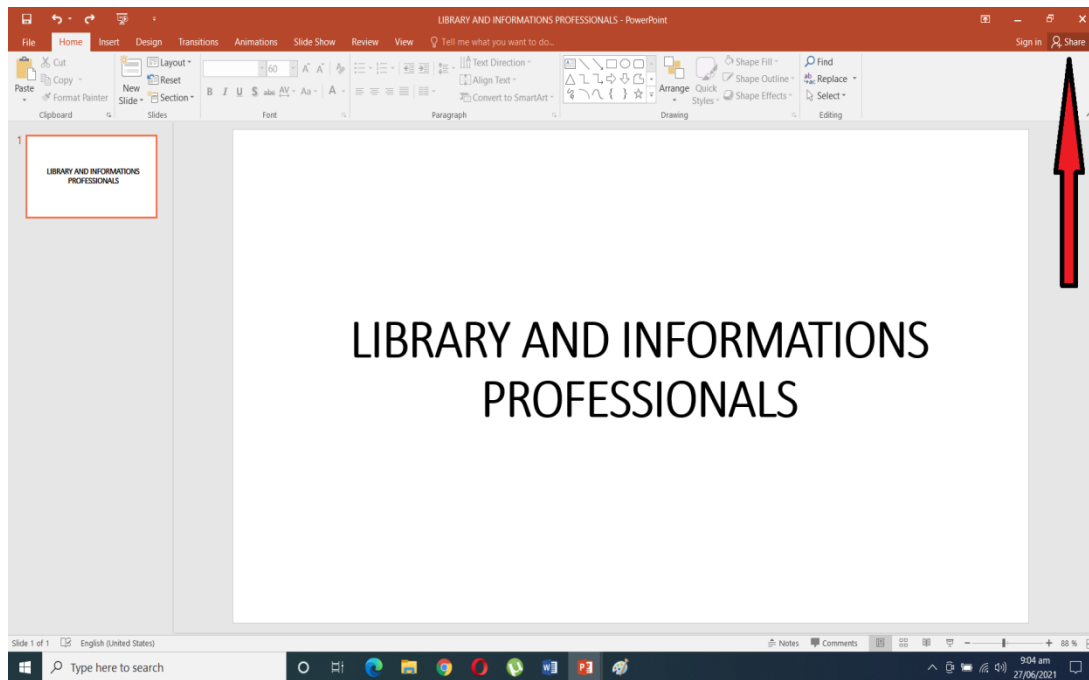
Figure 3.16: Sharing presentation
Source: Screenshot

1.5   Normal View and other various views

It is the standard **view** used for creating and viewing presentation slides. This **view** is also known as Slide **View. Check out VIEWS for all View Options.**
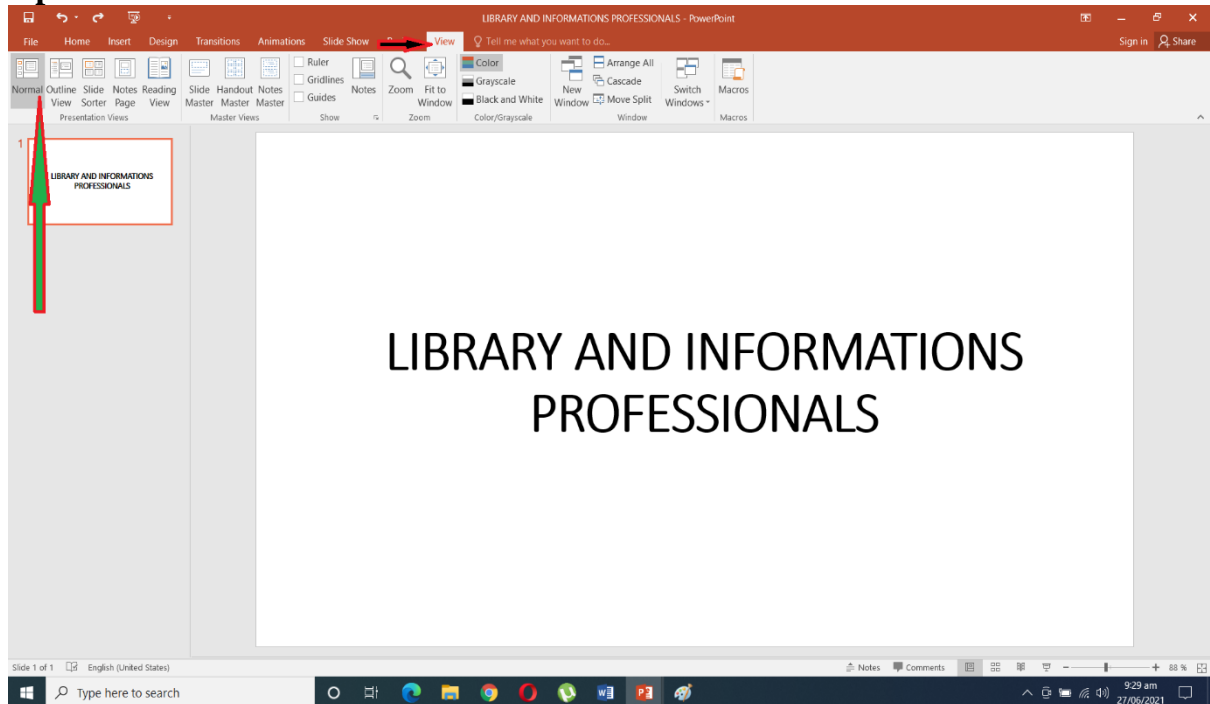
Figure 3.17: Normal view window
Source: Screenshot

1.5.1 Sorter View and Reading View

See below
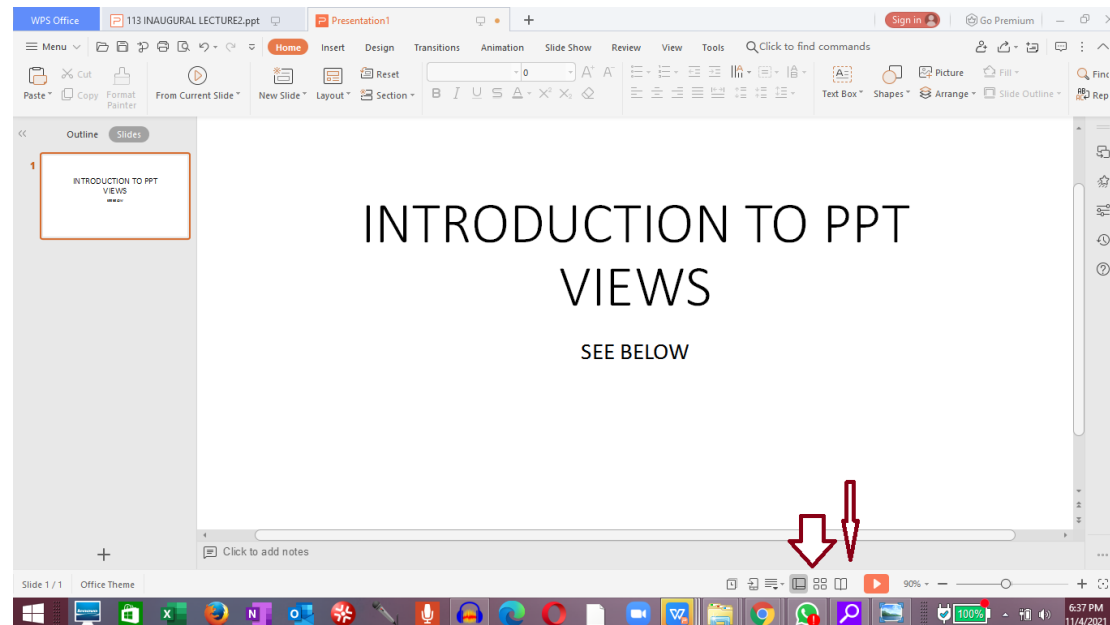
Figure 3.18: Sorter and reading view
Source: Screenshot

1.6 SUMMARY

We have explored how we can create a new slide, how to save slides, how to close slides, how to share our presentation, and how to apply new slides to our presentation. PowerPoint is used for presentation, we can presentation of information to an audience. Finally, we have seen how the Powerpoint Environment works using the Title Bar, the Ribbon, and the File and Back view. In conclusion, wherever you open a powerpoint presentation it is expected that we close our work but then we first understand that documents or files not saved can be lost hence it is a good practice to save your work whenever you made any changes.

SELF-ASSIGNMENT EXERCISES (SAEs)

1. What is the icon sign to close a presentation?
2. What is the process to save a presentation for the first time?
3. How can you insert new slides?
4. How do you make a presentation in PowerPoint?
5. What is powerpoint?
6. What is powerpoint Environment?
7. Where is the backstage view located?
8. What are the various Viewpoints in PowerPoint?

9. What is the Reading Viewpoint used for?

1.7 Glossary

Microsoft PowerPoint: A presentation programme created by Robert Gaskins and Dennis Austin.

Normal view: The PowerPoint presentation viewed in its normal format.

PowerPoint Animation: This is used to create games or movies

PowerPoint Deck: Describes the slides that can be built on the PowerPoint platform.

PowerPoint Slide Show: A process that allows users to add audiovisuals qualities to their presentations.

Reading View: It is used to view the content of the presentation as if you are using the slide show view but withing the frame of the application window compared yo the full screen.

1.8 REFERENCES/FURTHER READING

Bucki, Lisa A. et. al.(2013).*Microsoft office 2013 Bible: the comprehensive tutorial resource*. Indianapolis: Wiley.

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Cox, J., Lambert, J. & frye, C. (2011). *Microsoft office: professional 2010 step by step*. Washington: Microsoft press.

Foulkes, L.(2020). *Learn Microsoft office 2019: a comprehensive guide to getting started with Word, PowerPoint, Excel Access, and Outlook*. Birmingham: Packt publishing.

Lambert, J. (2015).Microsoft PowerPoint 2016 step by step. Washington: Microsoft press.

Lowe, D.(2019). *Microsoft PowerPoint 2019 for dummies.* New Jersey: Wiley.

Wempen, F. (2013).*Microsoft PowerPoint 2013 Bible*. Indianapolis: Wiley.

1.9 POSSIBLE ANSWERS TOSELF-ASSIGNMENT EXERCISES (SAEs)

SAE 1: What is the icon sign to close a presentation?

Answer to SAE 1:

The icon sign to close a PowerPoint presentation is X, especially if you have multiple presentations open.

SAE 2: What is the process to save a presentation for the first time?

Answer to SAE 2:

To save a presentation for the first time, click the File tab, select Save As, below the Save As under Recent Folder, select Browse, pick the file path and the folder you want to save it into and then name your file. After saving as type with the file format you want.

SAE 3:How can you insert new slides?

Answer to SAE 3;

To insert a new slide, click the New Slide dialog box, select the layout that you want for your new slide

SAE 4: How do you make a presentation in PowerPoint?
Answer to SAE 4:

To do this, open PowerPoint. Select an option: Select Blank Presentation to create a presentation from scratch.

SAE 5: What is powerpoint?

Answer to SAE 5:

PowerPoint is a graphics presentation package that enables you to create formatted presentations which can be used in some ways. You can produce projects such as overheads for a tea briefing, slides for a business meeting, or interactive onscreen presentations on your company's products.

SAE 6: What is powerpoint Environment?

Answer to SAE 6

The PowerPoint environment contains many features that look like the ones in Microsoft Office programs. These features include the Office button, Quick Access toolbar, Title bar, Tabs, scroll bars, and a Status bar.

SAE 7: Where is the backstage view located?

Answer to SAE 7:
The backstage view is located in the File tab on the ribbon. To access this view, click the File tab on the Ribbon.

SAE 8: What are the various Viewpoints in PowerPoint?

Answer to SAE 8:
The various viewpoints in powerpoint include the normal, slide sorter, reading, slide master, handout master and note master notes views.

SAE 9: What is the Reading Viewpoint used for?

Answer to SAE 9:

The Reading View is used to view the content of the presentation as if you are using the slide show view but with the frame of the application window compared you the full screen

UNIT 2 USING TEXT IN POWERPOINT AND USING PICTURES IN POWERPOINT

2.1 Introduction
2.2 Learning Outcomes

2.3 Using Text in PowerPoint and Using Pictures in PowerPoint
      2.3.1   Adding text slides
      2.3.2 Inserting pictures saved on your PC
      2.3.3   Inserting Online Pictures
      2.3.4   Using PowerPoint Picture Tools

2.4 Printing, Animations, Video, Inserting of Video, Themes, Settings of Slides
      2.4.1   Running a slide show
      2.4.2   Using custom shows
      2.4.3   Changing slide size

2.5 Setting up Your Presentation and Inserting Charts, Objects, and Tables
      2.5.1 Inserting charts
      2.5.2 Inserting objects
      2.5.3   Inserting tables

2.6 Summary

2.7 Glossary

2.8 References/Further Reading

2.9 Self-Assignment Exercises (SAEs)

2.1   INTRODUCTION

Text and pictures are used in powerpoint often to convey a message. We must understand how to manipulate the image using the powerpoint picture tools. Whenever you are done with your powerpoint document you can choose to print it out and also you can also have your powerpoint animated.

2.2   LEARNING OUTCOMES

At the end of this Unit, students are expected to

- know how to use text on powerpoint; how to format a paragraph,
- how to insert pictures saved on your PC,
- how to use online pictures and lastly

- how to use the picture tools
- know how to print a powerpoint presentation,
- how to use animations in their presentation, and
- how to set a slide show.

2.3 Using Text in PowerPoint and Using Pictures in PowerPoint

2.3.1 Adding text slides

On the slide, click the location where you want to add the text box. Type or paste your text in the text box. As seen in Fig……….
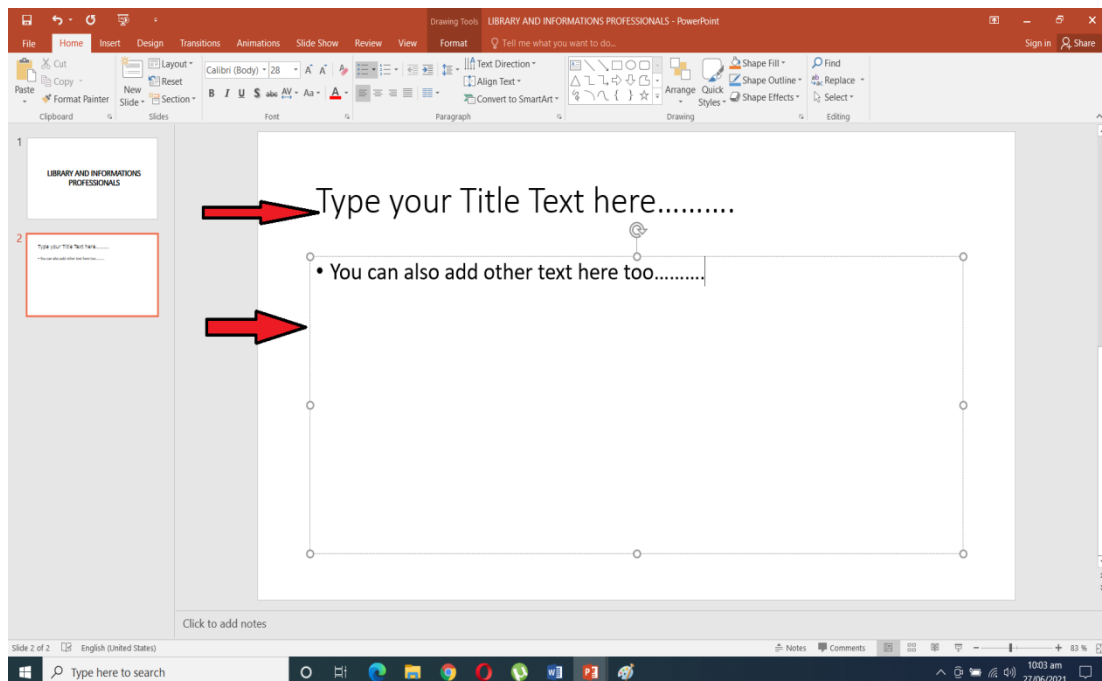
Figure 3.19: Text addition window
Source: Screenshot

Highlight the text you want to format, right-click on it and make whatever formatting you want for your text as seen below
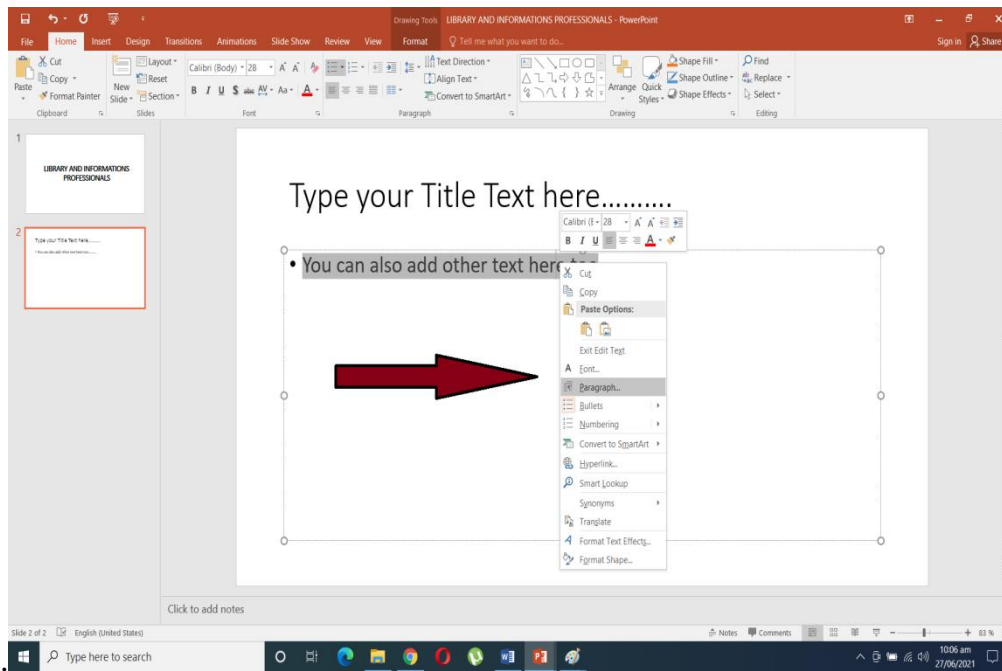
Figure 3.20:Text formatting window
Source: Screenshot

2.3.2 Inserting pictures saved on your PC

To do this, click where you want to insert the picture on the slide after which you click, insert then will see a dropdown to Pictures.In the dialog box that opens, browse to the picture that you want to insert, click that picture, and then click Insert as seen below.
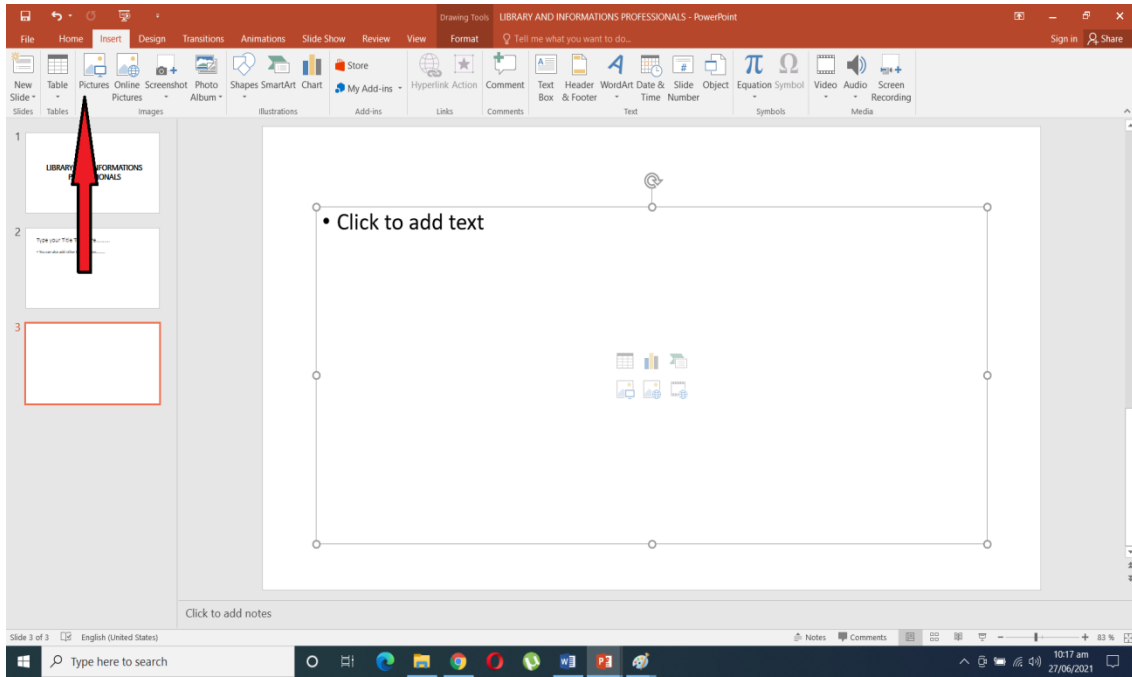
Figure 3.21: Inserting picture from PC
Source: Screenshot

Next, select any document of your choice as seen below.
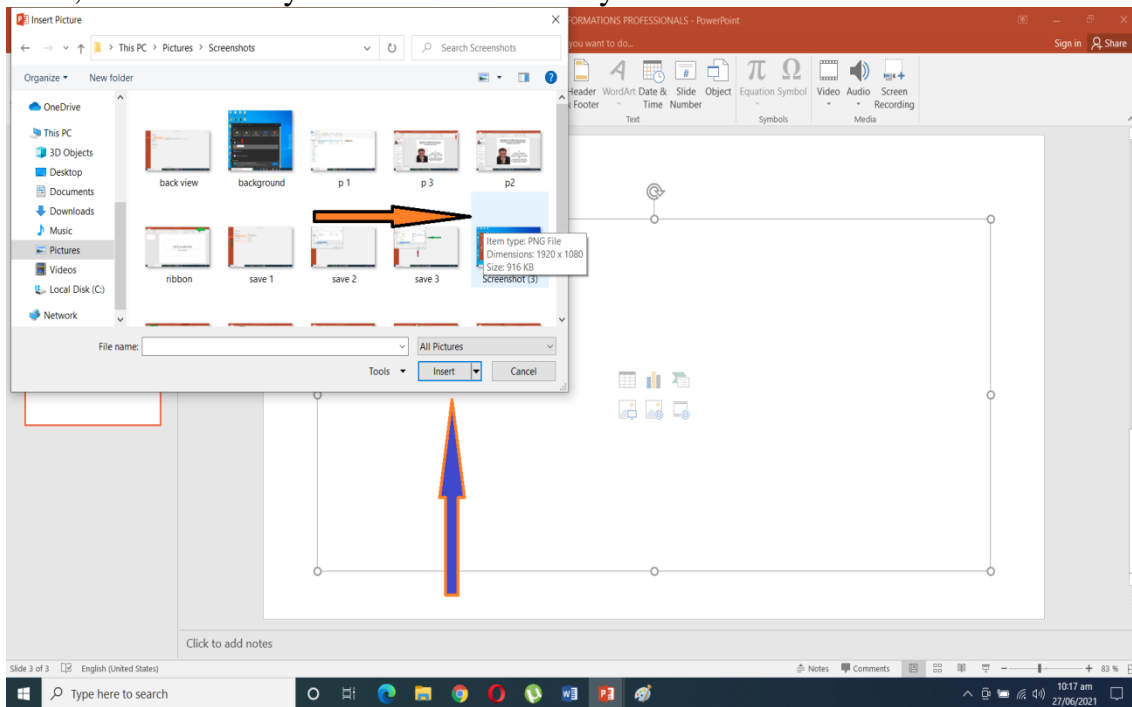
Figure 3.22: Document selection window
Source: Screenshot

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Here   is   the   output….
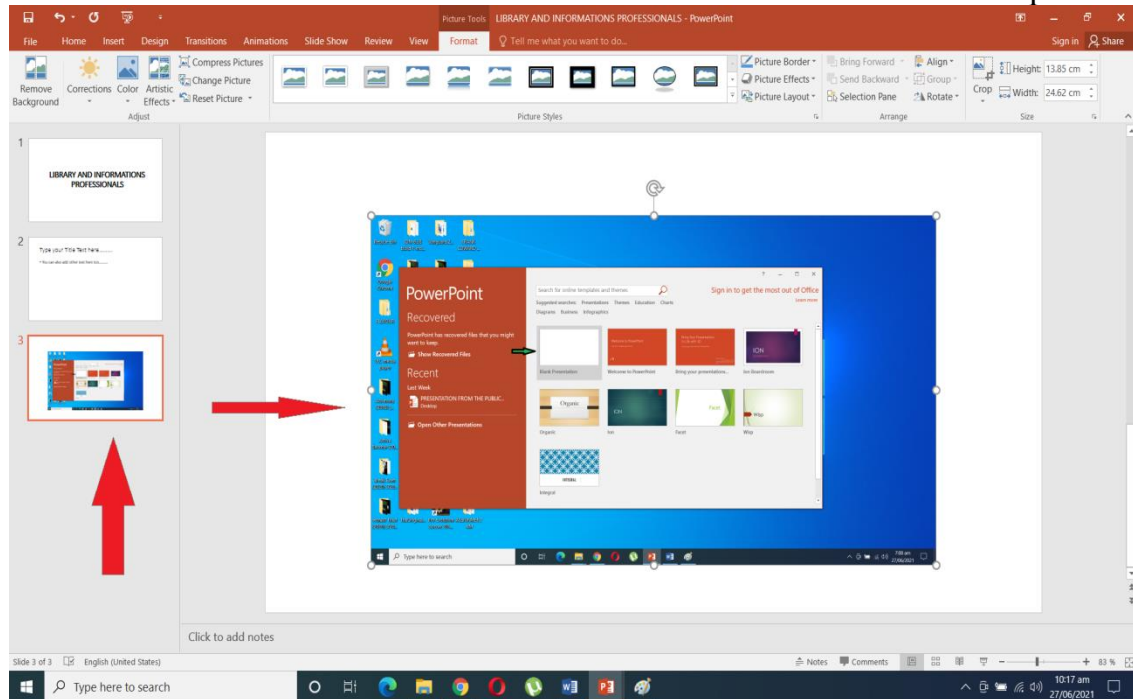
Figure 3.23: Selection output window
Source: Screenshot

2.3.3   Inserting Online Pictures

Same process as inserting from your PC
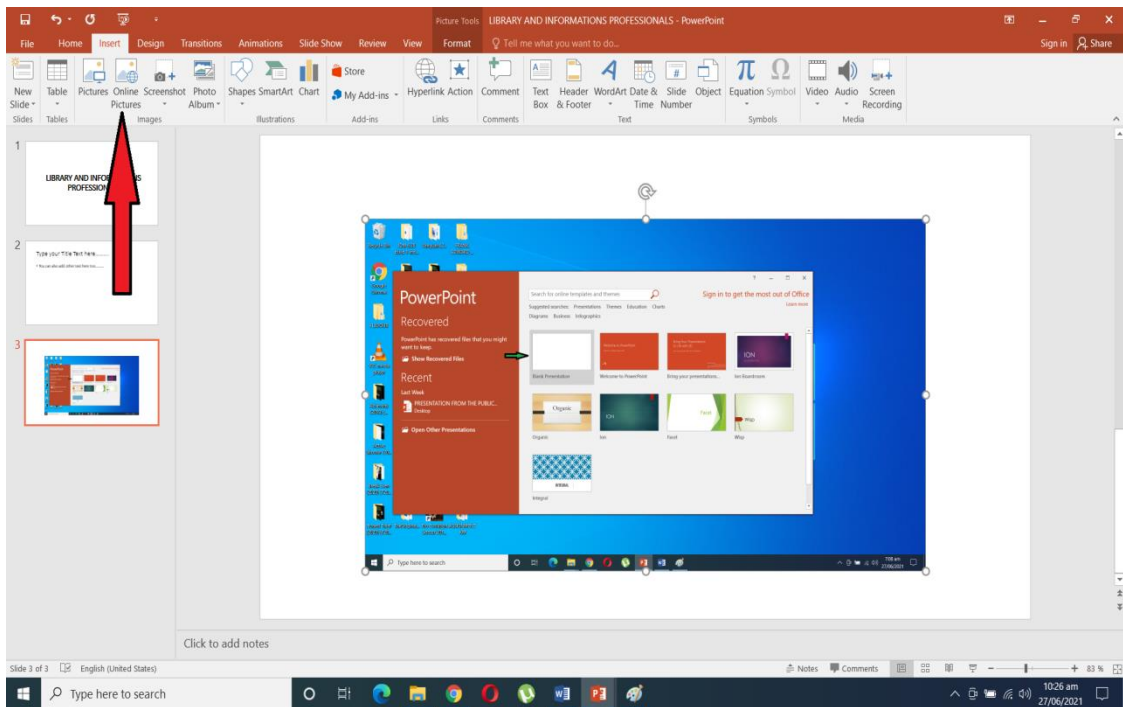
Figure 3.24: Inserting online picture window
Source: Screenshot

2.3.4   Using PowerPoint Picture Tools

PowerPoint allows you to change the picture style and shape, add a border, crop and compress pictures, add artistic effects, and more. With this, you can do a lot with your desired image.
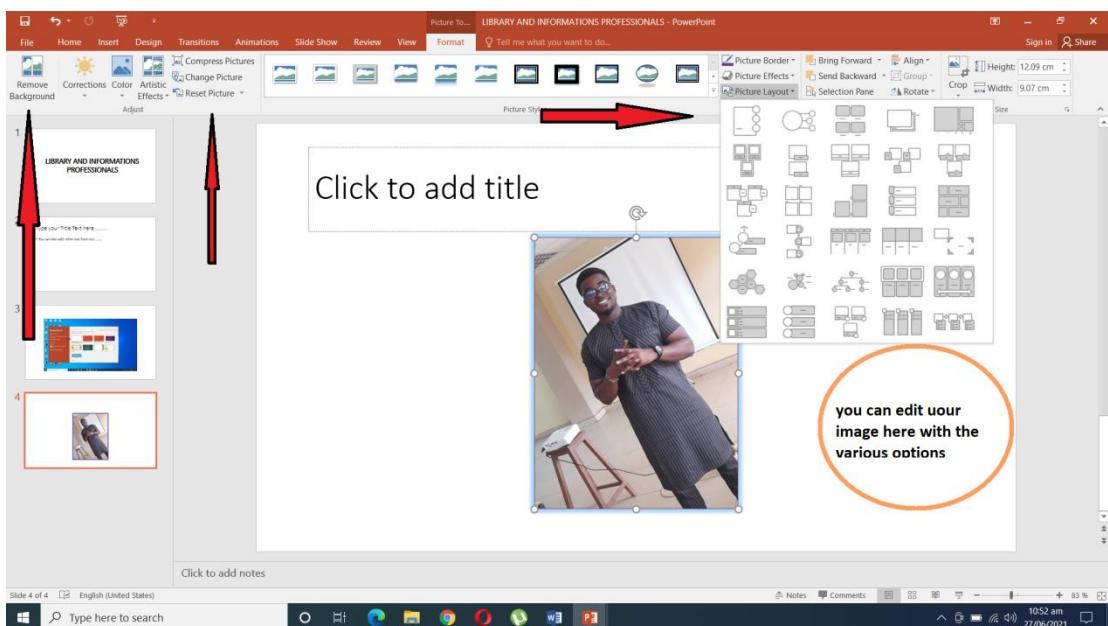
Figure 3.25: Powerpoint picture tools
Source: Screenshot

2.4 Printing, Animations, Video, Inserting of Video, Themes, Settings of Slides

2.4.1 Running a slide show

Click the Start from Beginning command on the Quick Access Toolbar, or press the F5 key at the top of your keyboard. The **presentation** will appear in full-screen mode as seen below.
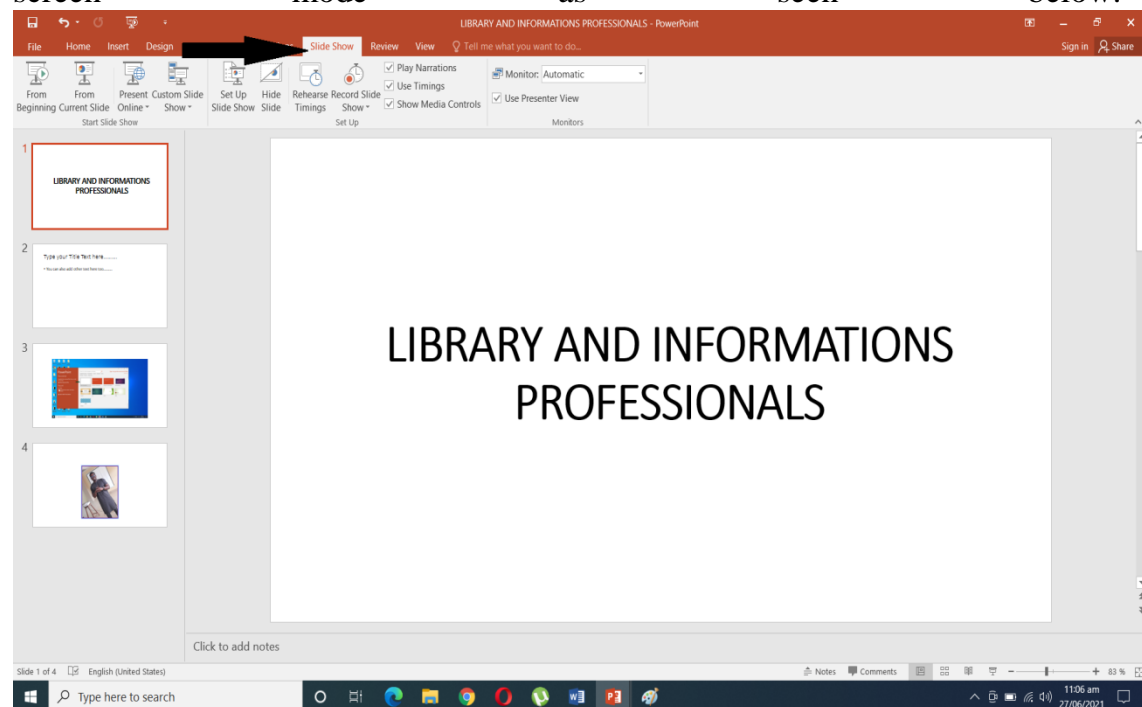
Figure 3.26: Starting slide show
Source: Screenshot

2.4.2 Using custom shows

Same process as the slide show with a click to the Custom show, and then click the custom show that you want as seen below.
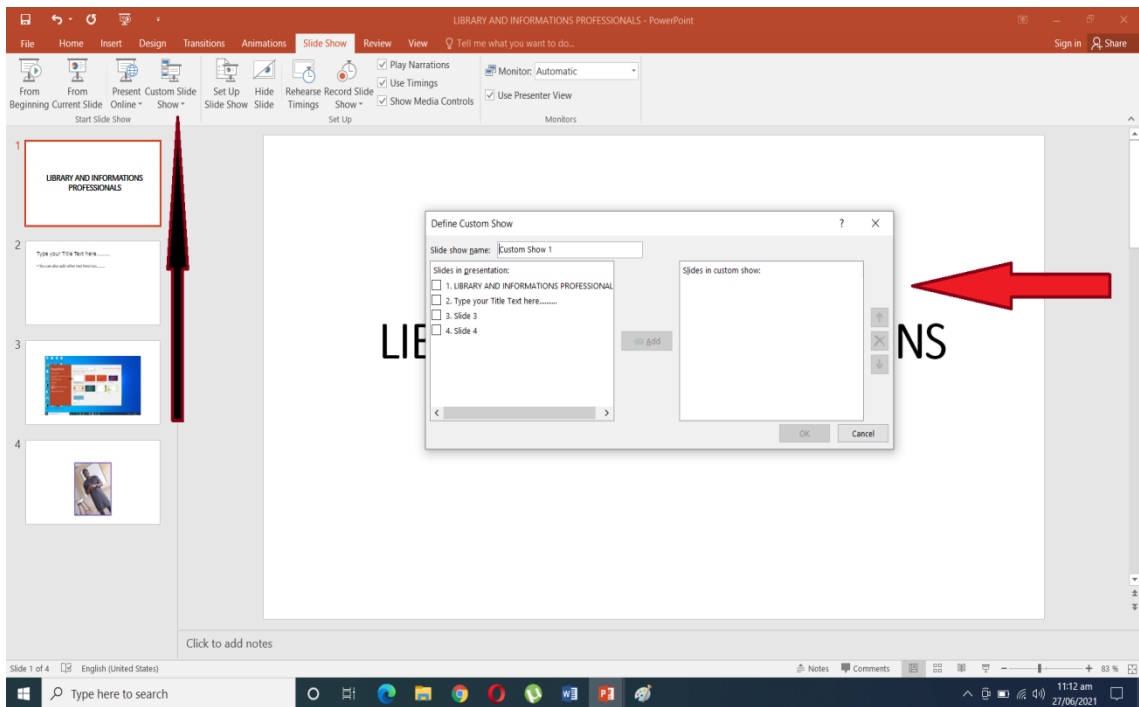
Figure 3.27: Custom show
Source: Screenshot

2.4.3   Changing slide size

Open your PowerPoint presentation to begin and then click the "Design" tab on the ribbon bar. In the "Customise" section of the "Design" tab, select the "Slide Size" button. This will display the two common slide sizes in a drop-down menu. See below.
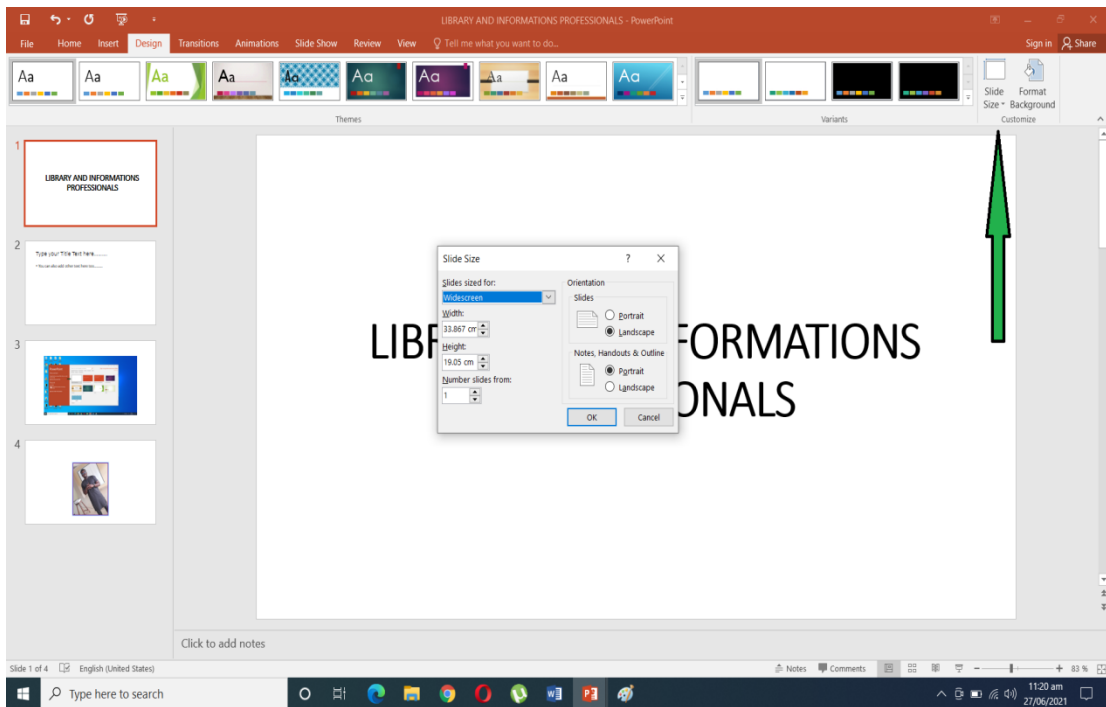
Figure 3.28: Choosing slide size
Source: Screenshot

2.4.4 Setting slide header and footer

In the Header and Footer box, on the Slide tab, select the Footer check box, and then type the footer text that you want. Click Apply to All. See below.
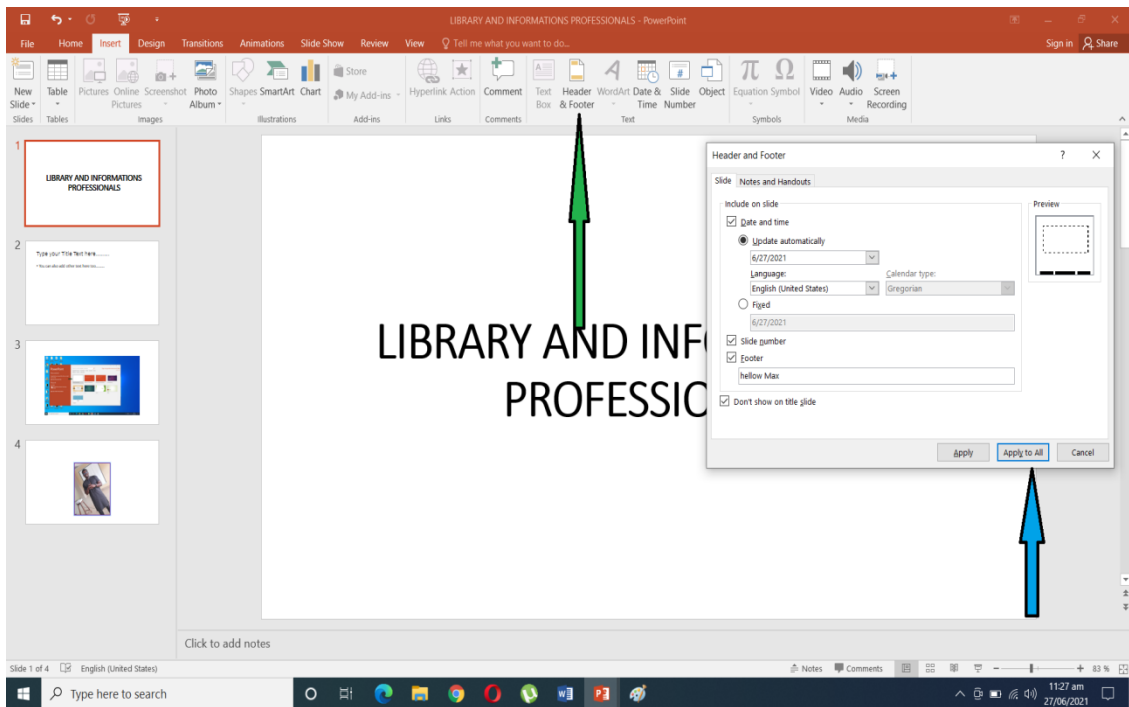
Figure 3.29: Setting slide header and footer
Source: Screenshot

2.4.5   Previewing and printing presentations in powerpoint

Click on the file at the top left and it will take you to where you will see print.
Click print to preview and print as shown below.
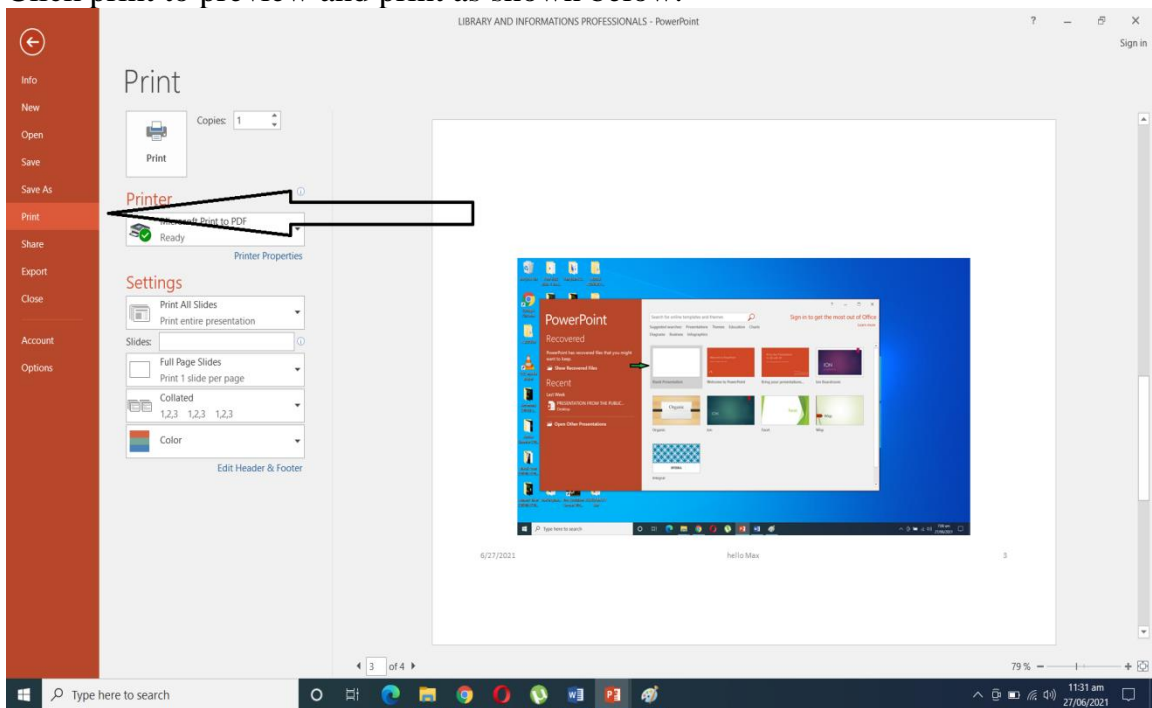
Figure 3.30: Preview of presentation
Source: Screenshot

2.4.6 Adding slide Transition Animation

Select the object you want to animate. Choose the Animations tab. Click the Custom Animation button. The Custom Animation pane appears. Click the Add Effect button. A menu appears. Choose the type of effect you want. A submenu appears. Click the effect you want. See below.
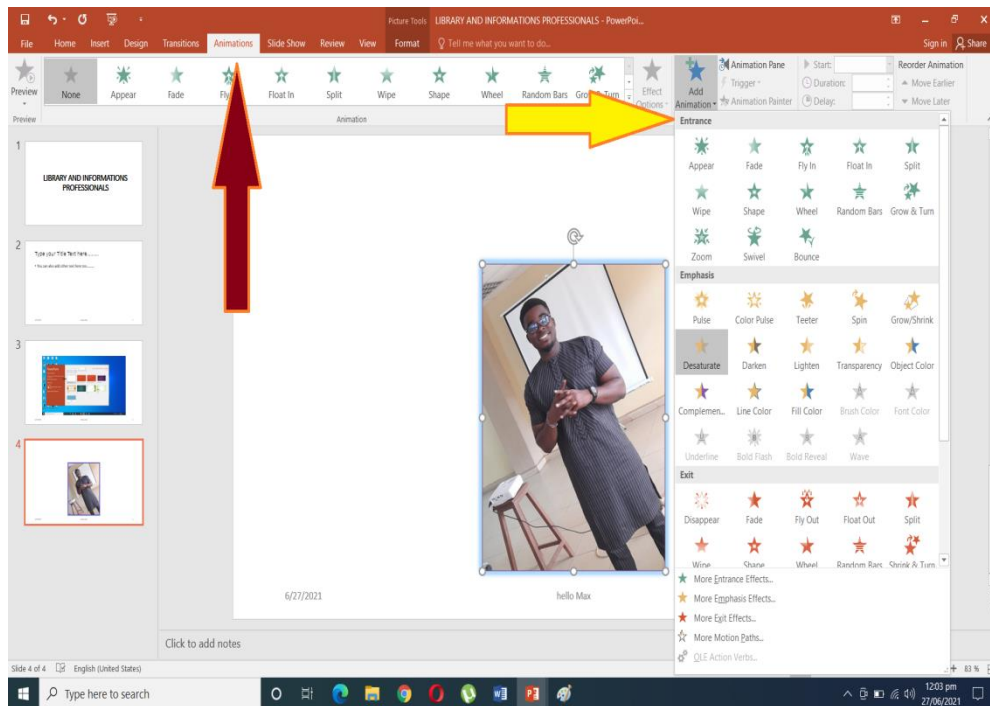
Figure 3.31: Slide transition animation
Source: Screenshot

2.4.7 Adding Object Animation
This is done by picking more than one item which makes an object. Press Ctrl and select the objects you want. Select Format > Group > Group to group the objects . Select Animations and choose an animation. Applicable just as the image above.

2.4.8 Inserting video and sounds

From insert from the top right corner, click Video > Video on My PC. find the video you want to add and click "Insert". See Fig……
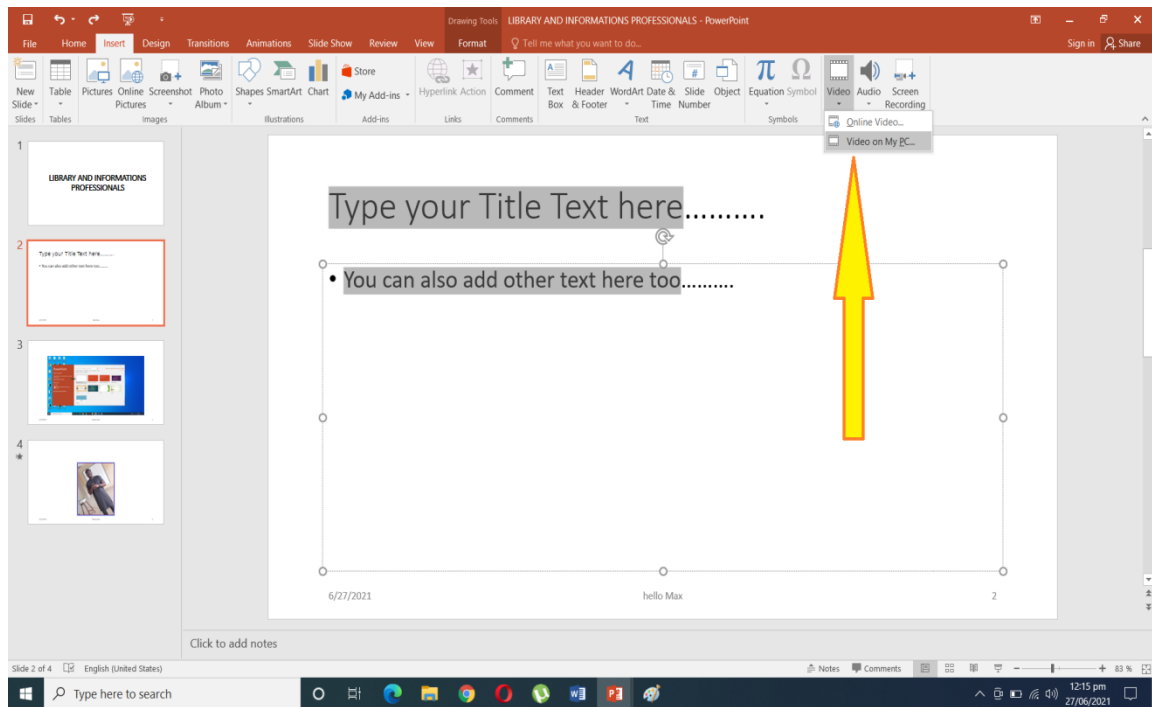
Figure 3.32: inserting video and sound
Source: Screenshot

Next.
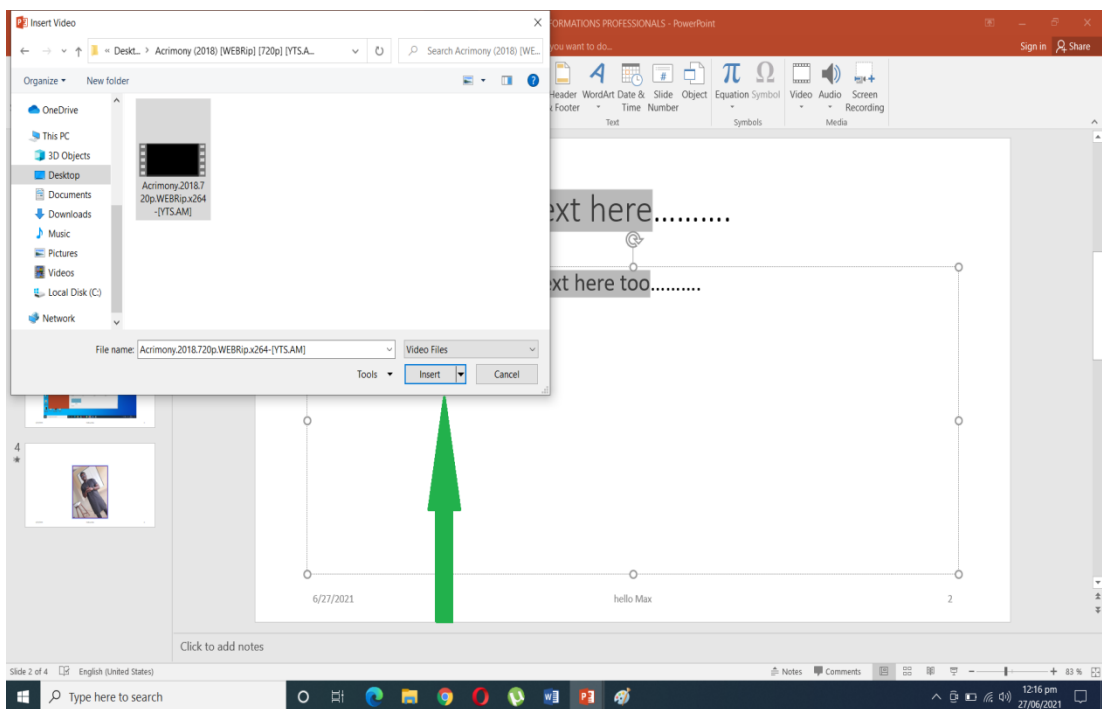
Figure 3.33: inserting video and sound
Source: Screenshot

Output for your video
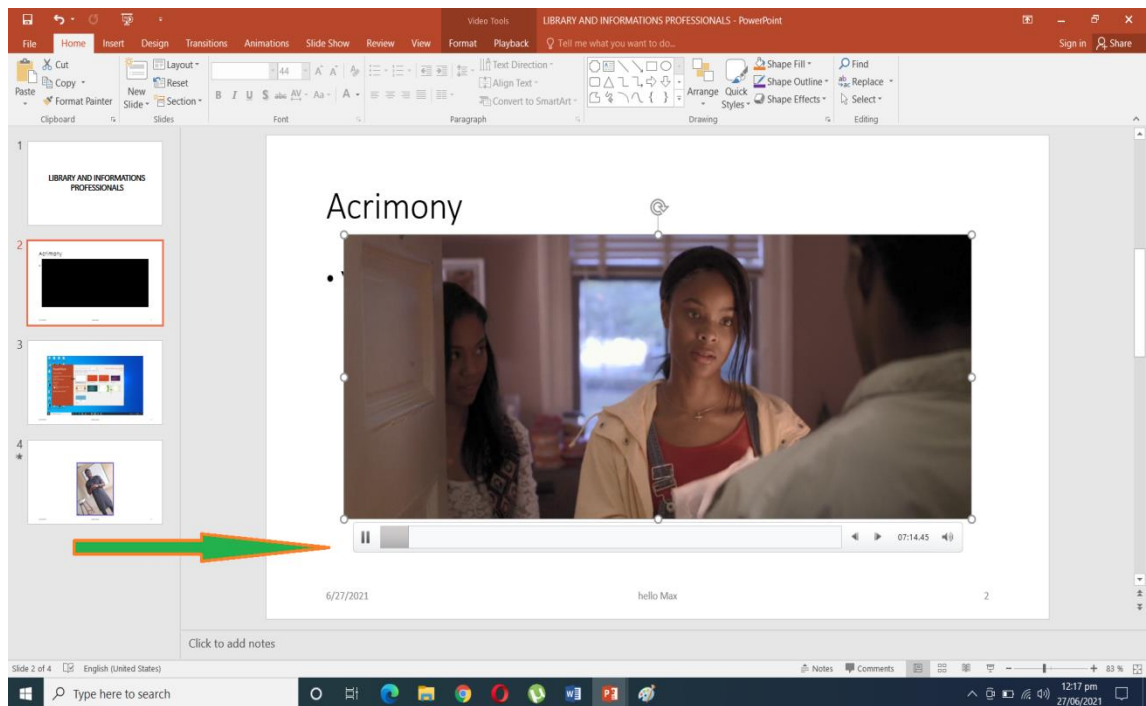
Figure 3.34: Video output
Source: Screenshot

2.4.9 Inset audio

Same process with the video as seen above

2.4.10 Recording a sound

As seen below
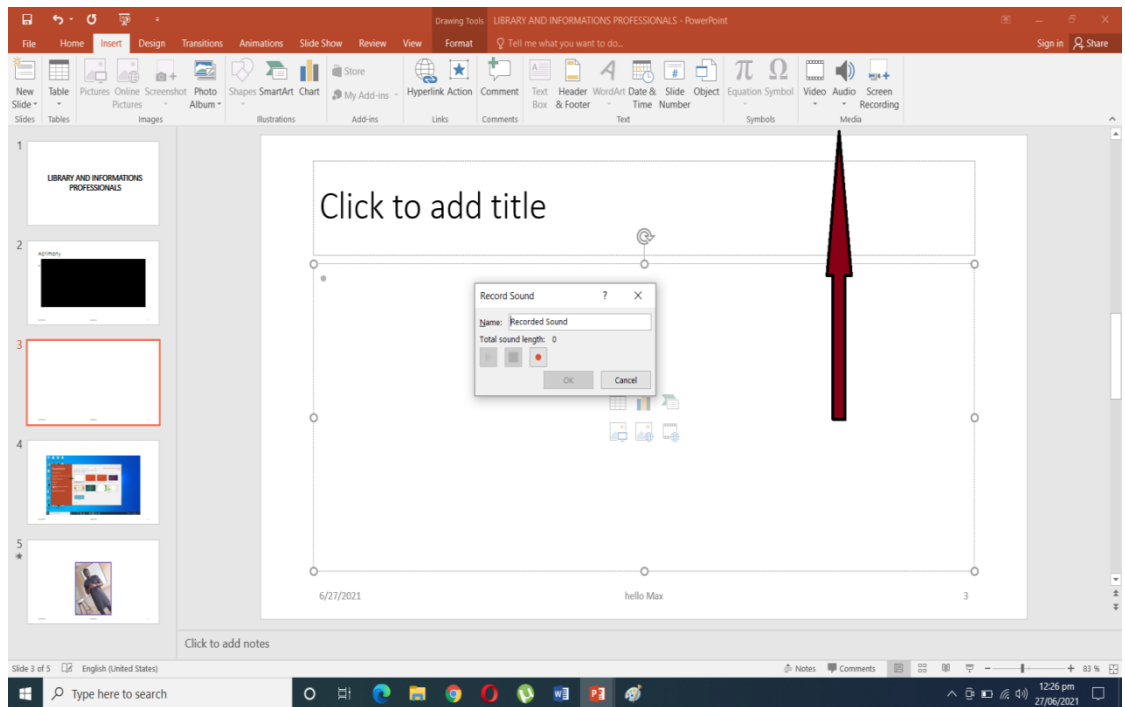
Figure 3.35: Sound recording
Source: Screenshot

2.4.11 Recording your screen

See below
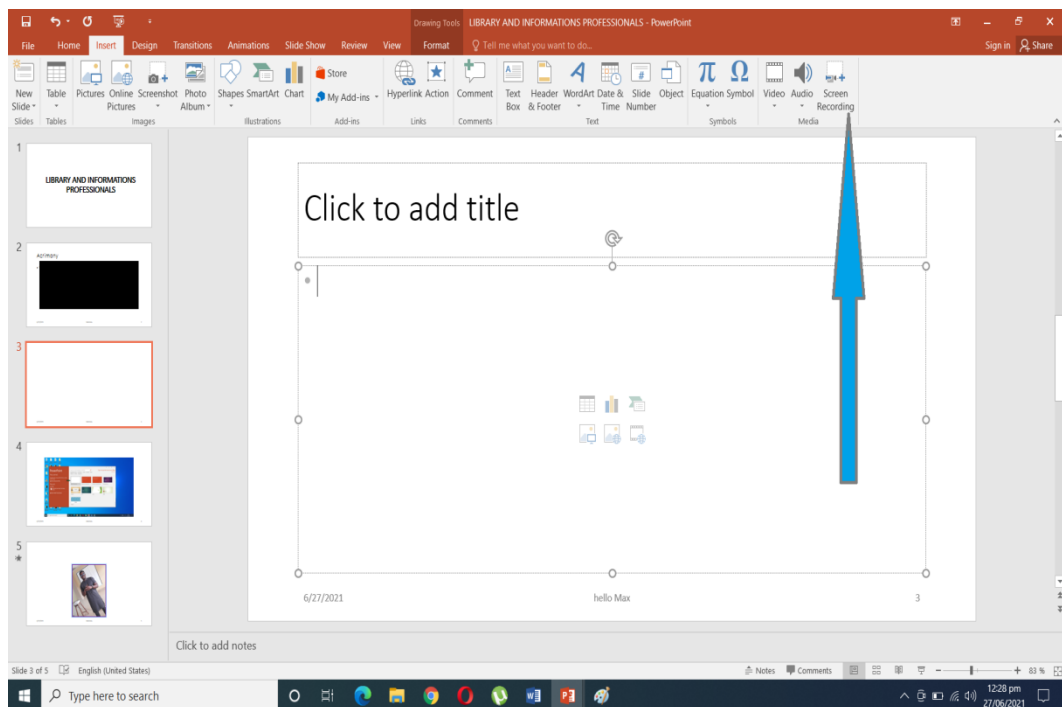
Figure 3.36: Screen recording
Source: Screenshot

2.4.12 Applying themes

Select the Design tab on the Ribbon, then locate the **Themes** group. See below.
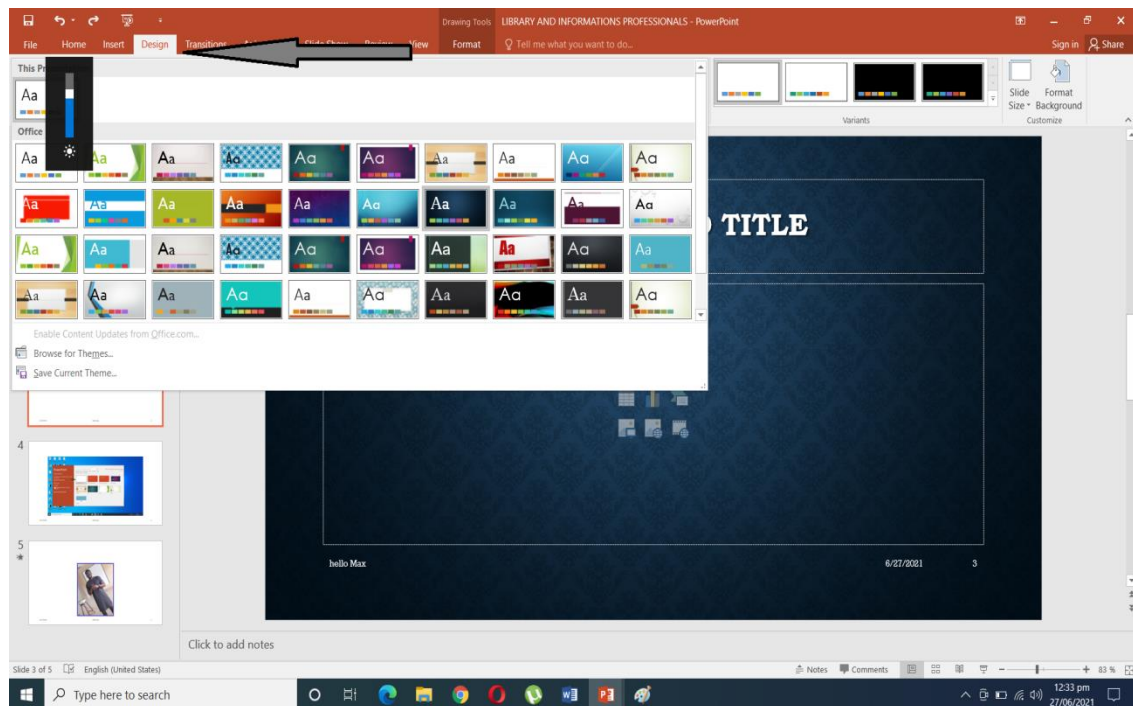
Figure 3.37: Applying themes
Source: Screenshot

Note: All this can be done following the above method

Creating custom themes

Creating custom color schemes

Creating a custom slide background

Setting up your presentation

Setting up your slide show

From the slide show you can choose from any of your choice that befits your presentation, you can also time your show.
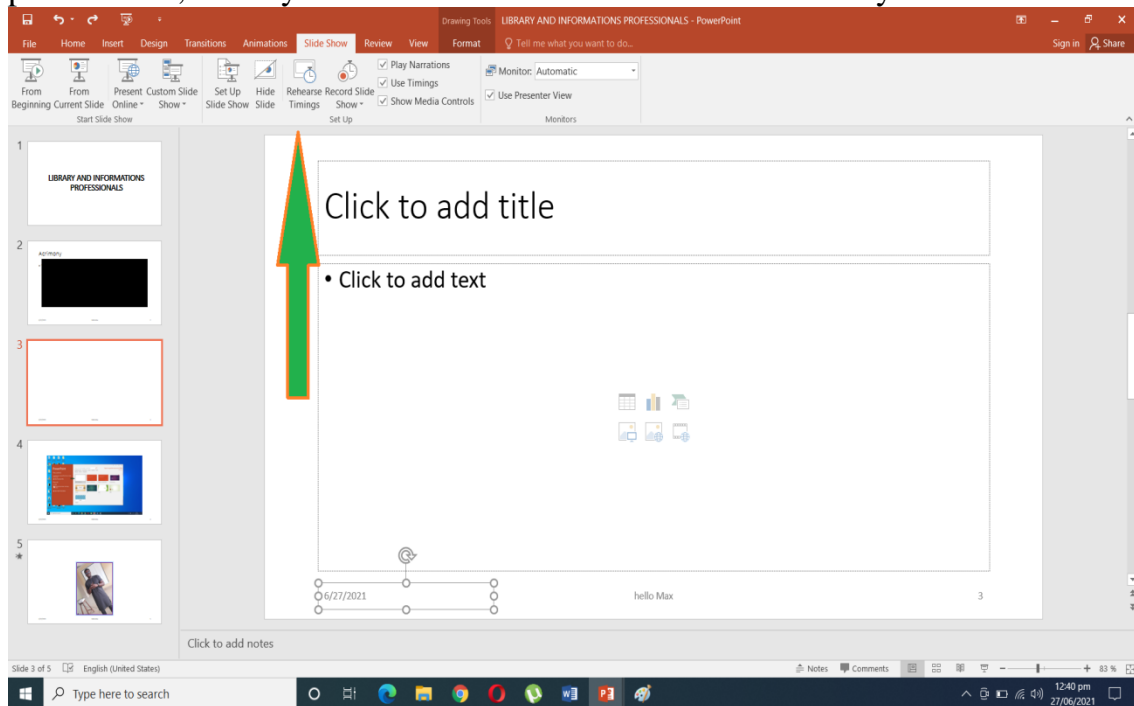
Figure 3.38: Timing slide show
Source: Screenshot

2.5 Presentation Setup And Insertion of Charts, Objects and Tables

From the slide show you can choose from any of your choice that befits your presentation, you can also time your show.
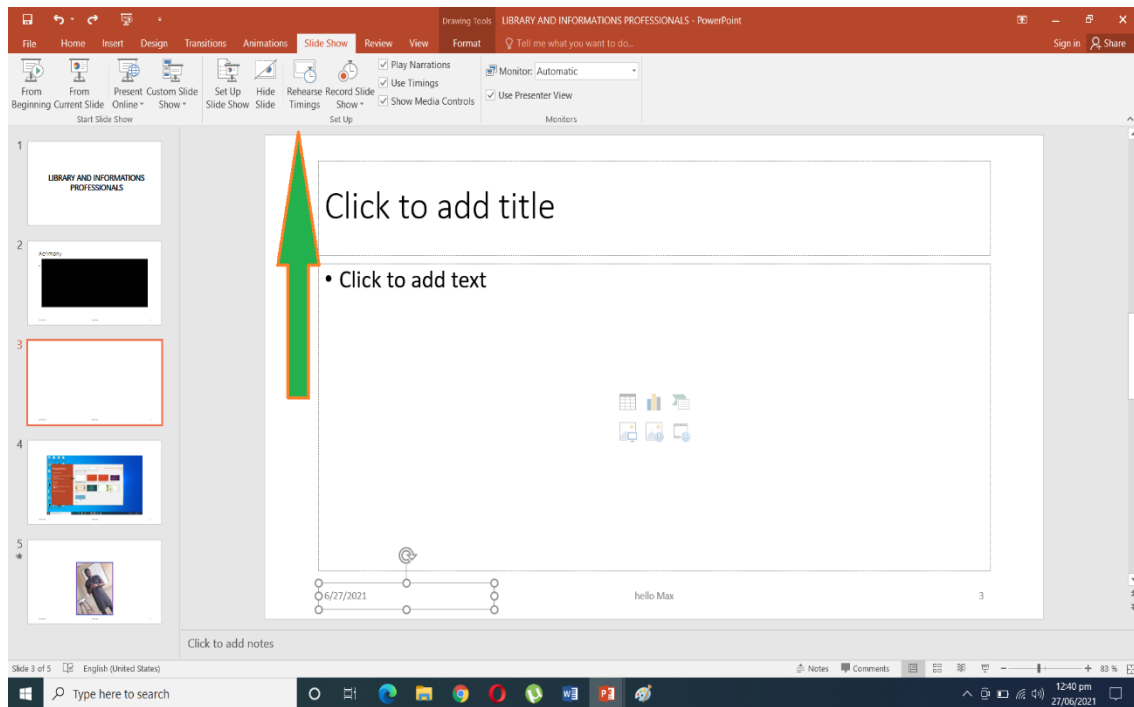
Figure 3.39: Stting up presentation
Source: Screenshot

2.5.1 Inserting charts

Click Insert > Chart then Click the chart type and then double-click the chart you want.
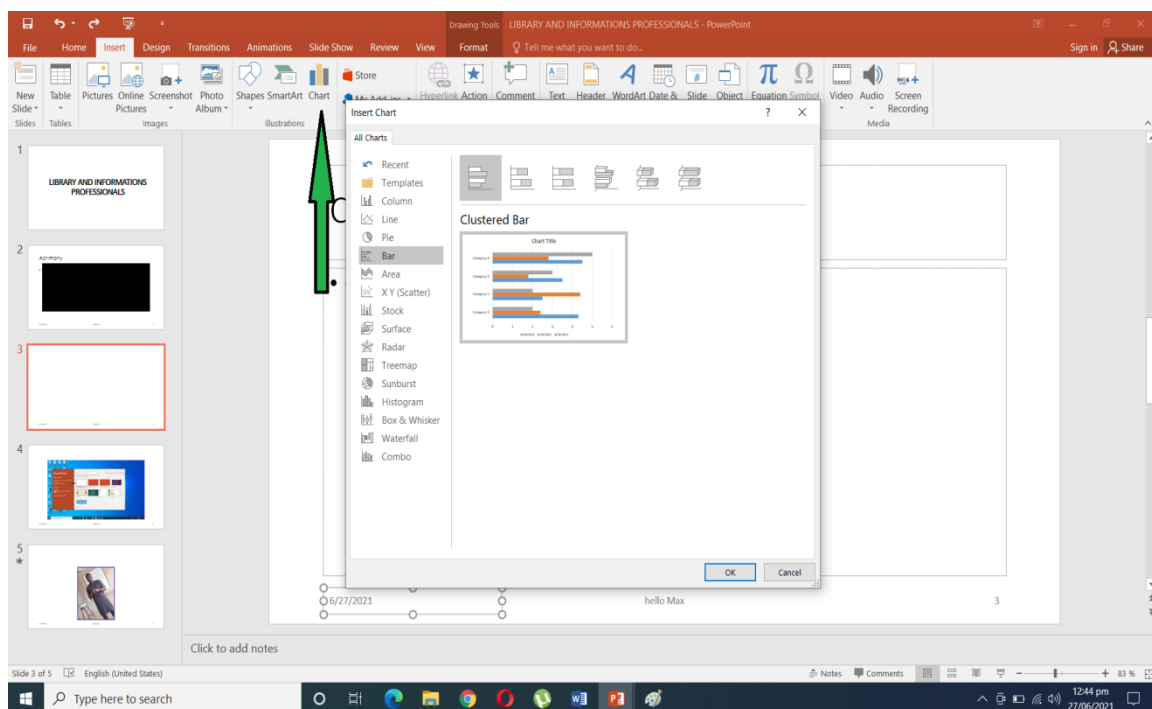
Figure 3.40: Insertin charts
Source: Screenshot

2.5.2 Object

Objects are any elements that you can add in PowerPoint 2019. A text label is an object. An image is an object. Graphs and charts are objects.

2.5.3 Table

You can input this in two ways as you can see below.
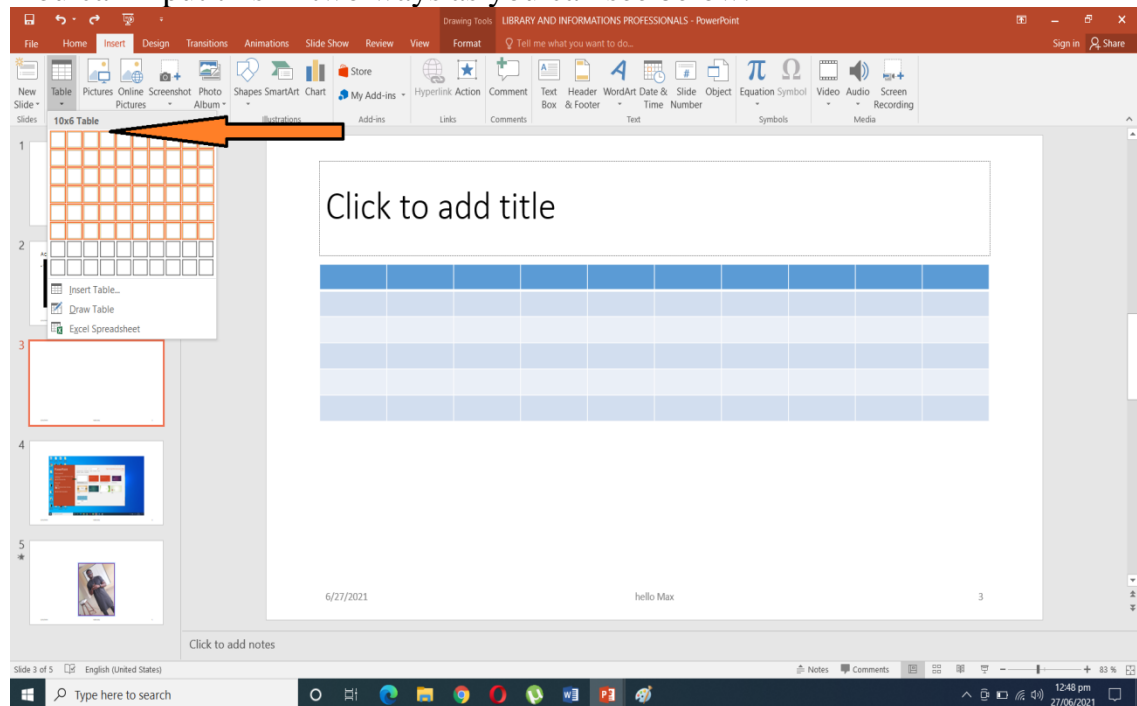
Figure 3.41: Inserting tables
Source: Screenshot

Second method as seen below:
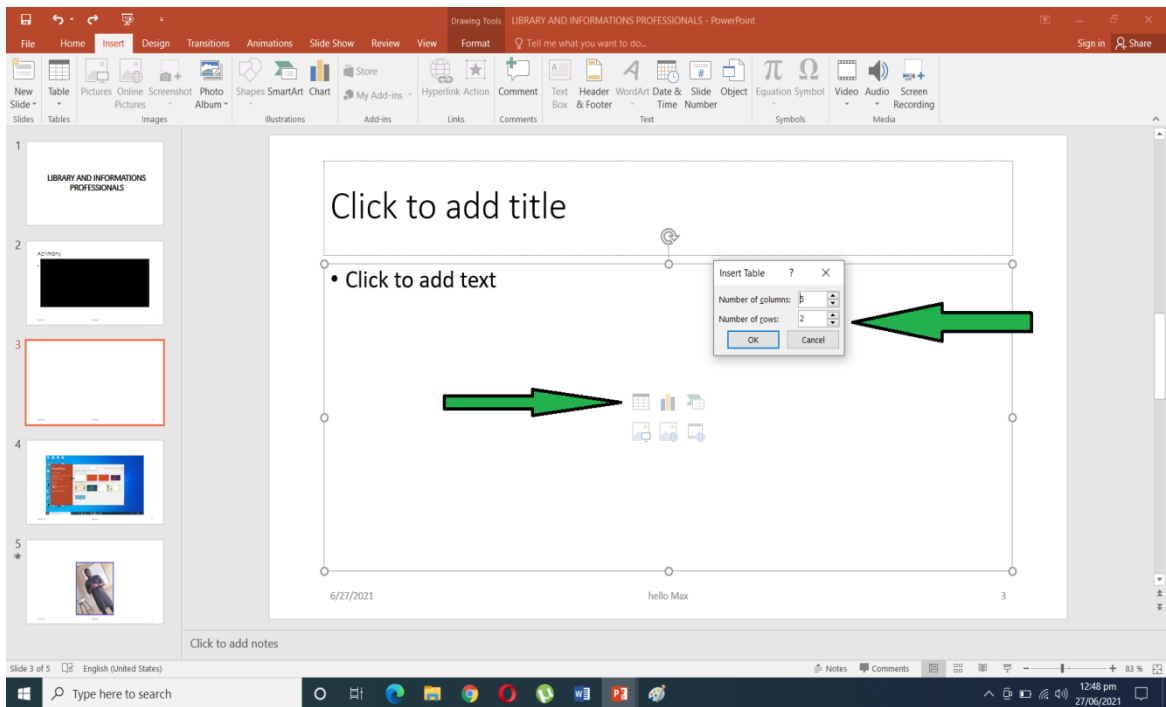
Figure 3.42: Inserting tables
Source: Screenshot

2.6 SUMMARY

You have learned how to format a paragraph, how to insert pictures saved from your PC, how to insert pictures from online, and how to use the picture tools in PowerPoint. At the end of this Unit, you have seen how to print out Powerpoint documents, how to use animation, and how to use themes and also how to set our slides. Skills on how to set up our presentation and insert tables and charts to our presentation are critical to optimal use of tools of PowerPoint application package. In conclusion PowerPoint has the features of editing your text, it also gives the flexibility of inputting pictures from your PC and also gives you the option to use pictures online. Understanding how to print your slides is pivotal in this course. Also you see how you can use animation and also set our slides here. You have seen how you can make your presentation and insert objects and tables into your presentation.

SELF-ASSIGNMENT EXERCISES (SAEs)

1. How can you insert a picture from your PC into a slide?
2. How do you insert an online picture into your slide?
3. How do you print a slide?
4. How do you animate an object?

5. How do you use themes?
6. How do you set up a presentation?
7. How do you insert a table into a presentation?
8. How do you insert charts into a presentation?

2.7 Glossary

Animations: They are visual effects for the objects in your PowerPoint presentation

An entrance animation: Is an animation that brings something onto the slide.

Objects: Objects are any elements that you can add in PowerPoint. A text label is an object. An image is an object. Graphs and charts are objects.

Theme: "A theme is a predefined set of colors, fonts, and visual effects that you apply to your slides for a unified, professional look"

Transition: A slide transition is the visual effect that occurs when you move from one slide to the next during a presentation.

2.8 REFERENCES/FURTHER READING

Bucki, Lisa A. et. al.(2013).*Microsoft office 2013 Bible: the comprehensive tutorial resource*. Indianapolis: Wiley.

Cox, J.(2010).*Microsoft PowerPoint 2010 step by step*. Washington: Microsoft press.

Cox, J., Lambert, J. & frye, C. (2011). *Microsoft office: professional 2010 step by step*. Washington: Microsoft press.

Foulkes, L.(2020). *Learn Microsoft office 2019: a comprehensive guide to getting started with Word, PowerPoint, Excel Access, and Outlook*. Birmingham: Packt publishing.

Lambert, J. (2015).Microsoft PowerPoint 2016 step by step. Washington: Microsoft press.

Lowe, D.(2019). *Microsoft PowerPoint 2019 for dummies.* New Jersey: Wiley.

Wempen, F. (2013).*Microsoft PowerPoint 2013 Bible*. Indianapolis: Wiley.

2.9   Possible Answers to Self-Assignment Exercises (SAEs)

SAE 1: How can you insert a picture from your PC into a slide?

Answers to SAE1:

To do this, click where you want to insert the picture on the slide after which you click, insert then will see a dropdown to Pictures. In the dialog box that opens, browse to the picture that you want to insert, click that picture, and then click Insert.

SAE 2: How do you insert an online picture into your slide?

To insert online picture into your slide, click where you want to insert the online picture on the slide after which you click, insert then, browse to the picture online that you want to insert, click that picture, and then click Insert

SAE 3: How do you print a slide?

Answers to SAE 3:

To print, Click on the file at the top left and it will take you to where you will see print. Click print to preview and print.

SAE 4: How do you animate an object?

Answers to SAE 4:

To animate an object, Select the object you want to animate. Choose the Animations tab. Click the Custom Animation button. The Custom Animation pane appears. Click the Add Effect button. A menu appears. Choose the type of effect you want. A submenu appears. Click the effect you want.

SAE 5: How do you use themes?

Answers to SAE 5:

To use a theme, Select the Design tab on the Ribbon, then locate the **Themes** group and apply as desired.

SAE 6: How do you set up a presentation?

Answers to SAE 6:

To set up your presentation, Click on the slide show. Several presentation option will appear. You can choose from any of the choices that befits your presentation, you can also time your show

SAE 7: How do you insert a table into a presentation?

Answers to SAE 7

To insert a table click on Insert and choose table on the dropdown and then click on the insert the draw table option to select the numbers of colunms and rows for your table.

SAE 8: How do you insert charts into a presentation?

Answers to SAE 8:

To insert charts, Click Insert > Chart then Click the chart type and then double-click the chart you want.

MODULE 4: EXCEL SPREADSHEETS

Welcome to the learning adventure through Microsoft Soft Excel Spreadsheet. The following are some of the learning outcomes from this adventure. Although this package is technical, working through it can be a fun

➢ You should know the common Excel functions used in the office.
➢ You should learn to maintain a large set of Excel data.
➢ Learn to use formulas like IF, VLOOKUP, INDEX, MATCH functions.
➢ Understand excel and how to automate your task through macros and VBA
➢ Learn how to create dynamic reports

Course outline:

Unit 1: Introduction to Excel

1.1 Introduction
1.2 Learning Outcomes
1.3 Understanding what Excel is used for
       1.3.1 Microsoft Excel Startup workbook
1.4 Excel Interface/Features/Ribbon
1.5 Structure of an Excel Workbook
       1.5.1   Saving an Excel Document
1.6 Summary
1.7 Glossary

1.8 References/Further Reading

1.9 Self-Assignment Exercises (SAEs)

Unit 2: Editing text and working with Formulas in Excel

1.1 Introduction
1.2 Learning Outcomes
1.3 Creating Spreadsheet titles
1,4   Working with some Basic Excel Functions
       1.4.1   Work with SUM() function
       1.4.2   Work with MIN()function
1.5 Work with AVARAGE() function and Work with COUNT() function
       1.5.1 Work with AVARAGE() function
       1.5.2   Work with COUNT() function
1.6 Summary
1.7 Glossary

1.8 References/Further Reading
1.9 Self-Assignment Exercises (SAEs)

Unit 3: Modifying, inserting images, shapes and working with SmartArt and also printing in Excel

1.1 Introduction
1.2 Learning Outcomes
1.3 Excel basic skills
      1.3.1   Move and copy data in an Excel worksheet
      1.3.2   Inserting and deleting Rows and column
      1.3.3   Changing the width and length of cells
      13.4   Hiding and un-hiding excel rows and column
      1.3.5   Naming a worksheet
1.4 Formatting Data in an Excel worksheet
      1.4.1   Changing the background color of a cell
      1.4.2   Format data as currency values
      1.4.3   How to use conditional formatting
1.5 1nsert images and shapes into an Excel worksheet and Printing
      1.5.1   Inserting Images
      1.5.2   Inserting Excel Shapes
      1.5.3 Working with Excel SmartArt
      1.5.4 Printing an Excel Worksheet
      1.5.5 Viewing documents in print preview in Excel
      1.5.6 Changing the merging, scaling and orientation
      1.5.6 Page layout view
      1.5.7 Header and footer
      1.5.8 Printing a specific range of cells
1.6 Summary
1.7 Glossary
1.8 References/Further Reading
1.9 Self-Assignment Exercises (SAEs)

UNIT 1: INTRODUCTION TO EXCEL

CONTENTS

1.1   INTRODUCTION

Excel is used for calculation; it is easy to use. With excel you can perform a lot of mathematical functions. In this unit, we will be introducing what and how the excel interface looks like.

1.2 LEARNING OUTCOMES

The objectives of this course are to introduce the student to the excel interface and the structure of the excel workbook. Also, this course will teach the student how to save excel documents.

1.3 Introduction to Excel: Understanding what Excel is used for

Excel, which is part of Microsoft Office Suite has become the global choice and most widely accepted spreadsheet software.. Despite the availability of another spreadsheet, the popularity of Excel appears to be unmatched and has been the flagship in spreadsheet applications cross the years and globally. Preference for Excel is predicated on its versatility. The strength of Excel lies in the performing numerical calculations. However, Excel is also useful for non-numeric applications. The uses of Excel are many and varied. Here are just a few uses for Excel:

1. Create budgets,
2. Tabulate expenses,
3. Analyze survey results, and
4. Perform just about any type of financial analysis you can think of.

5. Create a variety of highly customizable charts.
6. Compiling mailing lists by using the row-and-column layout to store lists efficiently.
7. Accessing other data Import data from a variety of sources.
8. Creating graphical dashboards Summarize a large amount of business information in a concise format.
9. Creating graphics and diagrams
10. Use shapes and SmartArt to create professional-looking diagrams.
11. Automating complex tasks: Perform a tedious task with a single mouse click with Excel's macro capabilities.

1.3.1 Microsoft Excel Startup workbook

Click the start icon on the left down of your pc. and if you cannot find the start icon then click all programs to see all programs as seen below.
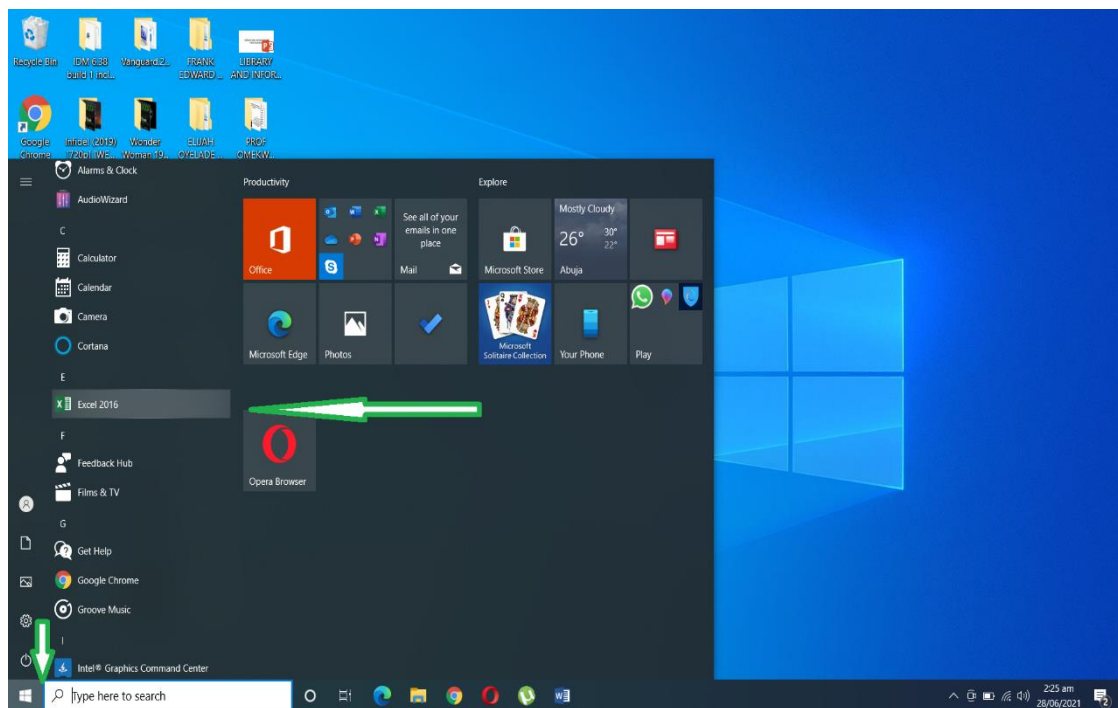
Figure 4.1: Excel Startup workbook
Source: Screenshot

The Excel Starter startup screen appears, and a blank spreadsheet is displayed. In Excel Starter, a spreadsheet is called a worksheet, and worksheets are stored in a file called a workbook. Workbooks can have one or more worksheets in them.

Click on the blank sheet as seen below.
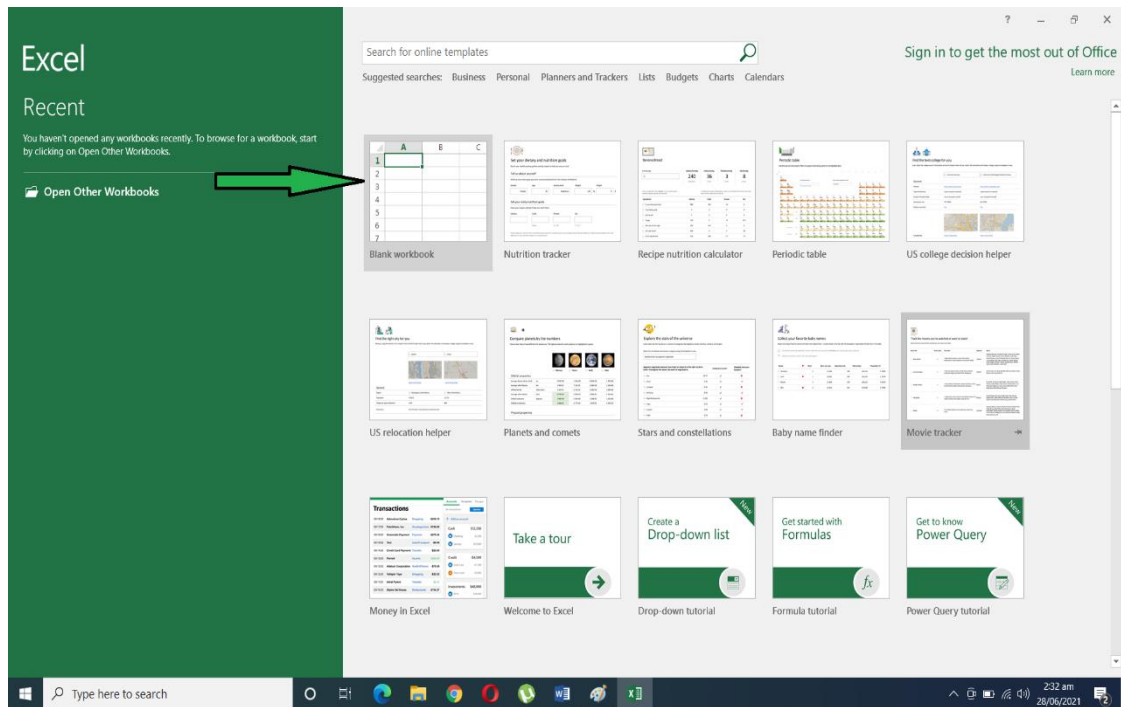
Figure 4.2: Excel worksheet
Source: Screenshot

1.4 Excel Interface/Ribbon

Excel interface revolves around the ribbon. The excel ribbon comprises of tabs, which contain groups of controls. The commands available in the Ribbon vary, depending upon which tab is selected. The Ribbon is arranged into groups of related commands. Here's a quick overview of Excel's tabs:

Home You'll probably spend most of your time with the Home tab selected. This tab contains the basic Clipboard commands, formatting commands, style commands, commands to insert and delete rows or columns, plus an assortment of worksheet editing commands.

Insert Select this tab when you need to insert something into a worksheet—a table, a diagram, a chart, a symbol, and so on.

Page Layout This tab contains commands that affect the overall appearance of your worksheet, including some settings that deal with printing.

Formulas Use this tab to insert a formula, name a cell or a range, access the formula auditing tools, or control the way Excel performs calculations.

Data Excel's data-related commands are on this tab, including data validation commands.

Review This tab contains tools to check to spell, translate words, add comments, or protect sheets.

 View The View tab contains commands that control various aspects of how a sheet is viewed. Some commands on this tab are also available in the status bar.

 Developer This tab isn't visible by default. It contains commands that are useful for programmers. To display the Developer tab, choose File ⇨ Options and then select Customize Ribbon. In the Customize the Ribbon section on the right, make sure that Main Tabs is selected in the drop-down control and place a checkmark next to Developer.

Help This tab provides ways to get help, make suggestions, and access other aspects of Microsoft's community.

Add-Ins This tab is visible only if you loaded an older workbook or add-in that customizes the menu or toolbars. Because menus and toolbars are no longer available in Excel 2019, these user interface customizations appear on the Add-Ins tab. The preceding list contains the standard Ribbon tabs. Excel may display additional Ribbon tabs based on what's selected or resulting from add-ins that are installed. (Alexander, M. & Kusleika, D) (2019).

See below.
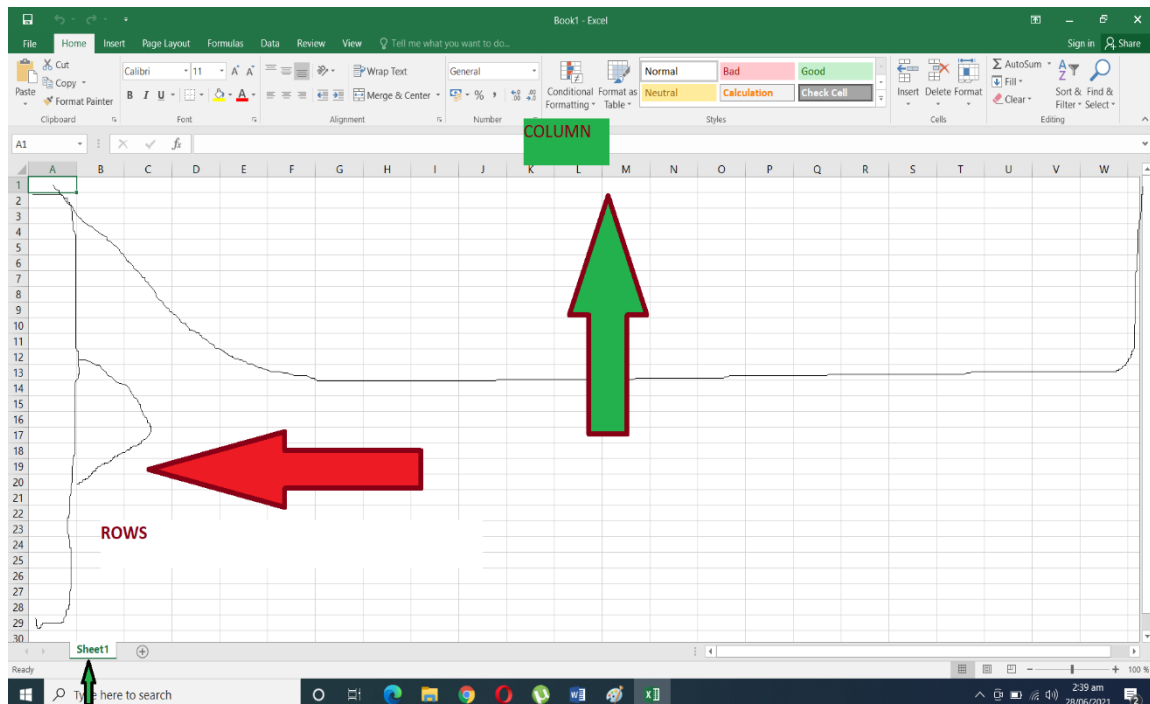
Figure 4.3: Excel interface ribbon
Source: Screenshot

1.5 Structure of an Excel Workbook

A worksheet is inside a workbook and it is used in Excel documents which is a collection of cells organized in rows and columns as you see above. The worksheet is the working surface you interact with to enter data. You perform the work you do in Excel in a workbook. Please note that it is practicable to have as many workbooks open as may be needed, each appearing in its window.

It is important to emphasise that in Excel each workbook contains one or more worksheets, and each worksheet consists of individual cells. Each cell can contain a number, a formula, or text. A worksheet also has an invisible drawing layer, which holds charts, images, and diagrams. Objects on the drawing layer sit over the top of the cells, but they are not in the cells like a number or formula. Each worksheet in a workbook is accessible by clicking the tab at the bottom of the workbook window (Alexander, M. & Kusleika, D) (2019). Furthermore, a workbook can store chart sheets: a chart sheet displays a single chart and is accessible by clicking a tab. Newcomers to Excel are often intimidated by all of the different elements that appear within Excel's window. After you become familiar with the various parts, it all starts to make sense and you'll feel right at home. It is advisable to open the Excel programme and familiarise yourself with the environment of the application package. (Alexander, M. & Kusleika, D) (2019).

1.5.1 Saving an Excel Document.

Saving your workbook

Until now, everything that you've done has occurred in your computer's memory. If the power should fail, all may be lost—unless Excel's AutoRecover feature happened to kick in. It's time to save your work to a file on your hard drive:

1. Click the Save button on the Quick Access toolbar. (This button looks like an old-fashioned floppy disk, popular in the previous century.) Because the workbook hasn't been saved yet and still has its default name, Excel responds with a Backstage screen that lets you choose the location for the workbook file. The Backstage screen lets you save the file to an online location or your local computer.

2. Click Browse. Excel displays the Save As dialog box.

3. In the File Name field, enter a name (such as Monthly Sales Projection). If you like, you can specify a different location.

4. Click Save or press Enter. Excel saves the workbook as a file. The workbook remains open so that you can work with it some more. (Foulkes, L.(2020)

Under the Save dialogue box, you can Save or Save As

Click the file and then the Save As, under the Save As, select the place you want to save your document to. In the file name box, write the name you want to save

the document with and then save. When you Save, Excel assumes that the destination where the work will be saved is already predetermined. See below.
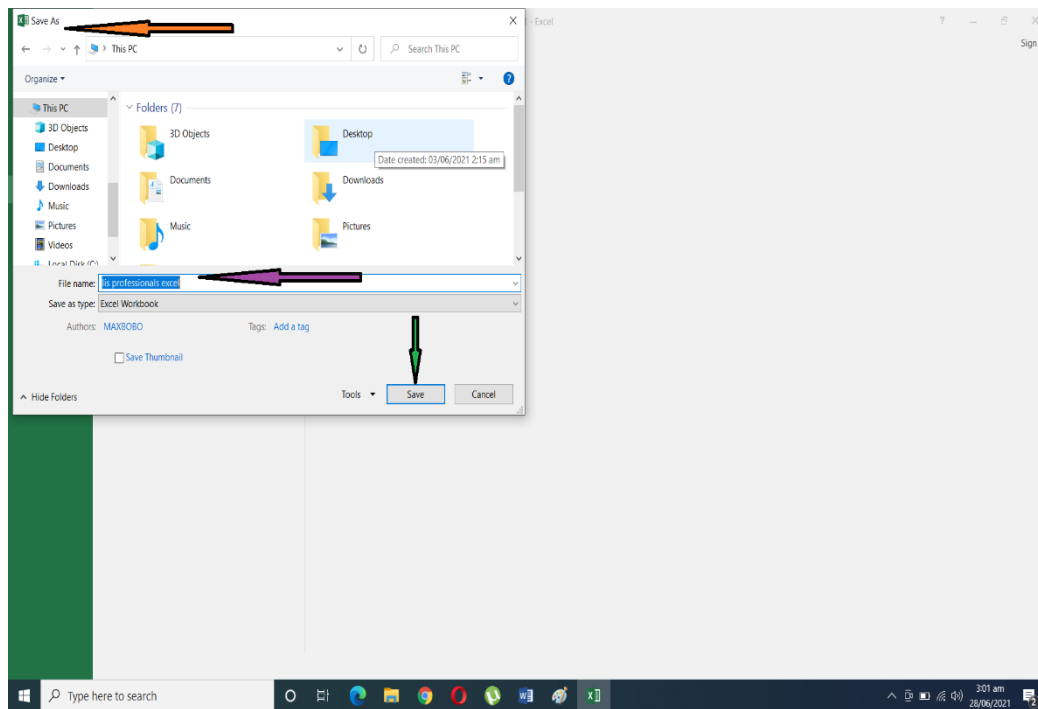
Figure 4.4: Document saving window, Source: Screenshot

1.6   SUMMARY

At the end of this unit, we have been able to learn about Excel as the world's number one spreadsheet application package because of its versatility and use for various functions. We have also studied the workbook of Excel, the interface, the structure, and lastly how to save an Excel document. Preference for Excel is predicated on its versatility. The strength of Excel lies in the performing numerical calculations create budgets, tabulating expenses, analyze survey results, performing just about any type of financial analysis and creating a variety of highly customisable charts

SELF-ASSESSMENT EXERCISES (SAEs)

Mention various functions you can use Excel to perform

1.7 Glossary

Active Cell: Is the selected cell where data is entered when typing commences

Cell: A box is formed when/where the row and column intersecton a worksheet as soon as information is entered.

Chart: Any object that presents data in a visualor graphic manner

Column: Vertical arrangement of cells

Spreadsheet: A file consisting of cells in rows and columns which facilitates the arrangement, calculation and sorting of data

Row:Horinzontal arrangement of cells

Workbook: This an excel file with at least one workshhet

Worksheet: One spreadsheet in a workbook.

1.8 REFERENCES/FURTHER READING

Alexander, M. & Kusleika, D. (2019). *Microsoft Excel 2019 Bible: the comprehensive tutorial resource.* Indianapolis: Wiley.

Cox, J., Lambert, J. & frye, C. (2011). *Microsoft office: professional 2010 step by step*. Washington: Microsoft press.

Daniel, J. (2018). *Excel: 5 Books in 1- Bible of 5 Manuscripts in 1-Beginner's Guide+ Tips and Tricks+ Simple and Effective Strategies+ Best Practices to Learn Excel Programming Efficiently+ Advanced Strategies. K.M.* Publishing.

Foulkes, L.(2020). *Learn Microsoft office 2019: a comprehensive guide to getting started with Word, PowerPoint, Excel Access, and Outlook.* Birmingham: Packt publishing.

1.9 Possible Answers to the Self-Assessment Exercises

SAE 1: Mention various functions you can use Excel to perform

Answer to SAE

The uses of Excel are many and varied. Here are just a few uses for Excel:

1. Create budgets,
2. tabulate expenses,
3. analyze survey results, and
4. perform just about any type of financial analysis you can think of.
5. Create a variety of highly customizable charts.
6. Compiling mailing lists by using the row-and-column layout to store lists efficiently.
7. Accessing other data Import data from a variety of sources.
8. Creating graphical dashboards Summarize a large amount of business information in a concise format.
9. Creating graphics and diagrams
10. Use shapes and SmartArt to create professional-looking diagrams.
11. Automating complex tasks: Perform a tedious task with a single mouse click with Excel's macro capabilities.

UNIT 2: EDITING TEXT AND WORKING WITH FORMULAS IN EXCEL

2.1   INTRODUCTION

The students will be introduced to how Excel works with formulas, and performs many mathematical functions, including addition, division, and do many other arithmetic solutions.

2.2   LEARNING OUTCOMES

At the end of this course, students should be able to work with various functions in excel such as the SUM(), AVARAGE (), and COUNT() functions.

2.3 Creating Spreadsheet titles

Click the Insert tab, then to the header and footer button on the ribbon, click the spreadsheet title as seen below.
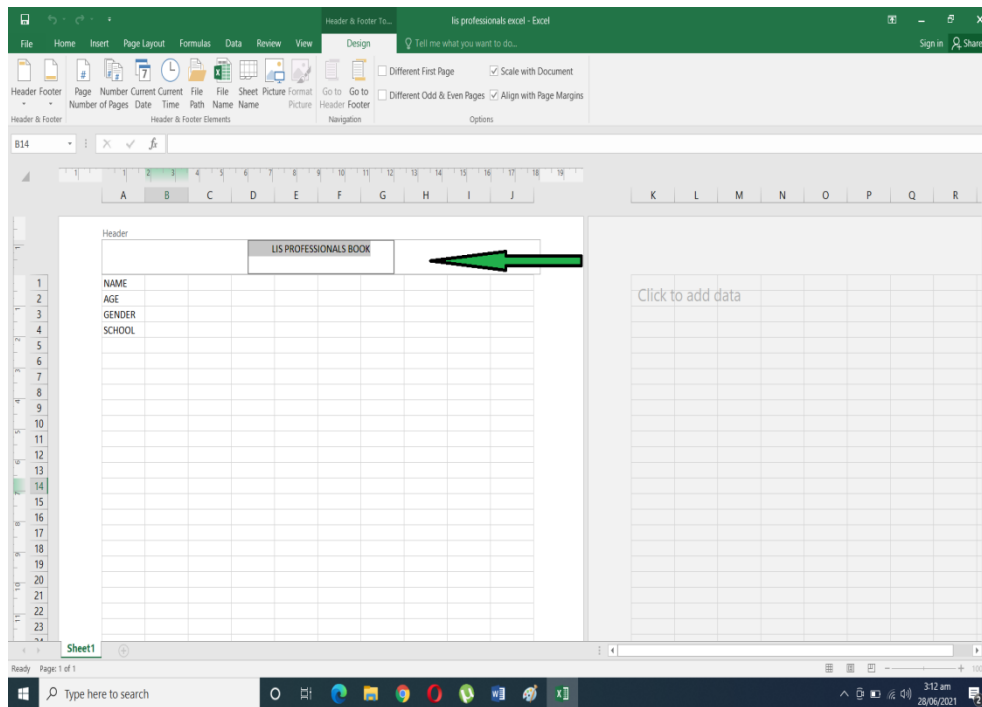
Figure 4.5: Spreadsheet title
Source: Screenshot

2.4 Working with some Basic Excel Functions

2.4.1 Work with SUM() function

The sum function adds values. you can add individual values, cell references or ranges, or a mix of all three. to do this, select a cell next to the numbers you want to sum, click auto sum on the home tab, press enter, and you're done. Remember to alight the whole figures you want to sum before clicking the sum button at the right corner of the ribbon. See Fig……as example.
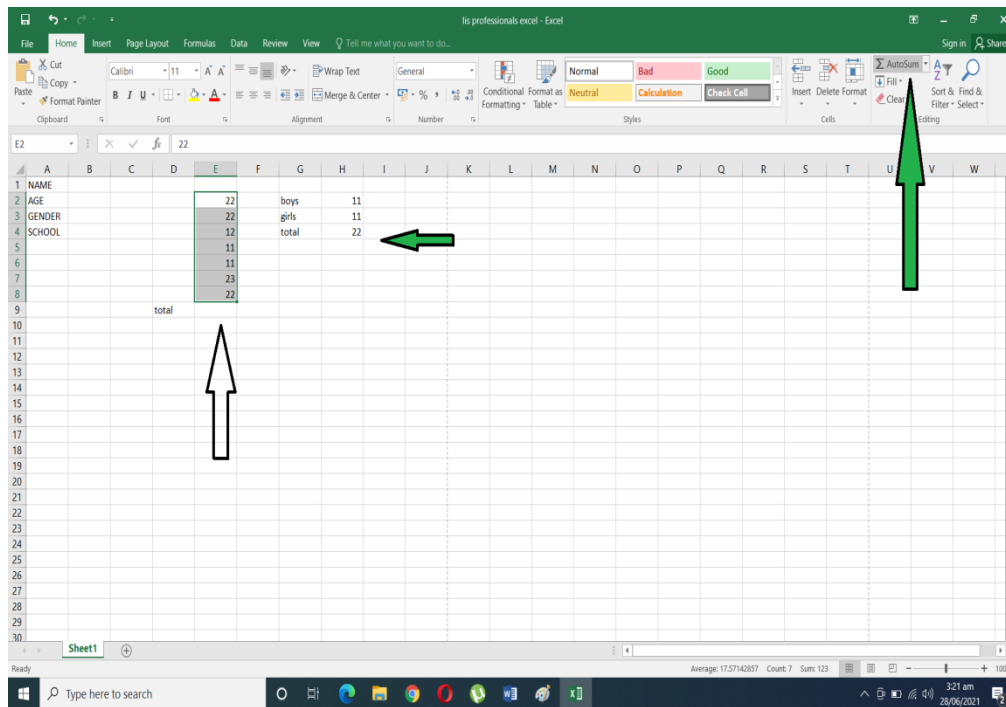
Figure 4.6: Sum function
Source: Screenshot

2.4.2 Work with MIN()& MAX()function

Excel MIN or MAX function returns the smallest or largest numeric value in a range of values respectively.MIN will return the minimum value in a given list of arguments while MAX will return the highest value in a given list of argument from a given set of numeric values, it will return the smallest or highest value respectively. To do this, select a cell below or to the right of the numbers for which you want to find the smallest or highest number. On the Home tab, in the Editing group, click the arrow next to AutoSum., click Min (calculates the

smallest) or Max (calculates the largest), and then press ENTER. See below.
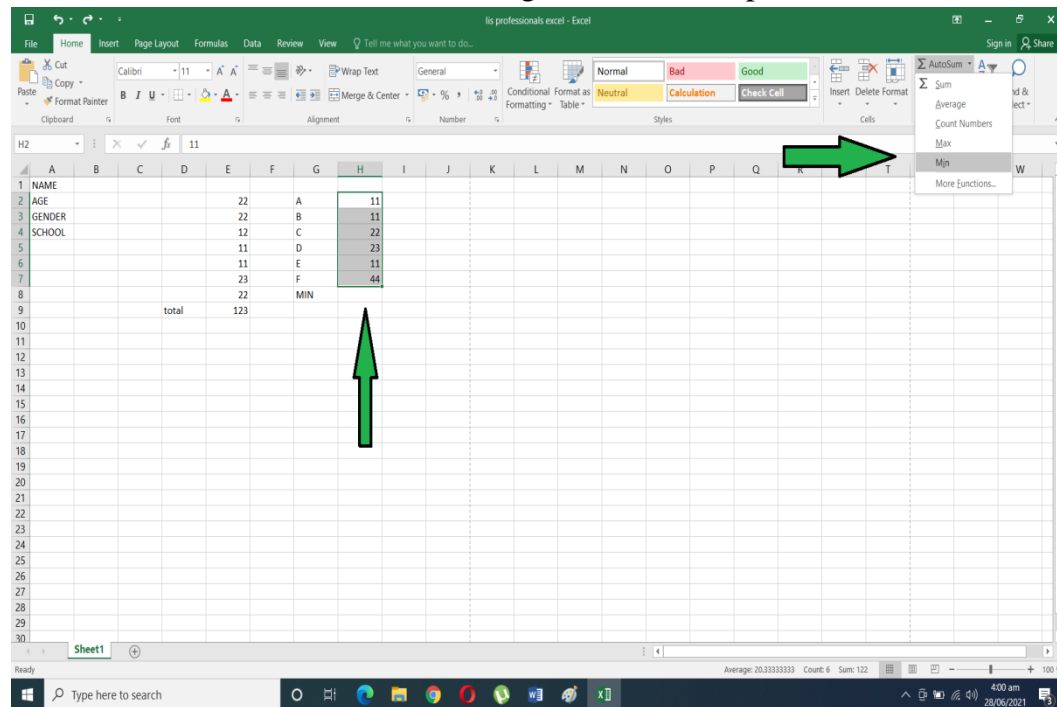
Figure 4.7: MIN()& MAX()function

Source: Screenshot

2.5 Work with AVARAGE() function and Work with COUNT() function

2.5.1 Work with AVARAGE () function

The same process as seen above, after highlighting the fields you want to work on, click the arrow next to AutoSum > Average, and then press Enter

2.5.2 Work with COUNT() function

Count function returns the count of numeric values (includes numbers and dates); To do this, the COUNT function will get the number of entries in a number field that is in a range or array of numbers.

Use the =count function to do this operation and highlight the fields you want to perform this function on and click ENTER, see below for example.
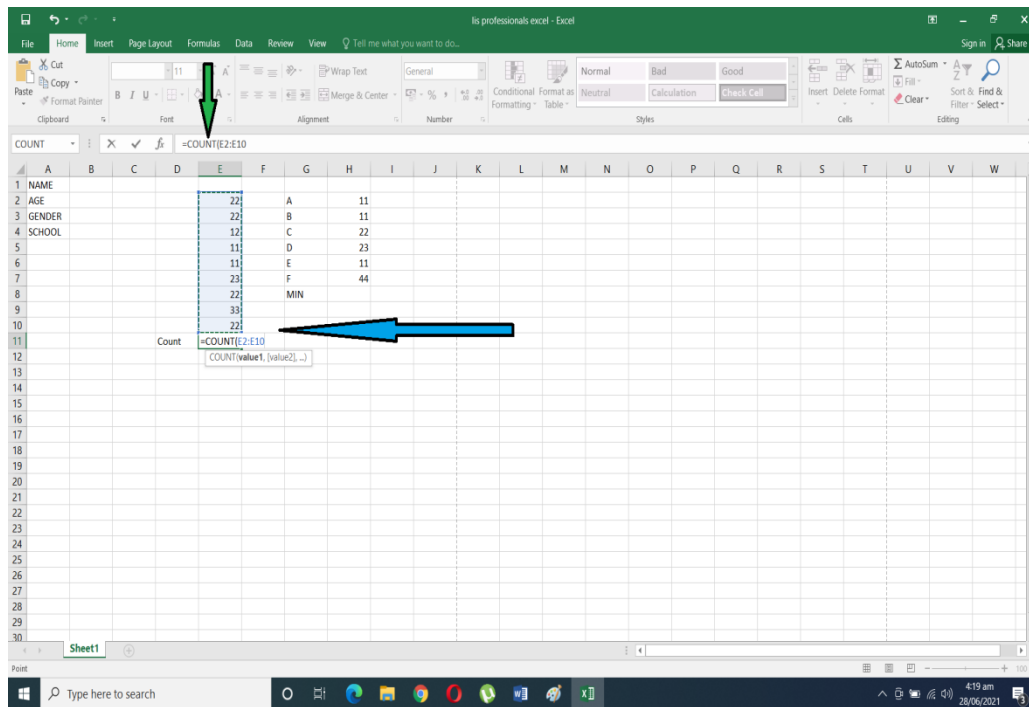
Figure 4.8: COUNT() function
Source: Screenshot

Note that count gives you the number of cells you are working on.

2.6   SUMMARY

We have seen how we can create a spreadsheet title, we also learned about functions, this includes the SUM() function, MIN() function, AVARAGE () function, and COUNT() function. We have also seen how we can work with formulas. Excel as we mentioned earlier is mostly used for calculations.

SELF-ASSESSMENT EXERCISES (SAEs)

Calculate the SUM of 3,22,34,12 using the SUM() function.
Calculate the MIN of 33,22,11,234,1 using the MIN() function.
Calculate the AVARAGE of 33,22,11,3,4,5,3 and 4 using AVARAGE() function

2.7 Glossary

Formula: Calculation which has been entered into a cell

Range: Selected set of multiple cells

Ribbon: Refers to the band on to of the workplace that displays all the tools and items

Sort: Rearrangement of rows or columns according to certain criteria

Value: Any data in a one cell. It can also refer to the result of any formula

Zoom: Reduction or enlargement of screen of entire worksheet**.**

2.8 REFERENCES/FURTHER READING

Foulkes, L. (2020).*Microsoft Excel 2010 is plain and simple*. Birmingham: Packt publishing.

Frye, Curtis D. (2010). *Microsoft Excel: step by step.* Washington: Microsoft press.

George, N. (2020). *Excel 2019 Basics: a quick and easy guide to boosting your productivity with Excel.* GTech Publishing.

Harvey, G. (2010). *Microsoft Excel 2010 all in one for dummies*. New Jersey: Wiley

2.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISES (SAEs)

SAEs: Calculate the SUM of 3,22,34,12 using the SUM() function.

Answer to SAE: Enter the figures 3, 22.34.12 vertically in a column and click or horinzontally in a row and click the summation icon Σ. The answer is 71

UNIT 3: MODIFYING, INSERTING OF IMAGES, SHAPES AND WORKING WITH SMARTART AND ALSO PRINTING IN EXCEL

3.1   INTRODUCTION

With Excel, we can insert images of our various choice. Just open your workbook and follow up.

3.2   LEARNING OUTCOMES

At the end of this unit, students are expected to be able to modify the text, use images in their worksheet, work with SmartArt and also know how to print the worksheet out via a printer.

3.3 Excel basic skills

3.3.1 Move and copy data in an Excel worksheet

Right-click on the worksheet tab and select Move or Copy or use your copy and paste method.

3.3.2 Inserting and deleting Rows and column

Right-click the **row** number, and then select **Insert** or **Delete**. See below

insert
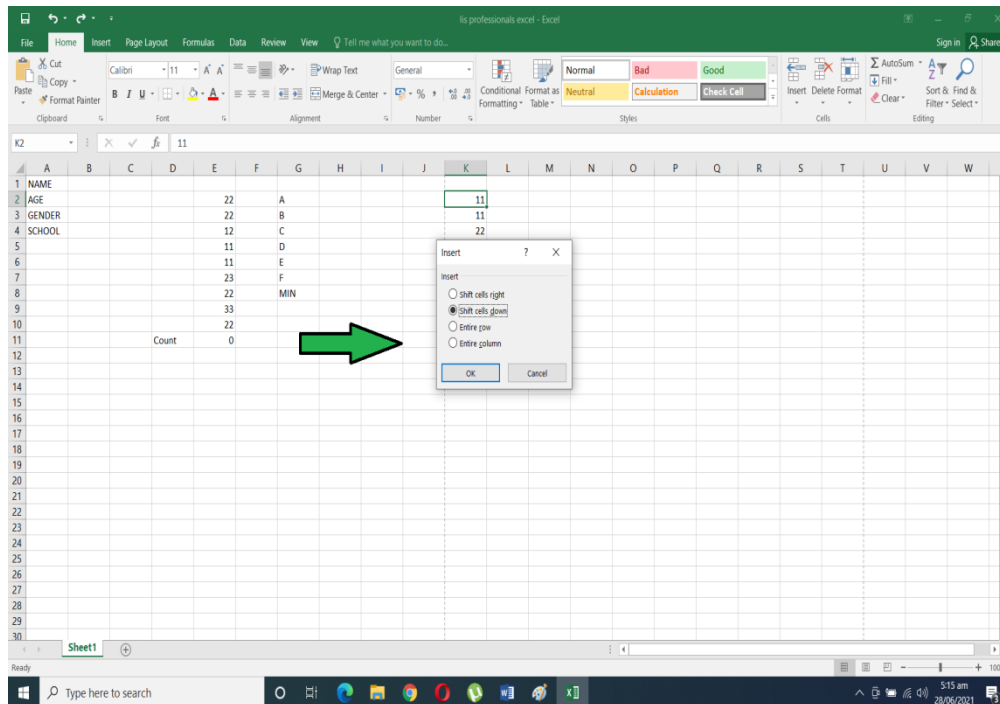
Figure 4.9: Inserting and deleting Rows and column window
Source: Screenshot

To delete follow the arrow below
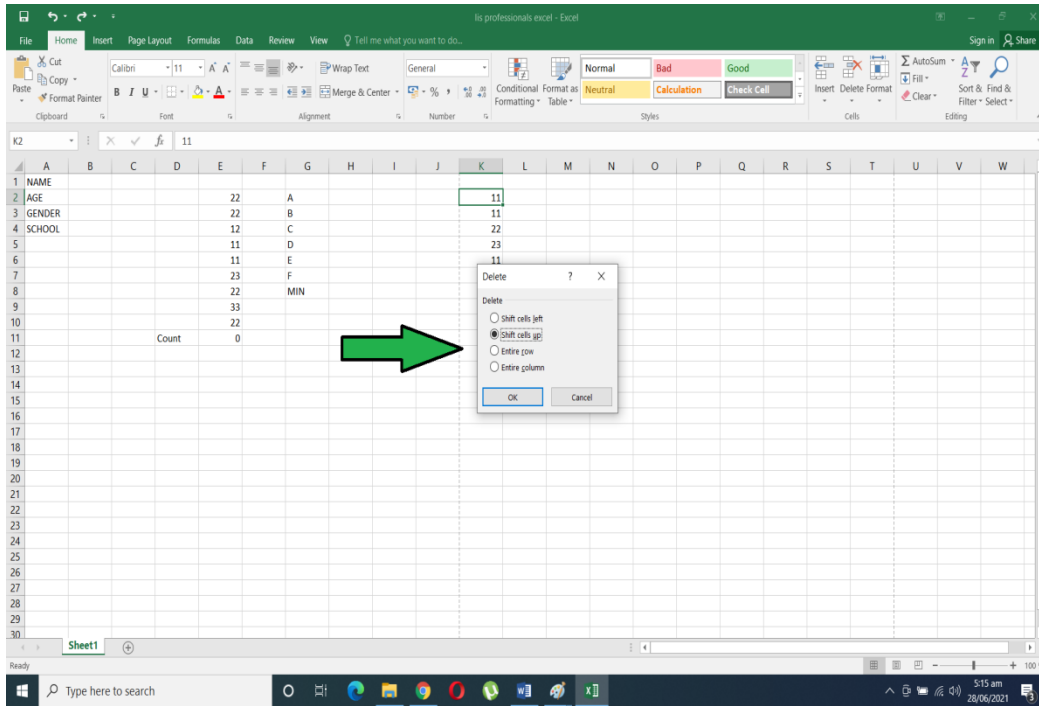
Figure 4.10: Deleting Rows and column window
Source: Screenshot

3.3.3 Changing the width and length of cells

Select the column or columns that you want to change. On the Home tab, in the Cells group, click Format. Under Cell Size, click Column Width. In the Column width box, type the value that you want. See below
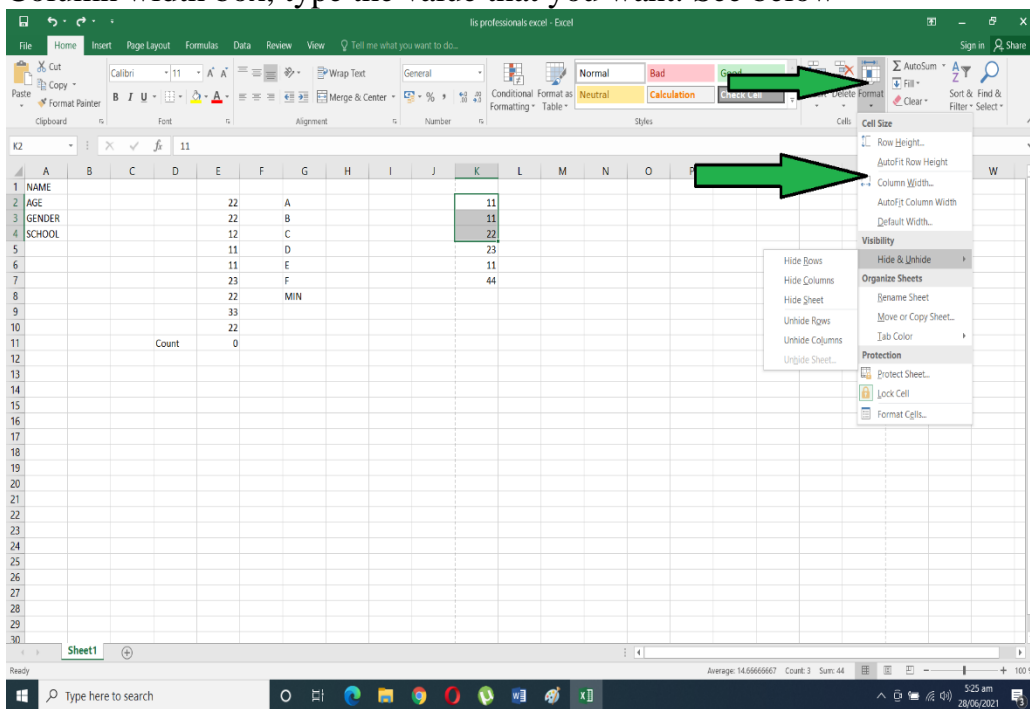
Figure 4.11: Changing width and length of cells
Source: Screenshot

3.3.4 Hiding and un-hiding excel rows and column

It is possible to either hide of not to hide Excel rows and columns. (Please see Figure 4.12 below).
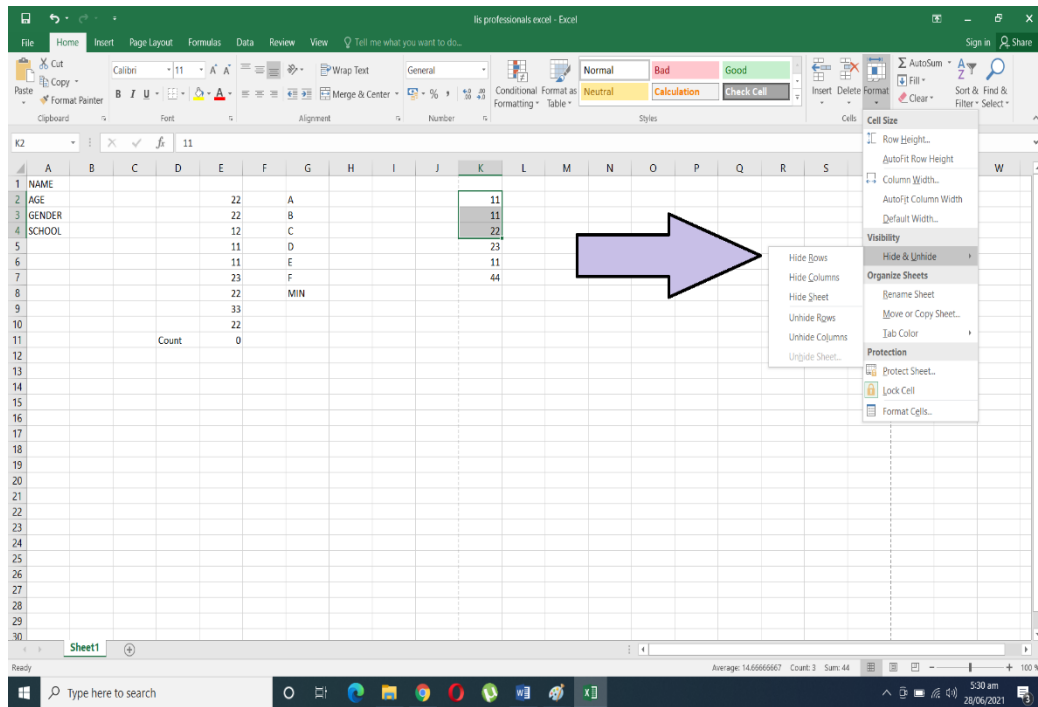
Figure 4.12:Hiding and un-hiding excel rows and columns
Source: Screenshot

3.3.5 Naming a Worksheet

To do this, double-click the **sheet** tab, and type the new **name** or you right-click the sheet tab and see rename in the dropdown and rename it. see below.
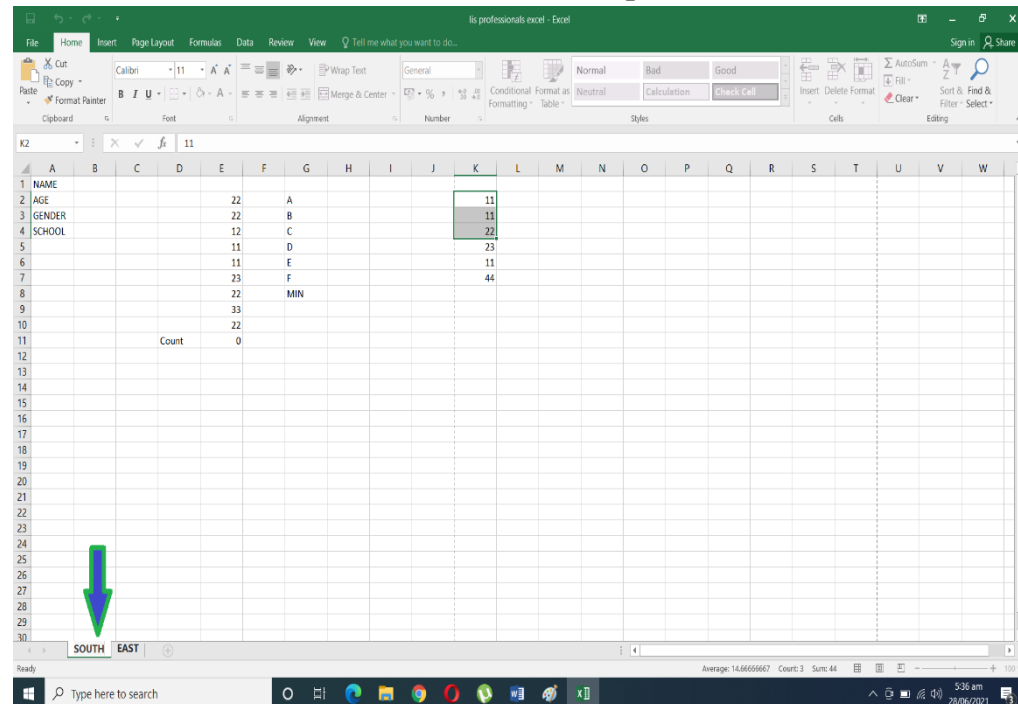
Figure 4.13: Margins;Naming a worksheet. Source: Screenshot

3.4 Formatting Data in an Excel worksheet

3.4.1 Changing the background color of a cell

To this, select the **cell** or range of **cells** you want to format. Click Home> Format **Cells** dialog launcher. On the File tab, under **Background** Color, pick the color you want. Or you right-click after highlighting the cells and you will see format cells. See below
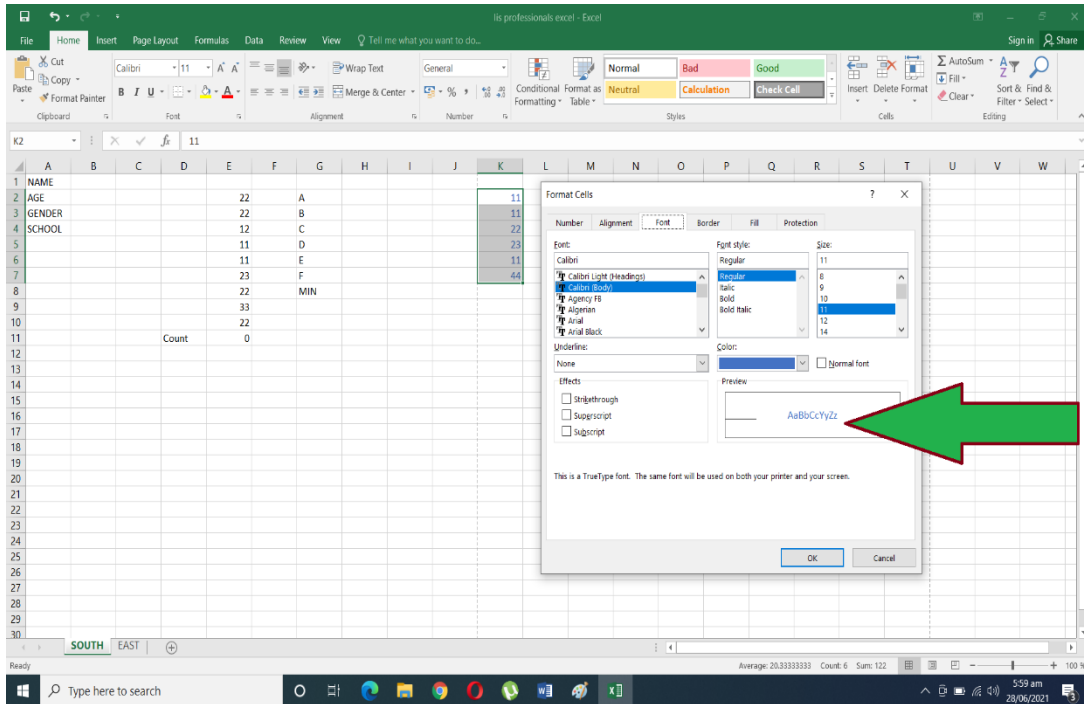
Figure 4.14: Changing colour of cells
Source: Screenshot

3.4.2 **Format data as currency values**

To do this, select the **cells** that you want to **format** , and then, in the Number group on the Home tab, click the down arrow in the Number **Format** box. See below

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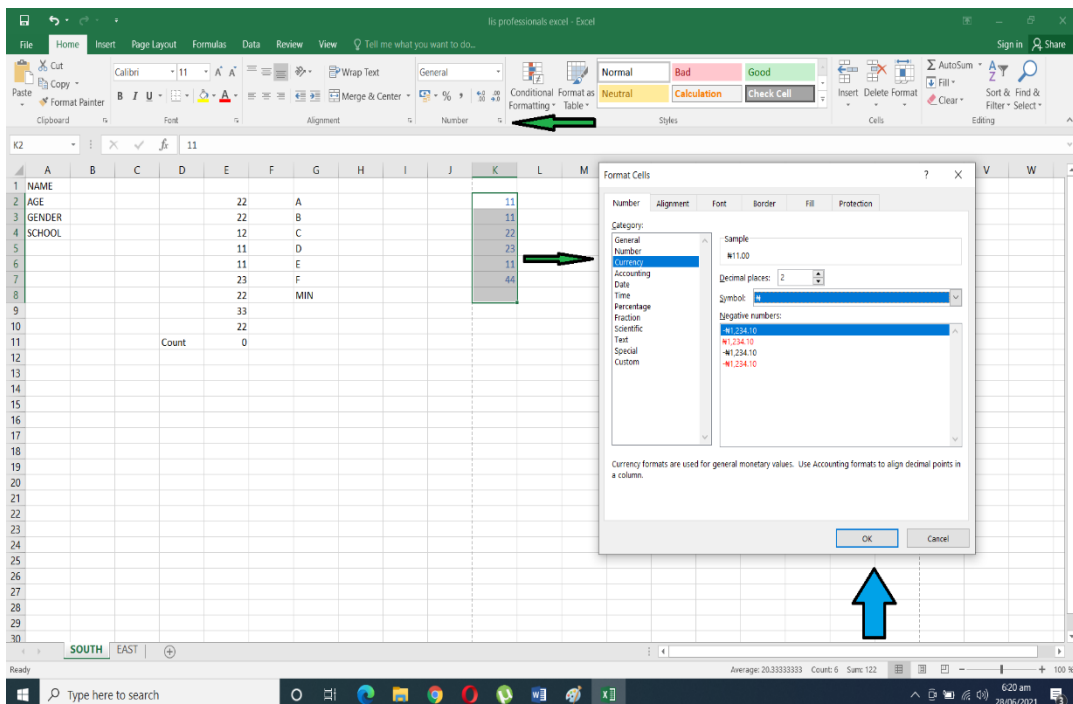
Figure 4.15: Formatting data
Source: Screenshot

3.4.3 How to use conditional formatting

To do this, select one or more cells in a range, table, or PivotTable report. On the Home tab, in the Style group, click the arrow next to **Conditional Formatting**, and then click Top/Bottom Rules. Select the command you want. Enter the values you want to **use**, and then select a **format**. See below.
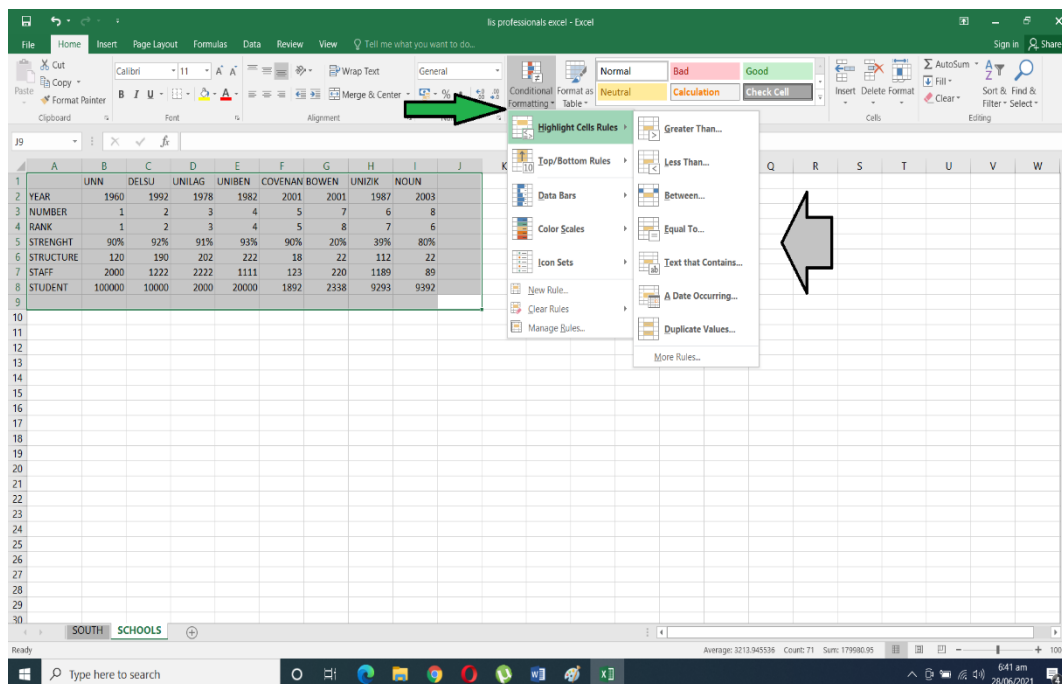
Figure 4.16: Conditional formating
Source: Screenshot

Note that you have the options to pick whatever conditions you want to give it.
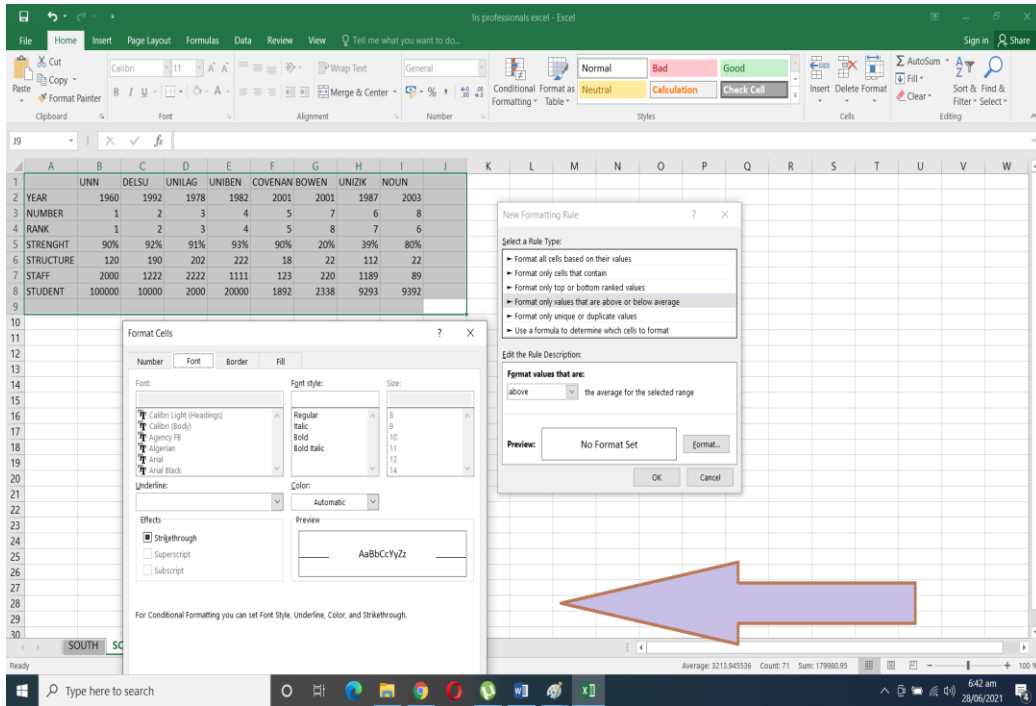
Figure 4.17: Conditional formattingc option
Source: Screenshot

Figure 4.18:Conditional formatting option
Source: Screenshot

3.5 **How to insert images and shapes into an Excel worksheet**

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3.5.1 Inserting Images

To insert images in Excel, open your Excel spreadsheet, click where you want to put a picture, and then switch to the Insert tab then to Illustrations group, and click Pictures. See below
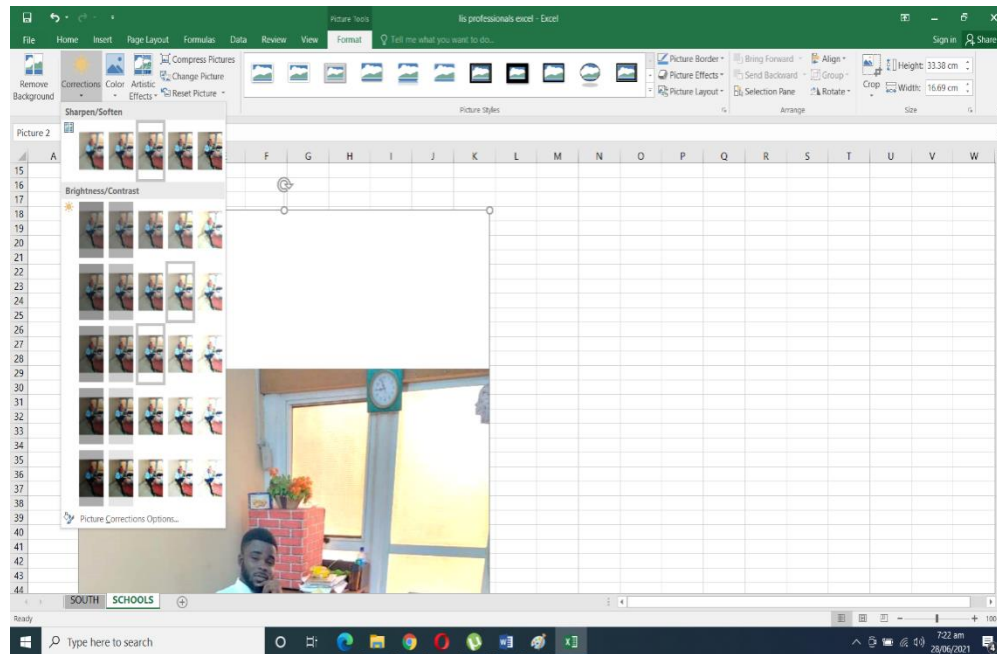
Figure 4.19: Inserting images and shapes
Source: Screenshot

See also
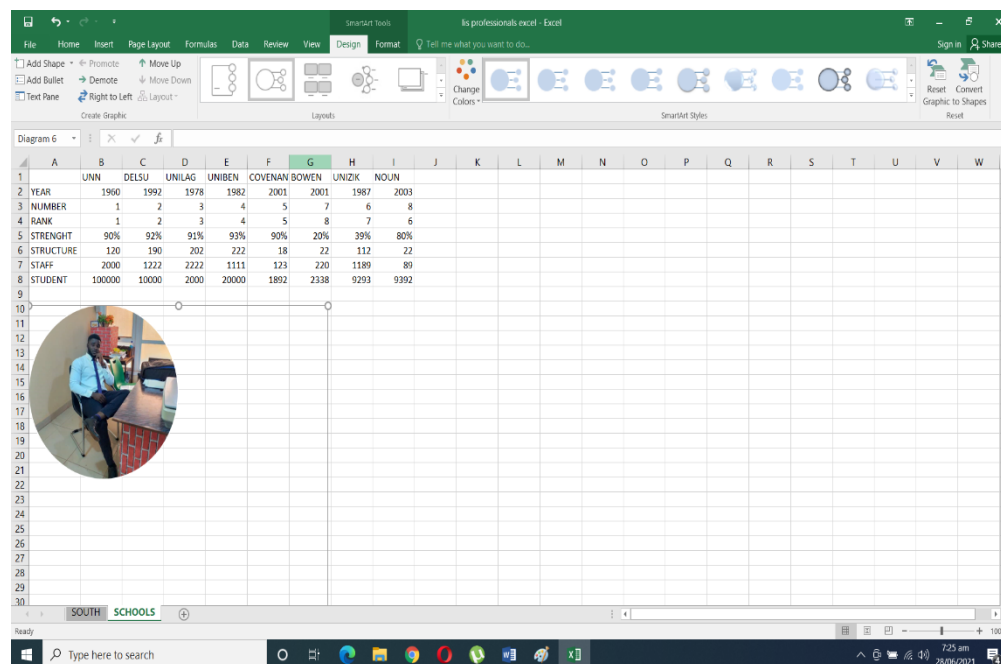
Figure 4.20: Inserting images and shapes

3.5.2   Inserting Excel Shapes

From the Insert tab, in the Illustrations group, click Shapes. Select a shape by clicking on it. Your cursor will change to a plus sign. Click in your worksheet where you want to place the shape, drag your mouse until the shape is the size you want it to be, and then release your mouse. See below
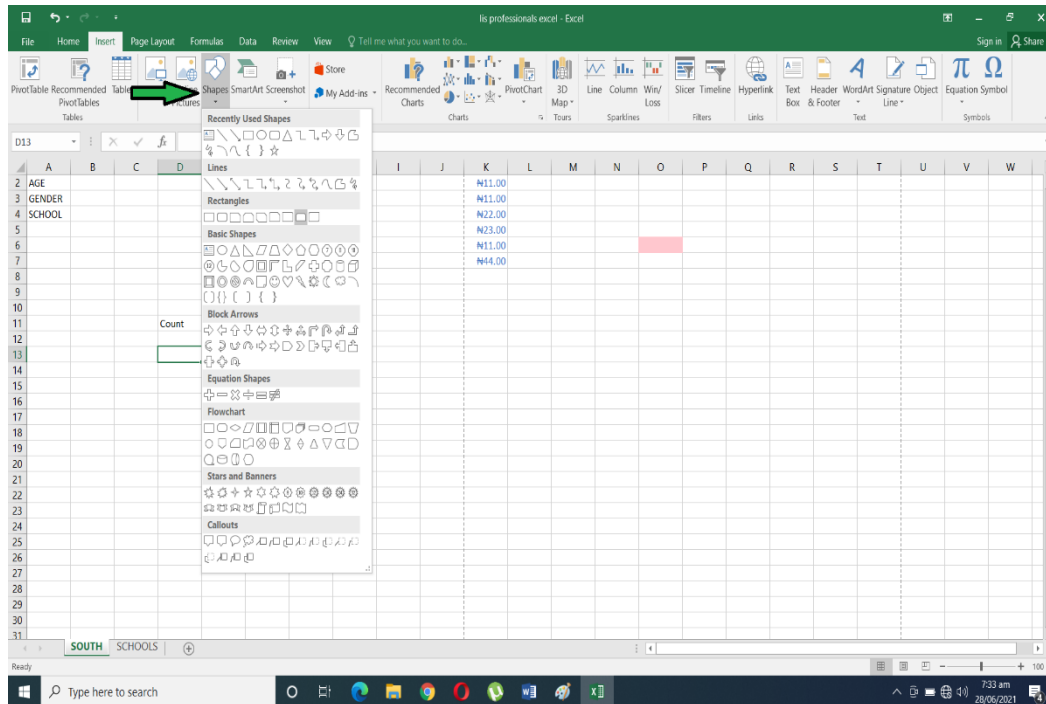
Figure 4.21: Inserting Excel Shape
Source: Screenshot

3.5.3 Working with Excel SmartArt

To do this, click the SmartArt button in the illustrations group. then choose a SmartArt graphic dialog box that appears. select a category in the navigation panel on the left followed by the list's or diagram's thumbnail in the center section then click ok.
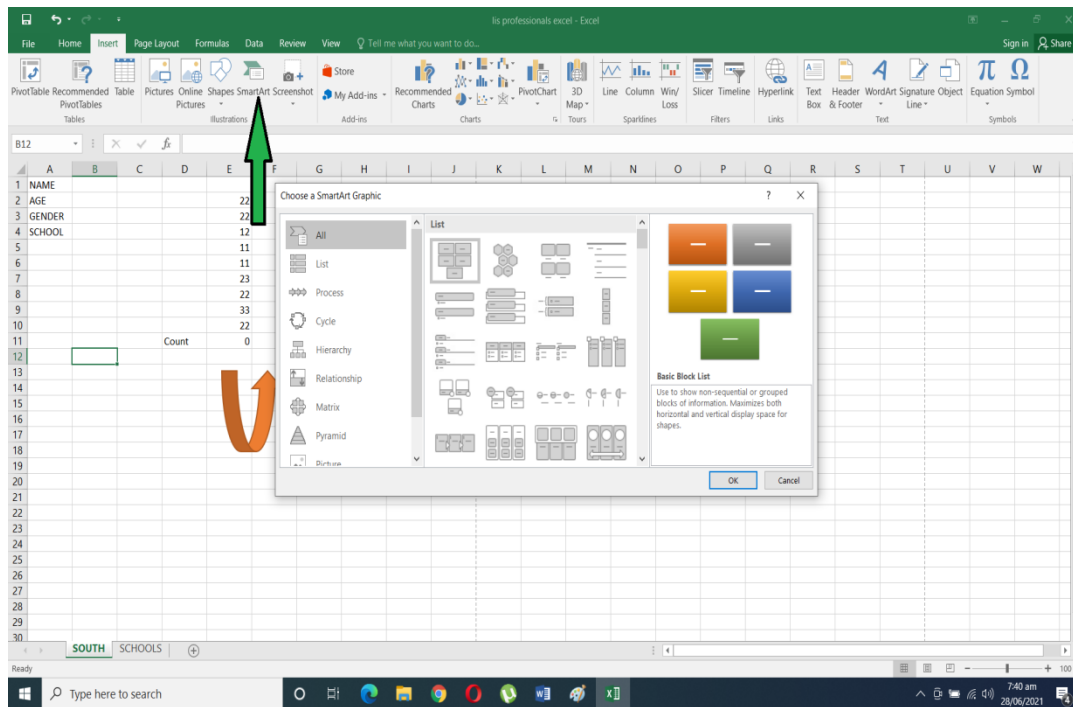
Figure 4.22: Excel SmartArt
Source: Screenshot

3.5.4 Printing an Excel Worksheet

3.5.4.1 Viewing documents in print preview in Excel

Printing your worksheet

The process of printing in Excel is not a big deal. Two things will facilitate this process. The first is to have a functional printer. The second is to ensure it is properly connected to your computer system. Alexander, M. & Kusleika, D. (2019) provide the following four steps to accomplish your printing process:

1. Make sure that the chart isn't selected. If a chart is selected, the chart will print on a page by itself. To deselect the chart, just press Esc or click any cell.

2. To make use of Excel's handy Page Layout view, click the Page Layout button on the right side of the status bar. Excel displays the worksheet page by page so that you can easily see how your printed output will look. In the Page Layout view, you can tell immediately whether the chart is too wide to fit on one page. If the chart is too wide, click and drag a corner of the chart to resize it, or just move the chart below the table of numbers.

3. When you're ready to print, choose File ⇨Print. At this point, you can change some print settings. For example, you can choose to print in landscape rather than portrait orientation. Make the change, and you see the result in the preview window.

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4. When you're satisfied, click the large Print button in the upper-left corner. The page is printed, and you've returned to your workbook. See Fig……
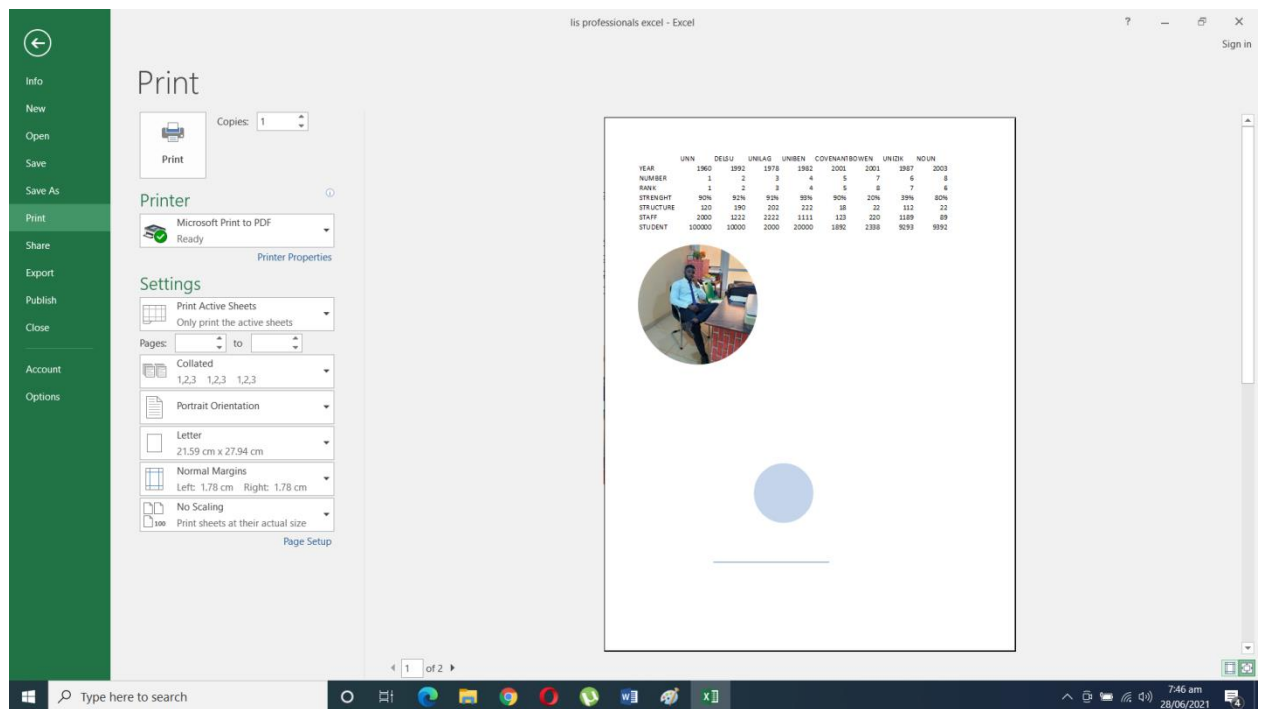
Figure 4.23: Printing worksheet

Source: Screenshot

3.5.6 **Changing the merging, scaling, and orientation**

On the Page Layout tab, in the Page Setup group, click Orientation, and then click Portrait or Landscape. See below
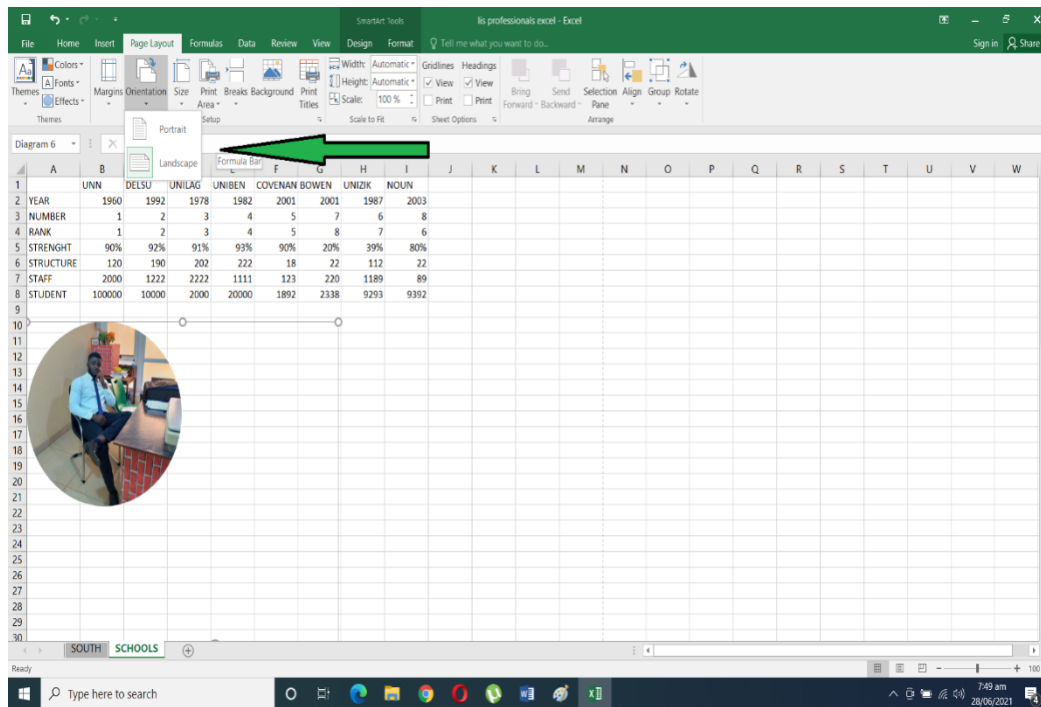
Figure 4.24: Changing the merging, scaling, and orientation
Source: Screenshot

3.5.7 Page layout view

See Fig 4.24 image and go preview it from the file button.

3.5.8 Header and footer

On the Insert tab, in the Text group, click Header & Footer. See below
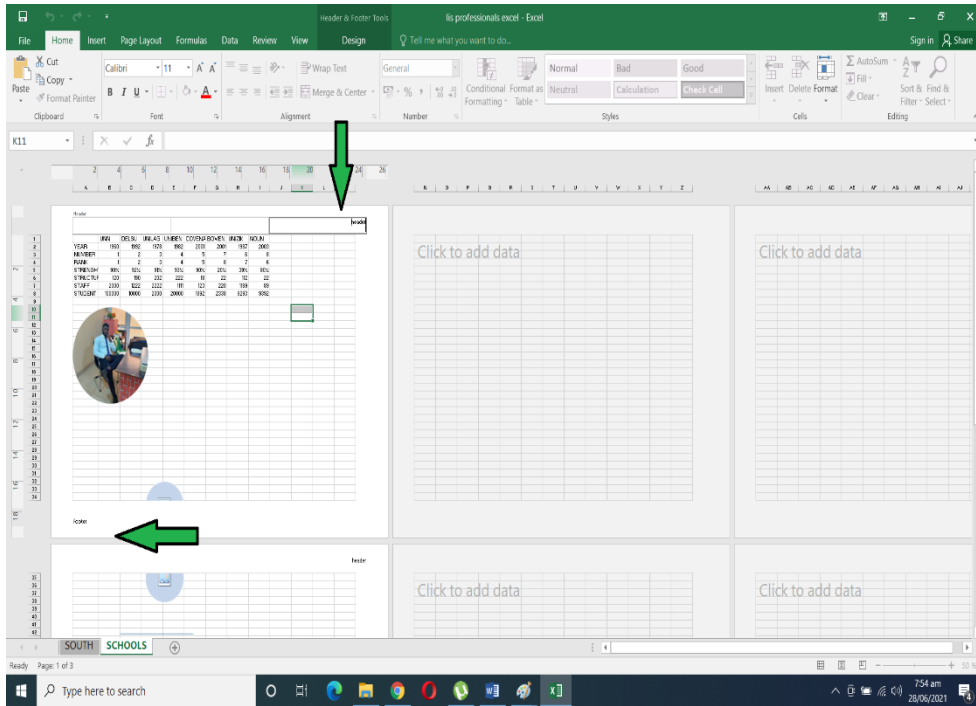
Figure 4.25: Header and footers

Source: Screenshot

3.5.9 Printing a specific range of cells

Open your spreadsheet, hold the ctrl key and highlight the area you want to print out, then go to page layout to print Area and set print Area, see below.
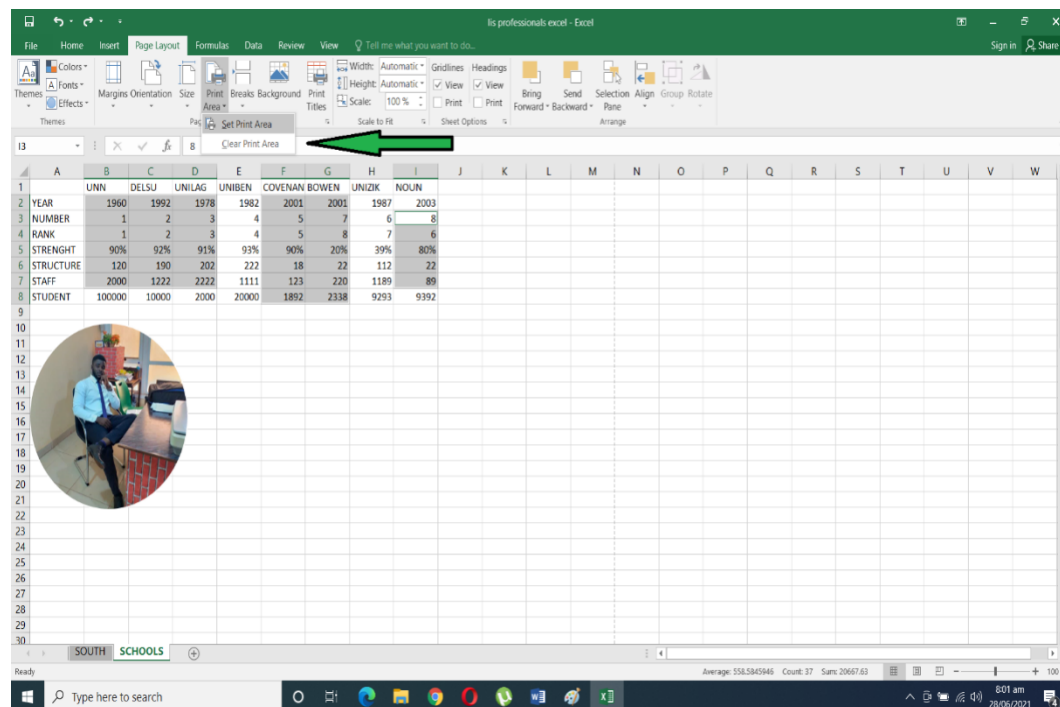
Figure 4.26: Printing a specific range of cells

Source: Screenshot

Next
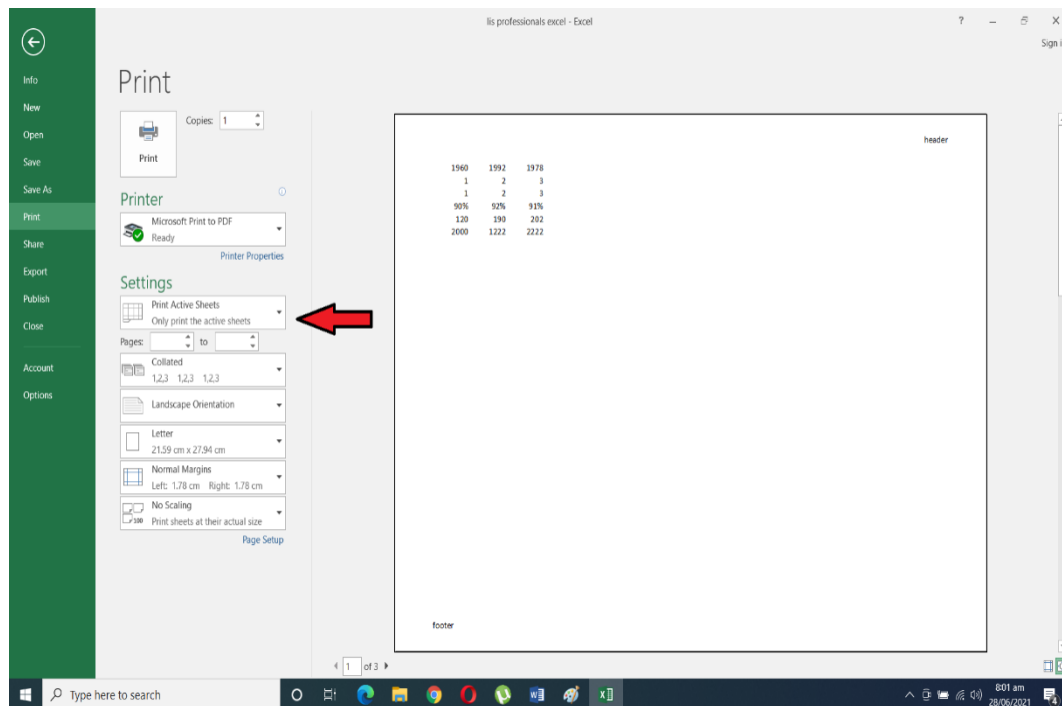
Figure 4.27: Printing a specific range of cells

Source: Screenshot

3.6   SUMMARY

We have learned how to move, copy data in excel; we have also learned how to delete rows and columns; we also learned how we can format data as currency values; we also learned how we can use conditional formatting e.t.c

SELF-ASSESSMENT EXERCISES (SAEs)

How do you delete rows and columns?
How can you hide rows and columns in excel?
How do you change the width and length of a cell?
How do you name a worksheet?

3.7 Glossary

Autosum: Display the sum of the selected cells directly after the selected cell.

Chart sheet: Refers to sheet in a workbook that contains only a chart

Database: Collection of data on a particular subject area

Transpose: Involves the pasting of data in the opposite orientation

VBA: Visual Basis Application, the programming language used for Excel.

3.8 REFERENCES/FURTHER READING

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Foulkes, L.(2020). *Learn Microsoft office 2019: a comprehensive guide to getting started with Word, PowerPoint, Excel Access, and Outlook.* Birmingham: Packt publishing.

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3.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISES (SAEs)

SAE 1: How do you delete rows and columns?

Answer to SAE 1:

To do this, Right-click the **row** and column number, and then select **Delete**.

SAE 2: How can you hide rows and columns in excel?

Answer to SAE 2:

First on the far left side of the spreadsheet, right click on the row header for the row header for the row you want to hide. Select hide in the pop-up menu. To hide column click the column header below the ribbon and select hide in the pop-up menu

SAE 3: How do you change the width and length of a cell?

Answer to SAE 3

Select the column or columns that you want to change. On the Home tab, in the Cells group, click Format. Under Cell Size, click Column Width. In the Column width box, type the value that you want.

SAE 4: How do you name a worksheet?

Answer to SAE 4:

To do this, double-click the **sheet** tab, and type the new **name** or you right-click the sheet tab and see rename in the dropdown and rename it.

MODULE 5: GRAPHICS DESIGN AND MICROSOFT ACCESS

This module aims to introduce students to the subject of graphics design and get to understand the elements and principles of design. Also, students will be able to use the Adobe Photoshop package for basic usage.

UNIT 1: INTRODUCTION TO GRAPHICS DESIGN
UNIT 2: INTRODUCTION TO ADOBE PHOTOSHOP
UNIT 3: INTRODUCTION TO CORELDRAW
UNIT 4: INTRODUCTION TO MICROSOFT ACCESS

UNIT 1: INTRODUCTION TO GRAPHICS DESIGN

1.1 Introduction

1.2 Learning Outcomes

1.3 Definition of Graphics Design and History of Graphics Design

      1.3.1 Definition of Graphics Design

      1.3.2 History of Graphics Design

1.4. Industry Specializations for Graphics Design

1.5 Introduction to the Basics of Graphics Design

1.5   Summary

1.7 Glossary

1.8 References

1.9 Possible Answers to Self-Assessment Exercises (SAEs)

1.1 INTRODUCTION

This unit aims to introduce students to the subject of graphics design and get to understand the elements and principles of design. In thisu, you get to have an overview of what graphic design is and the professional opportunities inherent in acquiring graphic design skills.

1.2 LEARNING OUTCOMES

By the end of this module, students should be able to:

- Define graphic design

- Know the history of graphic design

- Describe industry specialisation for graphic design

- Understand the elements and principles of design and their implementations.

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3.8 Definition of Graphics Design and History of Graphics Design

1.3.1 Definition of Graphics

Graphics design has been generally defined as the art or skill of combining text and pictures in advertisements, magazines, or books. This definition though true doesn't provide much context. Graphic design is not limited to advertisements, magazines, and books. It can be physical, digital, and anywhere in-between, this abstractness and versatility make it go far beyond the "simple" combination of text and images. The focus of graphics design is the visual communication of a message which could be to provide information, invoke thought, sell a product or even stimulate meaningful conversation. So you can say graphics design is about expressing an idea in the best way using visual storytelling and it requires problem-solving, communication, attentiveness, patience, and most importantly a good grasp of the project's desired result.

1.3.2 History of Graphics Design

Graphic design has a long and interesting history, traceable to paintings, drawings, graphs maps, and writings, found in cave paintings and created around 15,000 BC. These paintings were created to tell stories, keep records of events and provide information. Cave paintings started as basic line figures but expanded to detailed artwork as the years progressed. In some parts of the world, much original cave paintings are still visible. Cave paintings were useful, but they lacked a way to transport that information to other locations. This was resolved in 105 AD when Ts'Ai Lun invented paper. This made transporting and distributing written documents and various types of artwork easier than it had ever been. It also added more variety to the types of ink, paint, and other tools that could be used to create artwork. Finally, with the creation of Movable Type by Johannes Gutenberg in 1450, the key components needed for modern graphic design became available.

William Addison Dwiggins is considered the father of modern graphic design. He was a typeface designer in the 1920s. His most famous fonts include Caravan Metro, Electra, Caledonia, Eldorado, and Falcon. Dwiggins continued creating and innovating in the design community until he died in 1956. Less than a decade after Dwiggins' death, Douglas Engelbart invented the mouse. This invention of a precision pointing device paved the way for what would be the greatest innovation in design tools of this generation: the Macintosh. Apple presented the Macintosh in 1984. This was the first computer with a user-friendly interface. Shortly after the invention of 1984, Macintosh graphics applications such as Photoshop and Illustrator were introduced to the world. Since the invention of these applications, designers have been able to create amazing works of art across a variety of media.

1.4 Industry Specializations for Graphics Design

There are several types of graphic design, each with its own area of specialization. Though they often overlap, each type of graphic design requires a specific set of skills and design techniques. Many designers specialize in a single type; others focus on a set of related, similar types. Let us consider some of the design specialisation available in graphic design.

1.4.1. Visual Identity Design

Visual identity design is also called brand identity design. This deals with how an organisation communicates its personality, tone and essence, as well as memories, emotions and experiences. Visual identity graphic design is exactly that: the visual elements of brand identity that act as the face of a brand to communicate those intangible qualities through images, shapes and color. Designers who specialize in visual identity graphic design collaborate with brand stakeholders to create assets like logos, typography, color palettes and image libraries that represent a brand's personality. In addition to the standard business cards and corporate stationery, designers often develop a set of visual brand guidelines (style guides) that describe best practices and provide examples of visual branding applied across various media. These guidelines help to ensure brand consistency throughout future applications. Visual identity design is one of the most common types of design. Visual identity graphic designers must possess a general knowledge of all types of graphic design to create design elements that are suitable across all visual media. They also need excellent communication, conceptual and creative skills, and a passion for researching industries, organizations, trends and competitors.

1.4.2 Marketing and Advertising Design

There is no doubt that every organisation depends on successful marketing efforts to tap into its target audience's decision-making process. In essence, great marketing engages people based on the wants, needs, awareness, and satisfaction

they have about a product, service, or brand. Since people will always find visual content more engaging, graphic design helps organizations promote and communicate more effectively. Marketing designers work with company owners, directors, managers, or marketing professionals to create assets for marketing strategies. They might work alone or as part of an in-house or creative team. Designers can specialize in a specific type of media (vehicle wraps or magazine ads, for example) or create a broad assortment of collateral for print, digital, and beyond. Marketing designers need excellent communication, problem-solving, and time management skills. In addition to being proficient in several graphic design, layout, and presentation apps, they must also be familiar with production for print and online environments. Entry-level positions in this area are a great way for new designers to learn processes and acquire valuable skills and experience.

1.4.3 User Interface Design

A user interface or what you might know as just UI is how a user interacts with a device or application. The UI design is the process of designing interfaces to make them easy to use and provide a user-friendly experience often also known as UX.
The UI includes all of the things a user interacts with—the screen, keyboard, and mouse—but in the context of graphic design, UI design focuses on the user's visual experience and the design of on-screen graphic elements like buttons, menus, micro-interactions, and more. It's a UI designer's job to balance aesthetic appeal with technical functionality. The UI designers specialize in desktop apps, mobile apps, web apps, and games. They work closely with UX (user experience) designers (who determine how the app works) and UI developers (who write code to make it work).

1.4.4. Publication Design

Publications are long-form pieces that communicate with an audience through public distribution. They have traditionally been a print medium. Publication design is a classic type of design and they range from books and newspapers to magazines and catalogs. Graphic designers that specialize in publications work with editors and publishers to create layouts with carefully selected typography and accompanying artwork, which includes photography, graphics, and illustrations. Publication designers may work as freelancers, as creative agency members, or in-house as part of a publishing company. Publication designers must possess excellent communication, layout, and organisational skills. In addition to graphic design expertise, they need to understand color management, printing, and digital publishing.

1.4.5 Packaging Design

Most products require some form of packaging to protect and prepare them for storage, distribution, and sale. But packaging design can also communicate directly to consumers, which makes it an extremely valuable marketing tool. Every box, bottle, and bag, every can, container, or canister is a chance to tell the story of a brand. Packaging designers create concepts, develop mock-ups and create print-ready files for a product. This requires expert knowledge of print processes and a keen understanding of industrial design and manufacturing because packaging design touches so many disciplines. Packaging designers' work requires top-notch conceptual and problem-solving skills in addition to a strong working knowledge of print and industrial design. They must also be aware of current trends.

1.4.6 Motion Design

What do we mean by motion designs? Simply put, motion designs are designs that are in motion. It can include animation, audio, typography, imagery, video, and other effects that are used in online media, television, and film. The medium's popularity has skyrocketed in recent years as technology improved and video content became king. Motion graphics designers begin by developing storyboards and then bring their concepts to life with animation, video, and traditional art. Depending on the industry, a strong working knowledge of marketing, coding, and 3D modeling can be definite assets.

1.4.7 Environmental Design

What is the goal of environmental graphics? Environmental design visually connects people to places to improve their overall experience by making spaces more memorable, interesting, informative, or easier to navigate. How would you define environmental design? It is a broad type of design and multidisciplinary practice that merges graphic, architectural, interior, landscape, and industrial design. Designers collaborate with people in any number of these fields to plan and implement their designs. As a result of this, designers typically have education and experience in both graphic design and architecture. They must be familiar with industrial design concepts and able to read and sketch architectural plans.

1.4.8 Art and Illustration for Graphics Design

Graphic art and illustration are often seen as being the same as graphic design: however, they are each very different. Designers create compositions to communicate and solve problems: graphic artists and illustrators create original artwork. Their art takes several forms, from fine art to decoration to storytelling illustrations. Now technically, this is not a type of graphics design but so much is created for commercial use within the context of graphic design that you cannot talk about one without the others. You have examples like t-shirt designs, comic books, video games, websites, stock images.

1.5 Introduction to the Basics of Graphics Design

In this section, students should be able to know and understand the design elements and principles and should also be able to put them into practice.

1.5.1 Elements of Design

We've already established that graphic design is the art of combining images, text, and ideas to create works that capture a viewer's attention to communicate a specific message and because graphic designers are always grappling with how to do just that, they've come up with a variety of tips and techniques to keep their work organized and effective. The elements of design are best understood as being the building blocks of any project. Even the most complex graphic design portfolio can be broken down into fundamental elements like lines, shapes, and fonts. The seven basic elements of graphic design are line, shape, color, texture, type, space, and image. Let us take them one by one.

1.5.2 Line

Lines are always more than just points that are strung together. Depending on their form, weight, length, and context, lines can help organize information, define shapes, imply movement, and convey emotions.
Lines can:
• …be horizontal, vertical, or diagonal.
• …be straight, curved, or freeform.
• …zigzag or create other patterns.
• …be solid, broken, or implied.
The invisible lines found in the grids of print designs act as guides, offering projects more structure and direction. Meanwhile, visible lines with weight and form can be used to communicate a variety of messages and moods in a designer's finalized work. Think about the kinds of lines you see in your everyday life and recall the kinds of messages that they convey to you. Depending on their context, heavier dark lines can communicate stability—or underline a threat. Scribbled lines can suggest excitement, confusion, or messiness. Zig-zagged lines might express electricity or anger, while wavy lines can suggest fragility, elegance, uncertainty, or beauty. It is noteworthy that because even simple lines can convey so much, designers should always carefully consider how and when to use them to provide the very most impact.

1.5.3 Shape

For graphic design, shapes are best understood as areas, forms or figures contained by a boundary or closed outline. Two types of shapes are worthy of note: geometric and organic (or "free-flowing"). Geometric shapes can include either two-dimensional or three-dimensional forms. They are created by a set of points that connect by either straight or curved lines and are usually abstract and simplistic. Geometric shapes can include triangles, pyramids, squares, cubes,

rectangles, pentagons, hexagons, octagons, decagons, circles, ellipses, and spheres. Organic shapes are far less uniform, proportional, and well-defined. They can be symmetrical or asymmetrical. They might include natural shapes, such as leaves, crystals, and vines, or abstract shapes, such as blobs and squiggles. People often equate rounded edges and rings with positivity, community, love, friendship, and harmony. Squares and rectangles can suggest balance, dependability, and strength. And triangles have cultural associations with science, religion, history, civilization, and power. If you choose a certain set of shapes, you can convey stability, dependability, and organization. Choose others, and you communicate chaos, creation, and fun. According to Gestalt psychology—a reigning design theory—audiences make sense of designs by seeing them as a whole rather than as their parts. Pick interesting, appropriate shapes, and you're on your way to giving viewers a more visually pleasing, attention-sustaining design.

1.5.4 Colour

Colour can be a useful tool for communicating a mood or provoking an emotional response from your viewer. Color theory and the color wheel provide a practical guide for graphic designers who want to select a single color or combine multiple colors in a harmonious—or intentionally discordant—way.
In graphic design, some colors are grouped into particular categories.

- Primary colors (red, yellow, and blue) are defined as the pure-pigment colors from which all others are made. There is no way to mix any other color to get red, yellow, or blue. But mix them, and you create all kinds of shades.
- Secondary colors (violet, green, and orange) are the immediate results of mixing two primary colors: Red and yellow make orange; blue and red make purple; and yellow and blue make green.
- Tertiary colors (red-orange, yellow-orange, yellow-green, blue-green, blue-violet, and red-violet) are the six colors that result from mixing a primary color and a secondary color.

Color harmonies are created when two or more colors are chosen from their positions on the color wheel.

- Complementary colors lie opposite one another on the color wheel. They are highly contrasting and can express vibrancy and energy or be visually jarring, depending on how they're used. Red and green are complementary colors.
- Analogous color schemes use colors that lie next to one another on the color wheel. They are visually pleasing and can create a sense of harmony and calm in a design. However, they can also seem dull if used incorrectly, or if they don't have other contrasting elements to energize them.
- Triad color schemes use colors that are evenly spaced around the color wheel. They are very vibrant and require balance to be visually pleasing.

• Split-complementary color schemes use a base color and the two colors that are adjacent to its complementary color. They provide great visual contrast without being jarring, which is why so many designers prefer them.

• Tetradic or rectangular color schemes use two sets of complementary colors. Because they feature four colors, tetradic schemes offer designers a myriad of varieties and possible outcomes.

• Square color schemes feature four colors that create the shape of a square on the color wheel. They also present many possible design outcomes, but should always be balanced when used.

While you consider your color schemes, you may also want to decide which tint and shade are appropriate for your project. Pastel colors can seem calming or unconfident, while bright tints might convey fun and happiness—or seem cheap in the wrong context. Darker shades connote seriousness and professionalism, but they can also come across as somber or boring if you're not careful. According to the experts, human beings have different psychological responses to color depending on the cultural context. It's important to learn your audience's color associations and to exploit or avoid them, depending on the goals of your project.

1.5.5 Texture

The texture is the feel of a surface—furry, smooth, rough, soft, gooey, or glossy. Most graphic designers must visually convey texture by using illusions to suggest how their work might feel if viewers could touch it. Mastering texture is an important part of making designs look polished and professional. There are different ways to experiment with texture in your design work. If you are inspired by nature, you may want to work with organic textures, drawing inspiration from leaves, tree bark, stones, fur, flowers, grass, and soil. Or you can create an abstract pattern by uniformly repeating two-dimensional elements, then use that pattern to make textured backgrounds. Consider working with textured typography to provide extra visual interest. If you're interested in photography, you can also learn to incorporate images into your background that layer your work. For added textural contrast, adjust your photo's color saturation and transparency levels and see how it affects the mood of your design.

1.5.6 Type

Whether you're choosing a font or creating your typography for a graphic design project, it's important to make sure the type you use is legible and appropriate for your subject. Type affects the overall mood of a design, so consider whether your letters should be printed or script and whether they should have angles that are sharp or rounded. The weight of your lettering is also an important part of your design. Typically, large or thick letters convey that the words they convey are important. If you aren't careful, though, they can also seem heavy-handed or disrupt a design's balance. Thin letters can connote elegance or modernity, but

they can also seem fragile. If you can't settle on one font or size, there may be room for you to incorporate more than one into your logo's final design. But as a general rule, don't exceed three in a given project.

1.5.7 Space

Spacing is a vital part of any designer's toolkit. It can give a design breathing room, increase its visual impact, balance out heavier visual elements, and emphasize images or messages that viewers should remember. Without enough space, a design can risk becoming too visually cluttered for your audience to understand.

Spacing can separate objects or link them together. Narrow spacing between visual elements conveys that they have a strong relationship, while wider spacing communicates that they are less related. When you surround a visual element with space, you're emphasizing its importance, but the space can also suggest loneliness and isolation. Positive space refers to the space occupied by visual elements that a designer wants their audience to focus on. Negative space refers to everything else, including the background. Many designers make the mistake of only focusing on crafting a positive space but organized negative space is just as essential to a cohesive, visually interesting composition. If you pay attention to the way negative space affects your design, it could elevate your project from amateurish to professional.

1.5.8 Image

Whether graphic designers use photographs or illustrations, they rely on images to grab the audience's attention and express specific messages. An image works on multiple levels simultaneously: It provides context for a designer's communication, adds necessary drama or action, and creates an overall mood. When incorporating images into your work, it is vital to find a picture that tells the right story and maximizes visual interest. You could choose an image with a lot of contrasting colors and textures, which offers viewers a visual feast to keep audiences interested. Or you might spotlight a particular part of an image to convey where they place the majority of their focus. Images are perhaps the most impactful visual tools of communication. If you thoughtfully use their power to your advantage, your work will convey more than you ever thought possible.

1.5.9 PRINCIPLES OF DESIGN

The principles of design—sometimes referred to as "the principles of art"—are rules that help define and regulate how those elements interact with one another, their context, and their audience.

1.5.9.1Balance

This refers to the distribution of the graphic design elements, such as shapes, text boxes, and images, of a design evenly throughout a certain layout. Designers can choose between a balanced (stable) design or an off-balanced (dynamic) layout. In the context of graphic design, balance is of three types:

- **Symmetrical** – This type of design is formed along a vertical axis and or horizontal axis, where the weight of the elements is evenly divided into both sides of the layout.
- **Asymmetrical** – This type of balance employs scale, contrast, and colour to even out the flow of a layout. It is usually found in websites, where two sides of a webpage differ from each other but contain similar elements.
- **Radial** – Here, the elements of a design are placed in a circular pattern on the layout. This provides a sense of movement and dynamism to the eyes of the viewer.

1.5.9.2 Alignment

This fundamental aspect of a design creates a visual connection between elements such as images, shapes, or blocks of texts. Alignment helps develop a sharp and ordered appearance by eliminating any distortion within the layout. It represents the scale of each element by comparing their proportion and focusing on the elements that can have a strong impact on users.

1.5.9.3 Hierarchy

This method combines two aspects, dominance and priority, giving extra weight to certain elements of a design over others. It helps brands convey their message to the audience by focusing on a particular element of the design. Hierarchy can be achieved by:

- Highlighting the title using large or bold fonts;
- Placing the key message at a higher level than other elements;
- Adding shapes to frame the focal view;
- Implementing detailed and colourful visuals.

1.5.9.4 Contrast

Contrast is an important principle in any form of visual art as it guides the customer's attention to the key elements of a design. It is essential for maintaining the distinction between similar elements in a design, thereby enhancing a layout's overall legibility. Contrast is formed when design elements are placed in opposition on a layout, for example:

- Dark vs light;
- Thick vs thin;
- Contemporary vs traditional;
- Large vs small.

1.5.9.5 Rhythm

Rhythm brings together different elements to create a more organised and consistent look. Repetition of certain elements such as logos or colour can help make a brand easily recognisable and strengthen the overall look. Rhythm is classified into two types;

- **Fluid** – This adds a significant amount of variation to the design, keeping the flow in a single direction.
- **Progressive** – Progressive rhythm is based on a clear sequence that controls the visual movement of the audience between the different elements.

1.5.9.6 Proximity

Proximity helps in decluttering the overall design by creating a relationship between related elements. It forms a visual connection among important design factors such as colour, font, type, or size, ensuring the layout is balanced to form a perfect design. It enables the audience to have a pleasant overview of what they are looking at, thereby offering a good user experience.

1.5.9.7 Colour and space

Choosing the right colour can help define the tone of the design. Designers can choose from a wide range of colour combinations for the background and text of the layout. Space refers to the area around or between the various elements of the design. It can either be used to create shapes or highlight the important aspects of a design. Graphic designers use a colour palette to choose colours that can create contrast or even work together to complement other elements.

1.6   SUMMARY

In this unit, you have been able to learn about the core of design, from its history and specializations in designs to design principles and elements. We have also considered graphic design basics which are critical to practical applications. Whether you are a design enthusiast who simply wants to make community bulletins and attractive flyers, or a designer in a large enterprise who is forced to measure output in volume, you might not immediately know where you're going creatively. But, especially as fine artists who are looking for that "special something" to redefine their work, we all pack toolkits for our artistic voyages, both virtual and physical. You've seen in this unit that the design software outlined here is a necessary part of your computer graphics toolkit. You've got the right applications, and basic knowledge needed to fire on, and now it's simply up to you to create your gallery of ideas. You are guided toward a goal, you can modify the goal to suit scores of personal artistic needs, and the end goal is as simple or as ambitious as the situation calls for.

SELF-ASSESSMENT EXERCISES (SAEs)

1. Define graphic design?

2. What is the focus of graphic design?

3, List and explain the elements of design

4. List and explain the principles of design

1.7. Glossary

Balance: This refers to the distribution of the graphic design elements, such as shapes, text boxes, and images, of a design evenly throughout a certain layout.
Environmental desisgn: It is a broad type of design and multidisciplinary practice that merges graphic, architectural, interior, landscape, and industrial design.
Marketing designers: Designers who work with company owners, directors, managers, or marketing professionals to create assets for marketing strategies.
Motion designs: Designs that are in motion.
Publication design: A classic type of design that range from books and newspapers to magazines and catalogs.
Texture: The texture is the feel of a surface—furry, smooth, rough, soft, gooey, or glossy.
Visual identity design: is also called brand identity design.

1.8 REFERENCES/FURTHER READING

Ikekeonwu, G. A. M & Oguike, O. E. (2017). Computer Applications. Department of Enugu: Computer Science, University of Nigeria, Nsukka. 121-142.

I.9 Possible Answers to Self-Assessment Exercises (SAEs)

SAE 1: Define graphic design?

Answers to SAE 1;

Graphics design is about expressing an idea in the best way using visual storytelling and it requires problem-solving, communication, attentiveness, patience, and most importantly a good grasp of the project's desired result

SAE 2: What is the focus of graphic design?

Answer to SAE 2:

The focus of graphics design is the visual communication of a message which could be to provide information, invoke thought, sell a product or even stimulate meaningful conversation

SAE 3: List the elements of design.

Answer to SAE 3:

SAE 4. List the principles of design.

The following are the major principles in design:

1) Line
2) Shape
3) Colour
4) Texture
5) Type
6) Space and
7) Image

Answer to SAE 4:

The principles of design—sometimes referred to as "the principles of art"—are rules that help define and regulate how those elements interact with one another, their context, and their audience. The following are the major principles in design:

1) Balance
2) Alignment
3) Hierachy
4) Contrast
5) Rhythyn
6) Proximity
7) Colour and space

SAE 5: What skills must publications designers must possess?

Answer to SAE 5;

Publication designers must possess excellent communication, layout, and organisational skills. In addition to graphic design expertise, they need to understand color management, printing, and digital publishing.

UNIT 2– INTRODUCTION TO ADOBE PHOTOSHOP

CONTENT

2.1   INTRODUCTION

This unit aims to introduce students to the subject of Adobe Photoshop. In this Unit you get to have an overview of Adobes a tool and the practical application of Photoshop in various design contexts

2.2   LEARNING OUTCOMES

● By the end of this module, students should be able to:

● Understand Adobe Photoshop as a bitmap application;

● Have basic knowledge of Adobe Photoshop

● Navigate the Adobe Photoshop landscape

● Know and use Adobe Photoshop tools

2.3   Overview and Basics

2.3.1 Overview

Adobe Photoshop is a bitmap application, meaning it is good for just about anything with continuous ranges of tones like photographs. Photoshop uses the graph paper-like way of drawing, which means that unless the squares of the graph paper you happen to be using are not small enough, those squares (pixels) are going to be visible to the naked eye. Photographs and other continuous-tone images are very important in design, so Photoshop is a vital tool in the designer's toolbox.

Please note: Adobe Photoshop is just a tool. It is the easy part of the design. The hard part is how to best use it to make designs that communicate well. This module attempts to lead you through the basic features of the applications so that you can also learn the more important design aspect with minimum frustration. The version of the application used as a reference is Adobe Photoshop Version: 22.3.0. Photographs and other continuous-tone images are very important in design, so Photoshop is a vital tool in the designer's toolbox. To see the graph paper-like quality of Photoshop, open the application up, go to File / New, and figure out how to draw something like a diagonal line with the paintbrush tool. Use the magnifier tool to zoom in on this repeatedly until you can see the squares.
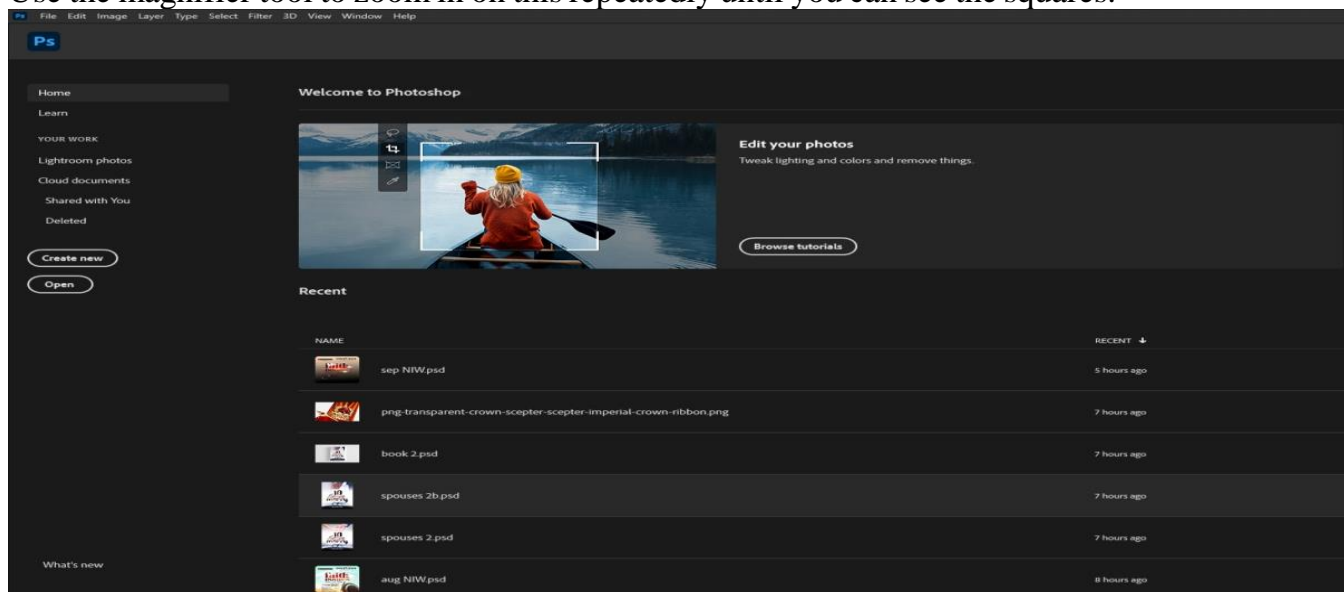
Figure 5.1: Adobe Photoshop 2021 "Home" Interface
Source: Adobe Photoshop 2021 PC Software

2.3.2 Photoshop Basics

Pixels
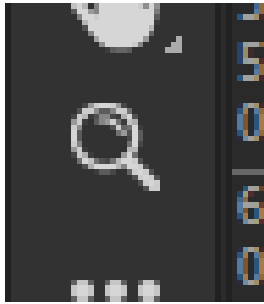
Figure 2.2: Adobe Photoshop zoom tool

Source: Adobe Photoshop PC software

Find an image that you like on your PC. Click and hold on to it, then drag the icon for that image (the image file) on your PC over the Photoshop icon to open it in Photoshop. You could also open it in Photoshop by control-clicking or right-clicking the file and choosing Photoshop. Use the zoom tool to magnify the image many times. You should see a couple of things. First, the image is composed of squares—these are called pixels. Each pixel can be only one color (if they appear to contain more than one color then it is an optical illusion called an adjacency effect). These pixels are the basic building blocks for an image, and all Photoshop (bitmap) images are composed entirely of these and nothing else.

The second thing to notice is that there are no lines or objects in Photoshop. What may look like a line, such as at the side of someone's face, is just colored pixels transitioning softly to differently colored pixels. This is important. It is a fundamental difference between Photoshop and Illustrator.

Opening a New Document
Close the image you have opened in Photoshop and open a new document (click on File / New). A blank document will help us to see the basics of the application.
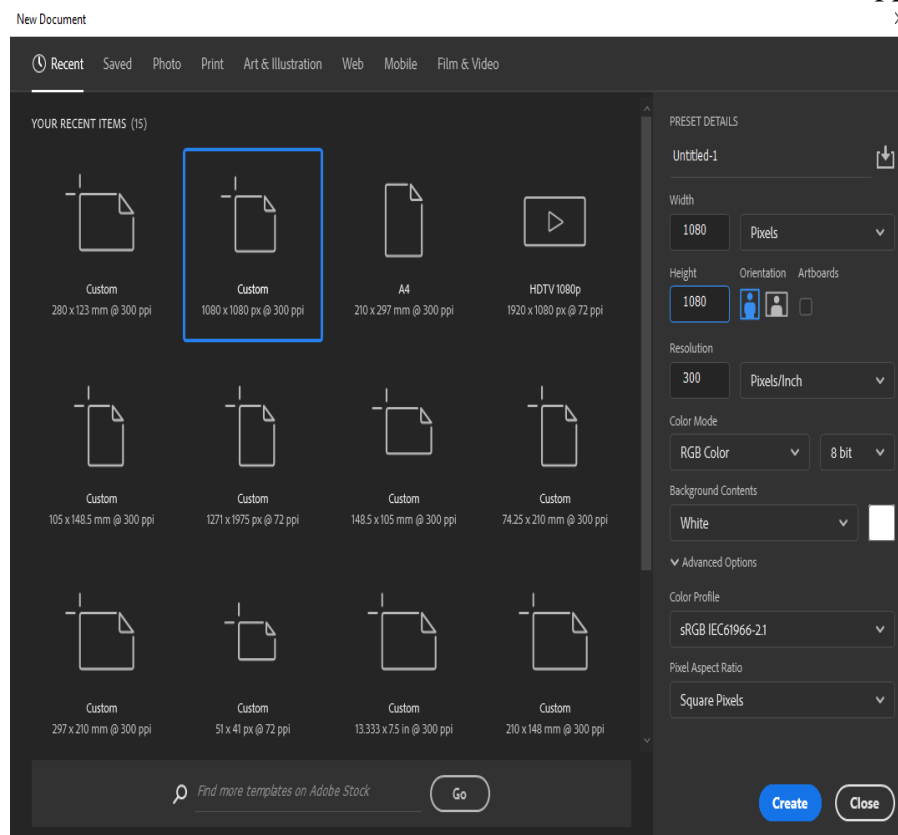
Figure 5.3: Adobe Photoshop New document Interface

Source: Adobe Photoshop 2021 PC software

Photoshop has no page, only those little pixels that make up an image. The more pixels there are in an image, the smaller they will look. To use an analogy presented earlier in this module, we need graph paper with very small squares (pixels), hence a lot of squares.
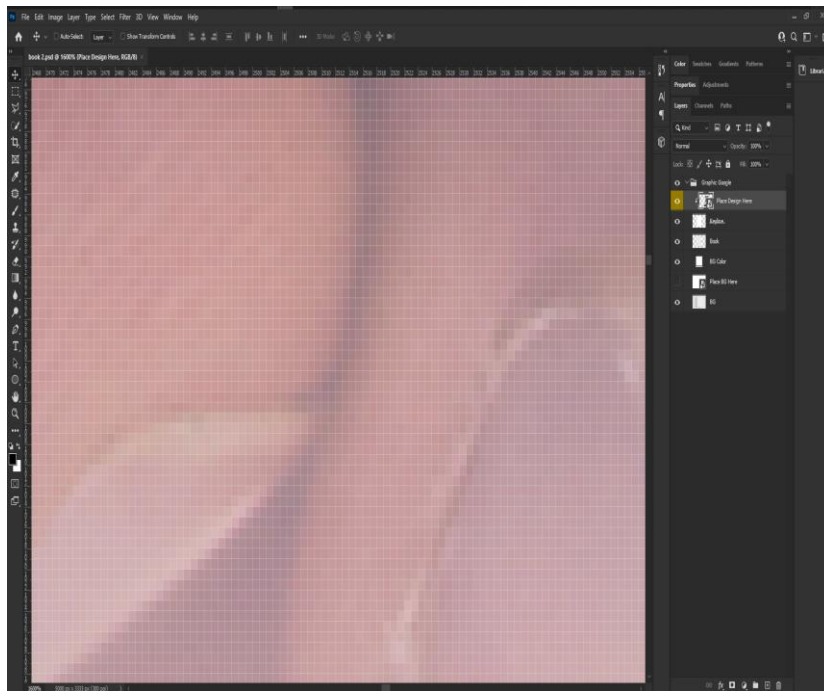
Figure 5.4: Adobe Photoshop showing pixels of an imgage

Source: Adobe Photoshop 2021 PC software

For your image, specify 1080 pixels by 1080 pixels. For just looking at some things on the screen this is plenty of pixels for now. The number in the resolution box does not matter at all for now. For color mode, choose RGB. This stands for Red, Green, and Blue. Also, choose 8 bit. Bits determine how many colors each pixel color could be chosen from. Images with more than 8 bits have more color information possible for each pixel, but we wouldn't see it. Let's start with a document filled with white pixels (it has to be filled with some color of pixels), so set the background contents to white. When you click 'OK' you will get a window with a white square. This is called the canvas. If you drag your whole window frame a bit larger you will see the difference between the canvas and the area surrounding it. The canvas is full of pixels we can

change, the area surrounding it is... well, just the area surrounding it—no pasteboard, no functionality.

2.3.3. Getting Images for Use in Photoshop

Almost any photographic image can be opened in Photoshop. You can get one from the web, from your digital camera or scanner, or just open something someone sent you in an email. Either go to File / Open in Photoshop, drag the image file onto the Photoshop icon, or hold down the control key while holding the mouse down on an image file and choose open with Photoshop. Go ahead and open an image file in Photoshop. Each image that you open will have a different pixel dimension, and as we will see later, the number of pixels in an image is very important. For now, go to Image / Image Size, and see the number of pixels you have. If either dimension is less than about 100, then your image is probably very small, or to put it another way, the pixels will be too big, so you should find another image. If, on the other hand, either dimension is over 6,000 pixels, then your image is too big, and the sheer number of pixels may be unnecessary and bog down the application. So, you should choose a different image. If you do an image search in Google it will tell you the size of an image in pixels before you go to it, and you can also specify general pixel sizes to search for.

Assuming you have an image that is just right, let's look at a few things. If you are zoomed in, you can hold down the space bar to drag around the view. Zoom in close enough to look at the individual pixels that make up the image. Zoom back out to see how those individual pixels make the illusion of continuous tones. Now let's look at the tools. We are going to be most concerned with the first 13 tools. The first group of 6 tools is

selector and move tools, and the second group of 9 are the tools that

Figure 5.5: Photoshop tool bars

Source: Adobe Photoshop 2021 PC software

Group A   Group B

change the color of pixels or the editing tools.

2.4. Photoshop Tools

2.4.1. Marque Tools
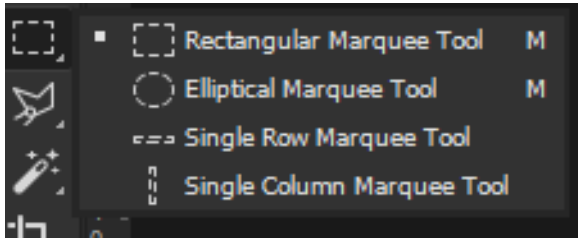
Figure 5.6: Photoshop Marquee Tool group
Source: Adobe Photoshop 2021 PC Software

Choose the rectangular marquee tool and drag a box with it within your 'painting' of lines. You should see a rectangle of 'marching ants'. Within that box the pixels are selected, outside they are not. With the zoom tool magnify the view on one of these borders to see how the selection lies between pixels, then double-click on the magnify tool to bring the view back to 100%. Now choose the move tool at the top of the panel. Click and drag to move your selection. Notice that the area where you moved your selection from is now filled with pixels the color of your background color. Select something else and move it.

Number this image and provide the source

2.4.2 Magic Wand Tool

It is a quandary that a Photoshop image has no objects to select, but

Figure 2.7: Photoshop Magic Wand Group

Source: Adobe Photoshop 2021 PC Software

usually, weneed to select things we SEE as objects. But since these things are usually defined by their color and tonality, we have several selection tools that allow us to pick pixels that are of similar color and tonality and leave other ones alone.
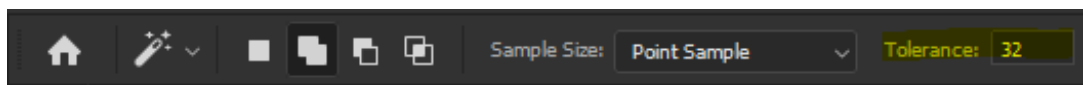
Figure 5.8: Photoshop Magic Wand Options Panel

Source: Adobe Photoshop 2021 PC Software

The tool with which we can best see how this works is the magic wand tool (associated with the quick selection tool). If the tolerance (in the option panel) is set to 1, this tool will only select the color (and tone) where you click. But in a photograph, one color usually doesn't go very far (zoom up close to what appears to be one color and you will see that the pixels are usually composed of several colors). If you set the tolerance to a higher number you will see that the higher

the number, the more pixels close to that color will be selected. Checking the box labeled 'contiguous' is usually a good idea since it will limit the selection to those pixels which touch each other, rather than any pixel in the image that happens to be close in color.

Click around your image changing tolerances to see how this works. As in most Adobe number boxes, you need to hit the enter key after you enter the number. You will also notice that making any selection deselects your last selection. If you would like to add to your selection click on the second box at the left of the options panel (or hold shift), and if you would like to subtract from your selection choose the third box (or hold down the alt key). If you would like your selection to be a little smoothed at the edges, then click the option labeled 'anti-alias'. Whenever you have a selection in Photoshop, any action you do will only effect that selection. Choose the brush tool and paint over the selection. Now change the (brush options) mode from 'normal' to 'color' in the pull-down menu— the brush will only change the color within the selection, not the tonality (darkness). Remember to set the mode back to 'normal' when you are done. Copy your selection using the move tool and hold down the alt key while you drag it to see how that works. When you are finished with your selection, go to Select / Deselect.

Figure 5.9: Photoshop Quick Selection Action
Source: Adobe Photoshop 2021 PC Software

1.4.3   Quick Selection Tool

The quick selection tool is probably the most useful. With this tool choose a brush size in the options panel, and 'paint in' your selection. The tool will attempt to find the line where colors change and conform to that line. If the selection goes beyond where you want it to, click in the options panel on the icon with the brush and the minus symbol to paint the selection back out (or just hold down the alt key while painting), then go back to the plus icon (or hold shift) to add it back in if you need to. By going back and forth like this you are teaching Photoshop what the object you are selecting looks like.

Figure 5.10: Photoshop Quick selection options bar and Group
Source: Adobe Photoshop 2021 PC Software

2.4.4   Lasso Tool

The lasso tool is one of the crudest selection tools, but also one of the quickest. This tool doesn't look at the colors and tones in an image but just selects along the line that you draw with it. The magnetic lasso tool does much the same thing but attempts to 'snap' to color changes close to where you are drawing.

Figure 5.11: Photoshop Lasso Tool Group
Source: Adobe Photoshop 2021 PC Software

2.4.5   Crop Tool

While not exactly a selection tool, the crop tool is worth explaining here. Basically, you just draw a box around the part of the image you would like to keep and hit the return key. The outside parts of the image are consigned to the ether (gone). In the options panel, you can also size your image while cropping it, which is more useful to do after we learn about sizing images.
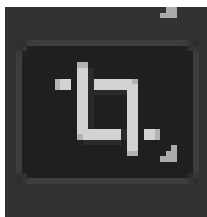
Figure 5.12: Photoshop Crop tool

Source: Adobe Photoshop 2021 PC Software

2.4.6 Brush Tool

Let's treat Photoshop as a painting program for a little while. Choose the first brush tool (don't use the brush tool with the circle and arrow). Now look at the options panel, which is the horizontal ribbon over the top of the window. Like Illustrator, this top ribbon changes according to the tool you have chosen, but unlike Illustrator, it is the only way to make some settings for the tool you have selected (in this case the paintbrush).
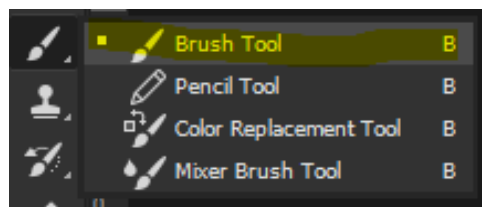
Figure 5.13: Photoshop Brush tool Group

Source: Adobe Photoshop 2021 PC Software

Many of the options are the same for different tools, so let's look at these in detail. The most important options are in the second box on the left. Clicking on this will give you a pop-up menu that allows you to change the size of your brush (let's set it on 125 pixels), the hardness (or fuzziness) of your brush (set it to 5%), and the shape of your brush (leave it a circle). Now set the mode of your brush to 'Normal'. The mode determines how the color is applied. The opacity and flow of the brush is how dark your paintbrush will paint. 100% on both is good for now. Paint a few lines, then change the size and hardness of your brush and paint a few more lines.

Figure 5.14: Photoshop Brush tool Panel

Source: Adobe Photoshop 2021 PC Software
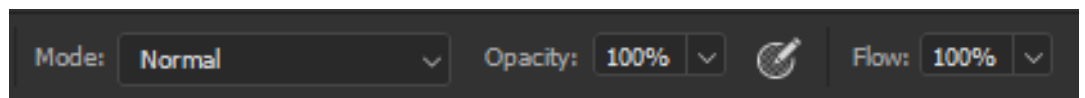
Figure 5.15: Photoshop Brush tool Options Panel

Source: Adobe Photoshop 2021 PC Software

2.4.7   Clone Stamp Tool

With all of the editing tools, if you have a selection, the tool only works within that selection. So let's make sure we do not have a selection by going to Select / Deselect. Choose the clone stamp tool (also called the rubber stamp tool). What the stamp tool does is take information from one area of the image and paint it on another area. First, while holding down the alt key, click on the area you want to take from. This sets the source. Now with no key held down click where you want to paint and start painting. This does two things: First, it sets your destination (relative to your source) and secondly, it starts painting. If your brush is too big or too small, change the size (and hardness) in the options panel. Once you set the destination with that first click, the source and the destination are locked together until you set another source. Experiment with this. If you have two images open (or more than one layer in one image) in Photoshop you can set your

Figure 5.16: Photoshop Clone Stamp tool

Source: Adobe Photoshop 2021 PC Software

source at one image or layer and your destination at another. The clone stamp tool is a very good way to not only put another eye on your friends' foreheads but also to clean up parts of images, such as wires in the sky, trash on the grass, or ex-boss in the photo.

2.4.8 Type Tool
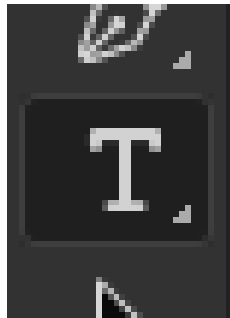
Figure 5.17: Photoshop Type tool

Source: Adobe Photoshop 2021 PC Software

The type tool is one tool you might find useful. With an image open in Photoshop, choose the type tool and look at the options panel. Here you can change the size of the type (pixels is usually the unit you want to use here), the color of the type, and other things. You can also open the character and paragraph panels here to have more options. By clicking and typing or by dragging a box and typing, make a word or two, and you will notice that a new type layer is created in the layers panel. A type layer in Photoshop behaves in many ways like any other layer. You can use the transform commands, move the layer's stacking order, etcetera. It is different, however, in that the type is still typed, and it can be edited. Click on a layer other than the type layer to deselect it. Then double-click on the type layer's icon in the layer panel. The text will be highlighted, your tool will change to the type tool and you can edit the text.

At this point, the text is still text and not pixels, so there are limited ways of dealing with the text in combination with your image. For instance, you cannot make area selections of your text like you have with other images. To make the text pixels and make the layer behave exactly like any other layer, go to Layer / Rasterize / Type. You can now no longer edit the text, but it is now a true Photoshop image. Since the type is now in pixels, it will have jagged edges if the pixels are not small enough. And since type naturally has much harder edges than a photograph or other illustration, these pixels will still show even when they are very small.

2.5   Image Adjustment in Photoshop

Perhaps the most basic and commonly used Photoshop techniques are adjusting the brightness, contrast, and color of images. With any image you work on you should at least consider the possibilities of tweaking these. With an open document, go to Image Adjust / Brightness / Contrast. With preview selected, adjust your image. If you have a selection it will only work in the area of the selection, but if you have everything selected or nothing selected your entire image will be adjusted. A more accurate and flexible alternative to brightness/contrast is to go to Image / Adjust / Levels. In the main window of this panel, there is what looks like a mountain(s). This is called a histogram, and it is a map of the different tones in your image. At the left are the darker areas, and at the right are the lighter areas. The height of the mountain is how many pixels there are of a certain tone. By dragging the small triangle sliders directly below the histogram you can 'remap' the way these tones look. Drag the right slider to make the light areas lighter, and drag the left slider

Figure 5.18: Photoshop Color Balance, Brightness/Contrast & Levels Panels

Source: Adobe Photoshop 2021 PC Software

to make the dark areas darker. Generally, you first put the triangles near the bottom of the mountains. After you do this, drag the middle slider (called the gamma) back and forth until the image looks good (you may have to go back and tweak the other sliders after you do this). In all Photoshop requester boxes click 'Preview' on so that you can see the results as you adjust. To adjust the colors of an image, go to Image / Adjust / Color Balance. Even though there are only three colors you adjust directly, these are all that is needed to adjust all the colors in your image. Notice that there is no way to make an image more yellow and bluer at the same time. These colors are opposites. Remember that if you would like to change only one part of your image, make a selection first.

2.5.1 Sizing Images for the Screen
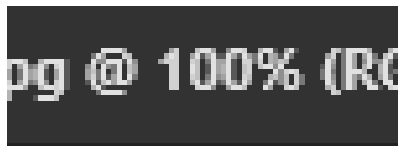
Figure 5.19: Photoshop Document Properties bar

Source: Adobe Photoshop 2021

At the top of your document window, you will see a percentage. At 100% your image is the size it will appear if saved and viewed in almost any other application destined for the computer screen, including web browsers, emails, and presentations. To adjust this image size for the screen, go to Image / Image Size. For screen viewing we are only concerned with the pixel dimensions—it does not matter at all what the inch or other size is, since this refers only to printed documents. You should always make sure the proportions are locked (see yellow highlight). Without constraining proportions your image will stretch and distort. If you
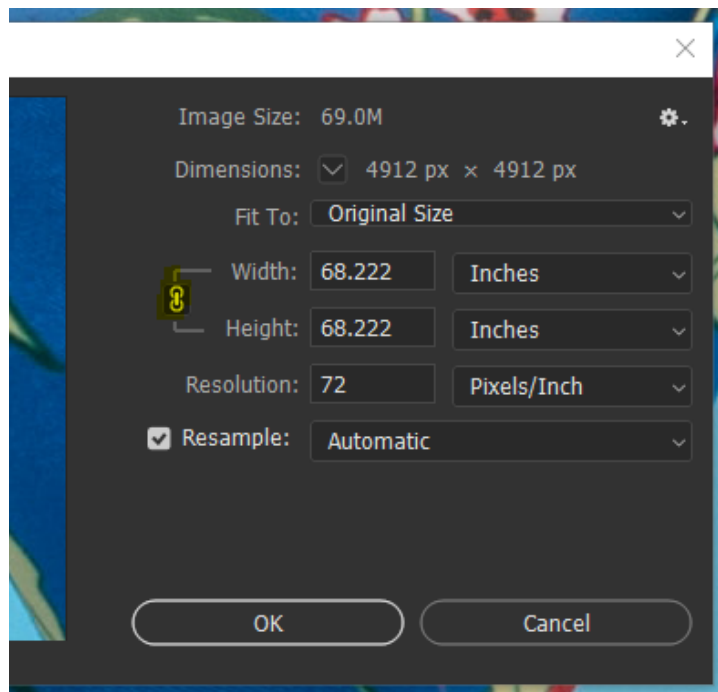
Figure 5.20: Photoshop Pixel Dimensions Panel

Source: Adobe Photoshop 2021

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do need a long rectangle from a square image, go back to the crop tool. If that doesn't work, find a new image!

Resample is a fancy way of saying 'change the number of pixels', so without this checked we wouldn't be able to do what we need to (check it). Now change either the width or the height of the pixel dimensions. If your resulting image is too large at 100%, undo your image size and enter a smaller number. You have to get used to pixels as a measurement. Screens have different sizes and resolutions, so inches or other measurement units don't apply when talking about screens. A standard small screen is 1024 pixels wide by 768 pixels high.

Adding pixels to an image is almost always a very bad idea. Think of it this way: if you had an image that was 5 pixels wide and 5 pixels high, then you would have a total of 25 colored squares – maybe only enough information to convey a rough letter or number, but not much else. Now imagine scaling this image to 500 pixels wide and high. There is no place for Photoshop to get more information, so it would be stuck with very little information in the original image. And since it would be bigger, it would look worse! Just like spiders. The same thing happens whenever you add pixels to an image. So don't.

2.5.2 Saving an Image
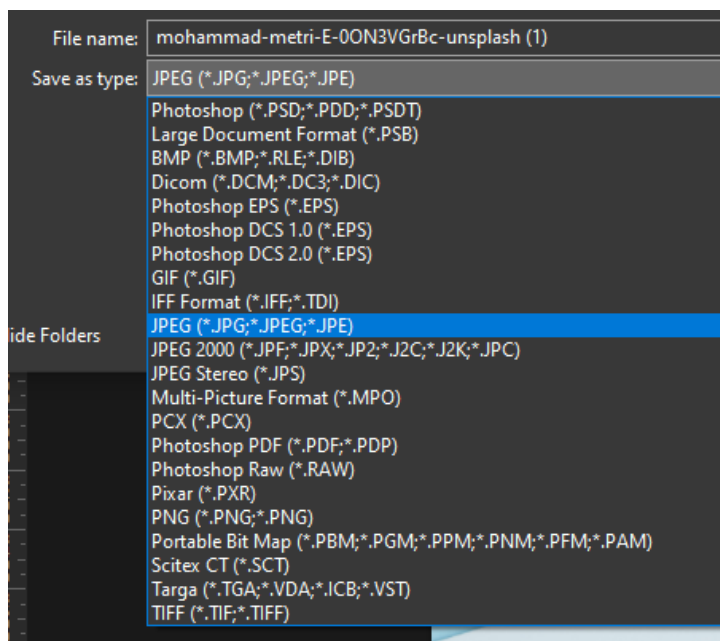
Figure 5.21: Photoshop "Save As" drop-down options

Source: Adobe Photoshop 2021

When you save an image you opened from somewhere else, go to Image / Save As... You should save your image in one of two formats: Photoshop or JPEG (in the format box choose the shortest name of either option). Photoshop is the best format to save in if you want to retain everything about your image. It will save your layers and every bit of quality you have. If you want to send your image to someone

else, then JPEG is probably the best option. These are small files that send quickly, and they can be opened in any application that accepts images, including email, presentation, and web applications. The downside is that JPEG compresses the information in the image, so you lose some quality, and you also lose any layers you may have.

Also, when naming an image, keep the file format suffix that Photoshop adds (.jpg or .psd). Changing this suffix or taking it off can lead to problems.

2.5.3   Photoshop Actions

Often when editing images you need to perform the same techniques on many images. For example, you have a hundred images from an event, and even though only a few will ultimately be used, to speed up the process, you can 'record' what you do with one image and 'play it back on the other images by using the actions panel. With an image open in Photoshop, open the actions panel (or go to Window / Actions) and in its menu choose one of the pre-made actions in 'image effects'. Run a couple of
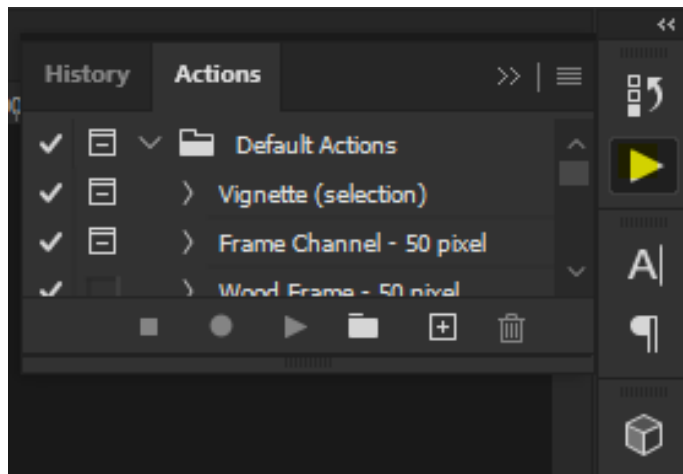
Figure 5.22: Photoshop Actions Panel

Source: Adobe Photoshop 2021

these actions on an image by clicking the play button at the bottom of the panel. To record your actions, click the new action button next to the trash can. Name your action, then do some things to your image, like changing the image size or the levels. When you are done, click on the stop square next to the red record button. Now open a new image and 'play' your action with it. Actions are limited in the way they can record mouse movements across an image, so they won't record things like brush strokes, but they are a huge time-saver for other image operations. Many times all of the photographs taken at the same event will need similar image adjustments. Actions can reduce the time needed to process these significantly. You can even playback action on a folder of images by going to File / Automate / Batch. Of course, the help menu can give you all the information you need to do this.

2.6   SUMMARY

Adobe Photoshop is a bitmap application used for just about anything with continuous ranges of tones like photographs. Adobe Photoshop is just a tool. It is the easy part of the design. The hard part is how to best use it to make designs that communicate well. This is what this Unit attempts have been made to lead you through the basic features of the applications so that you can also learn the more important design aspect with minimum frustration. The Photoshop and CorelDRAW interface provides no mysteries, but only things you have not discovered yet. So if you read up and study this Unit, you'll be that much more ahead when you decide to paint and retouch. This unit has intended to work the element of discovery into a creative process: you pick up the knowledge of how a tool or feature works, you discover several purposes for the tool, and finally, you take your new-found knowledge and apply it—to realize an idea on paper. Developing skill in any field including design comes with time and practice. If you take the time, this unit will provide you with the other ingredients needed so that your footing is sound in a new application, and your bearings are based first on knowledge and eventually on instincts

SELF-ASSESSMENT EXERCISES (SAEs)

1. Adobe Photoshop is a tool for design use in various contexts. Highlight these tools.

2.7 Glossary

Lasso tool: Used for the creation of freeform selection areas.

Line tool: Used to draw straight lines

Pencil tool: Used to paint strokes of different sizes and shapes with hard edges.

Ruler tools: Used to measure the distance between selected objects.

Sharpen: A filter that sharpens up the edges of an image by definition enhancement.

2.8 REFERENCES/FURTHER READING

Ikekeonwu, G. A. M & Oguike, O. E. (2017). Computer Applications. Department of Enugu: Computer Science, University of Nigeria, Nsukka. 121-142.

Payne T. (2019), *Adobe CC Design Basics*

2.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISES (SAEs)

Self-assessment Exercise: Adobe Photoshop is a tool for design use in various contexts. Highlight these tools.

Self-assessment Exercise: The following are tools available to Adobe Photoshop user depending on the context:

1) Marque
2) Magic word
3) Lasso
4) Crop
5) Brush
6) Clone Stamp and
7) Types tools

;

UNIT 3: INTRODUCTION TO CORELDRAW

3.1   Introduction

3.1   INTRODUCTION

This unit aims to introduce students to the CorelDraw application package and get them to understand how to work paged documents, create shapes, arrange and organise objects.

3.2   LEARNING OUTCOMES

After going through this Unit, students would be able to:

● Define CorelDraw

● Work with paged documents

● Create basic shapes and apply transformation

● Arrange and organise objects

● Work with texts in a CorelDraw environment

3.3   Definition and Overview

CorelDraw is a software program for editing vector graphics. Vector graphics are created in graphics packages and consist of objects. Each object can be edited separately, meaning that the shape, colour, size, and position can be changed.CorelDRAW allows users to do things like adding special effects such as borders to images, in addition to allowing for contrast adjustment, colour balancing and more. One of the handy features of the software is that it can also work with multiple layers and multiple pages.

CorelDraw doesn't just offer drawing tools, you also have filters and panels (dockers). It offers everything from color samples to the Align and Distributes

object feature. You'll find effects for bitmap imports, typography tools for Desktop Publishing, and more.

To make the most of your valuable time, there are a lot of ways to perform just about everything in CorelDRAW—and there are hard ways and easy ways. Guess which way you'll learn in this chapter? There aren't secrets or mysteries to unravel with CorelDRAW.There's just stuff you might not be prepared to find or to use. Let's get down to some serious exploration of the fun features of this new version right now.

The CorelDraw Workspace

Once CorelDRAW has loaded and you've specified a default document, the sheer wealth of options and tools can make one feel more than a little intimidated and lost. Suppose you want to change the page size or hide all the guides you dragged from the rulers. Or maybe you need a more detailed explanation of the B-Spline tool as you're trying to use it. You can refine, redefine, and customize your document and your view of the document with a few well-placed clicks. Please note that the quickest way to access all options for the drawing page is by double-clicking the page shadow with the Pick tool.
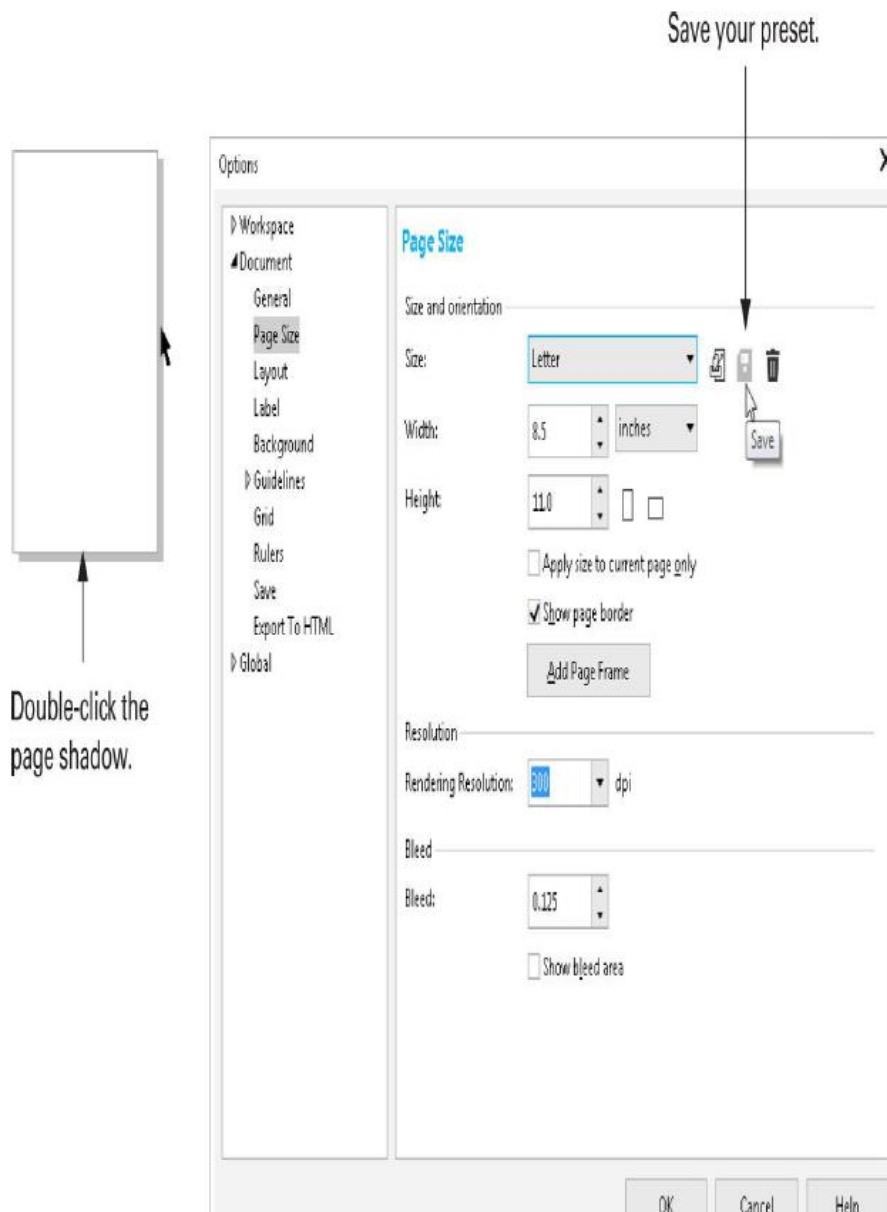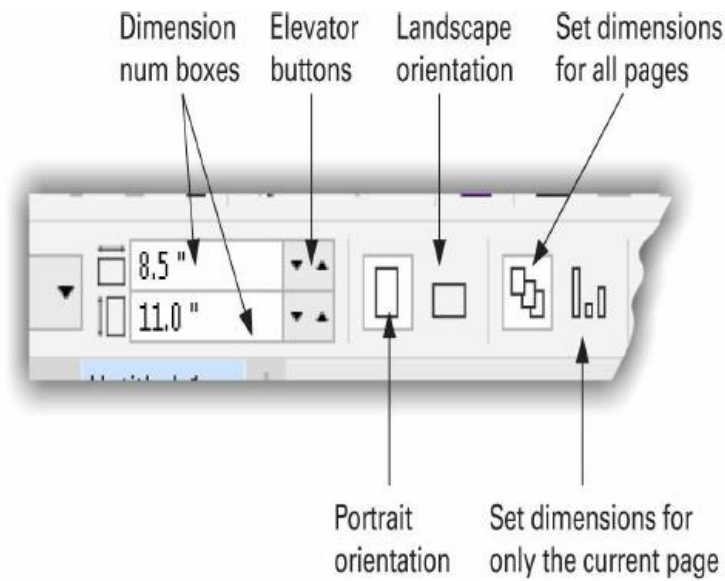
Figure 5.23: CorelDraw Document Preset
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 84)
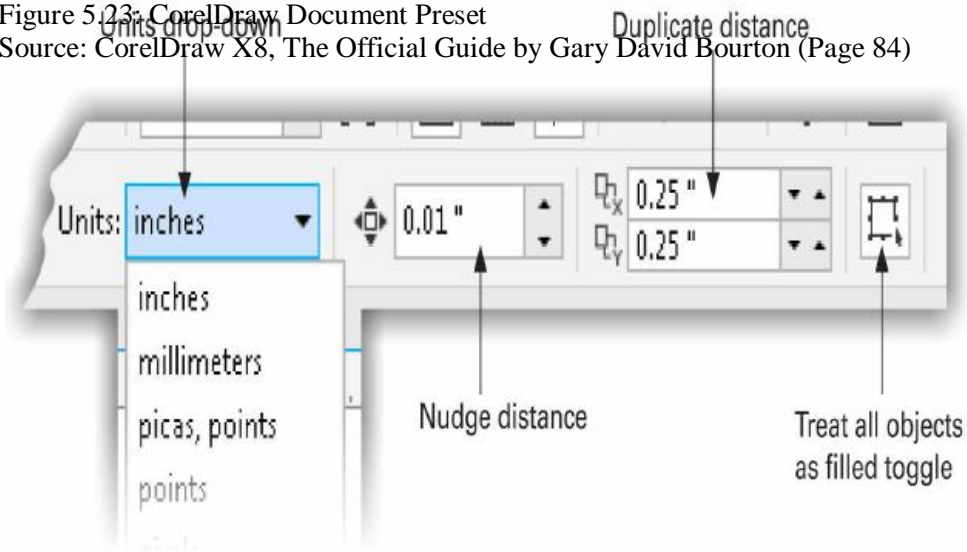
Figure 5.24: CorelDraw Property Bar
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 87)

Dimension number boxes: These are numerical entry fields for the units you've selected for the current page size. Although an abbreviation for the units follows the numerical entry, you don't have to type, for example, the double-prime character (") denoting inches to enter a value—CorelDRAW puts it in there after you put the cursor in a different field because the software understands you've specified inches when you created a new document. Therefore, you can change the page size at any time in a document merely by typing in a new value. Only

when you're done resetting the values should you press ENTER to confirm the current entries.

Elevator buttons: Most of the time in CorelDRAW, where there's a num box, there are elevator buttons directly to the right of the fields. You click the up button to increase the current value and click the down button to decrease the current value in the corresponding box. For the Dimension boxes, the value (in inches) for increasing or decreasing the amount is 0.05".

If you put your cursor directly between the up and down elevator buttons on any of these "combo boxes" (a box that accepts number entry and clicking/dragging on elevator buttons), you'll see that the cursor changes to a two-way arrow with a divider in between the arrows. Drag up or down to significantly change the value of a nudge, a page dimension, or any value box that features elevator buttons.

Portrait and Landscape orientations: With a simple click of either of these buttons, you rotate your page by 90°. A wide page becomes a tall one, and vice versa. The portrait is tall and the landscape is wide.

Set dimensions for all pages: You should only click this button after you've sent new page size. Then, all the pages in your multipage document are identical in orientation and size.

Set dimensions for only the current page: If you've made a different sized page, perhaps for printing scrapbook content, and want only this page uniquely sized, click this button while viewing the page. All other pages will remain the same size.

Units drop-down: Clicking this button reveals a drop-down list of units, from which you change all features that display and use units. For example, if your current unit of measurement in CorelDRAW is inches, and for some reason, you choose Feet from the Units drop-down, a standard U.S. Letter page size will be displayed as .917' wide instead of 11". Similarly, if you had a nudge distance set on the Property Bar of 1", the distance displayed will be the same absolute value, but it will read 0.083' now.

Nudge distance: The keyboard ARROW KEYS can be used to move a selected object by a predefined distance, called the nudge distance, although you can also shove, push, and propel a selected shape, depending on the distance you specify in this box.

Alternatively, you can use the elevator buttons to nudge an object up, down, and across in increasing increments of 0.05" per ARROW KEY hit. This is a very useful feature for moving an object out of the way and then returning it to its original position when you've finished editing some other object.

While Nudging, Use CTRL while you press a nudge ARROW KEY to perform a micro-nudge, a fraction of the nudge distance determined by what you specify in the Options | Workspace | Document | Rulers tab. If you hold SHIFT, this is

called super-nudging, and it's a multiple of the nudge distance, again, set in the Rulers tab of the Options dialog.

Modifier Keys: The modifier keys CTRL, ALT, and SHIFT are used by many programs to extend a command; even the simple Windows Copy command uses the modifier key CTRL, for CTRL-C. In CorelDRAW, you should learn to reflexively reach for a modifier key when using a tool to change its function. Although no two tools are the same in CorelDRAW, the most common functions of these three modifier keys are as follows:

• **CTRL** An abbreviation for "Control," you should think of this term as similar to "Constrain." For example, when using the Rectangle tool, if you hold CTRL while you drag, it constrains the dimensions of the object to a perfect square. Similarly, if you put an object into Rotate/Skew mode (you click with the Pick tool on an object that's already selected) and then hold CTRL while you drag on a rotation handle, the rotation is constrained to the number of degrees you've specified in Options | Workspace | Edit.

You can also constrain node control handles while you're drawing by holding CTRL. This is useful for creating objects whose angles at nodes are all identical.

• **ALT** You can think of this key as offering Alt(alternatives) to the basic command you're executing or the tool you're using. For example, when dragging with the Bézier tool, you usually wind up with curved path segments, but if you hold ALT while click-dragging, a straight line segment is a result. Similarly, the Eraser tool switches from freehand style to straight lines when you click a start point and then hold ALT and click your endpoint. ALT is not as common a modifier key as CTRL or SHIFT, but the point is that when you believe a tool or command has more than one way to work, you try out these three keys before stopping your work to find help.

• **SHIFT** can be thought of as "Add to." For example, if you hold SHIFT while using the Eraser tool, the nib becomes larger. When drawing shapes with object tools such as the Polygon, Ellipse, and Rectangle tools (and others), holding SHIFT before you click-drag draw the object from its center outward instead of from the corner.

And remember that modifiers can also be used in combination. If you hold CTRL-SHIFT while you click-drag a rectangle, the rectangle is drawn from its center outward, and it is also constrained to a square at the same time.

Right-Click Menu: It's called different names by different companies, but for ages, Windows has supported a pop-up menu called the context menu or contextual menu. What it does is a lot more important than what it's called! Contextual means that the menu commands on this pop-up menu change, depending on which tool is currently chosen. As an exercise, choose the Pick tool and then right-click over an empty area of the drawing page. The menu gives you commands for undoing the last edit, creating a new object, and other commands specific to helping you out when the Pick tool is chosen and you right-click over an empty page area, not an object or an effect. These are pure commands useful when you use the Pick tool.

Particularly important when the context menu is used in combination with the Shape tool, you can turn selected nodes and path segments from straight and sharp to smooth and curved, respectively.

Dropping a Copy of a Selected Object
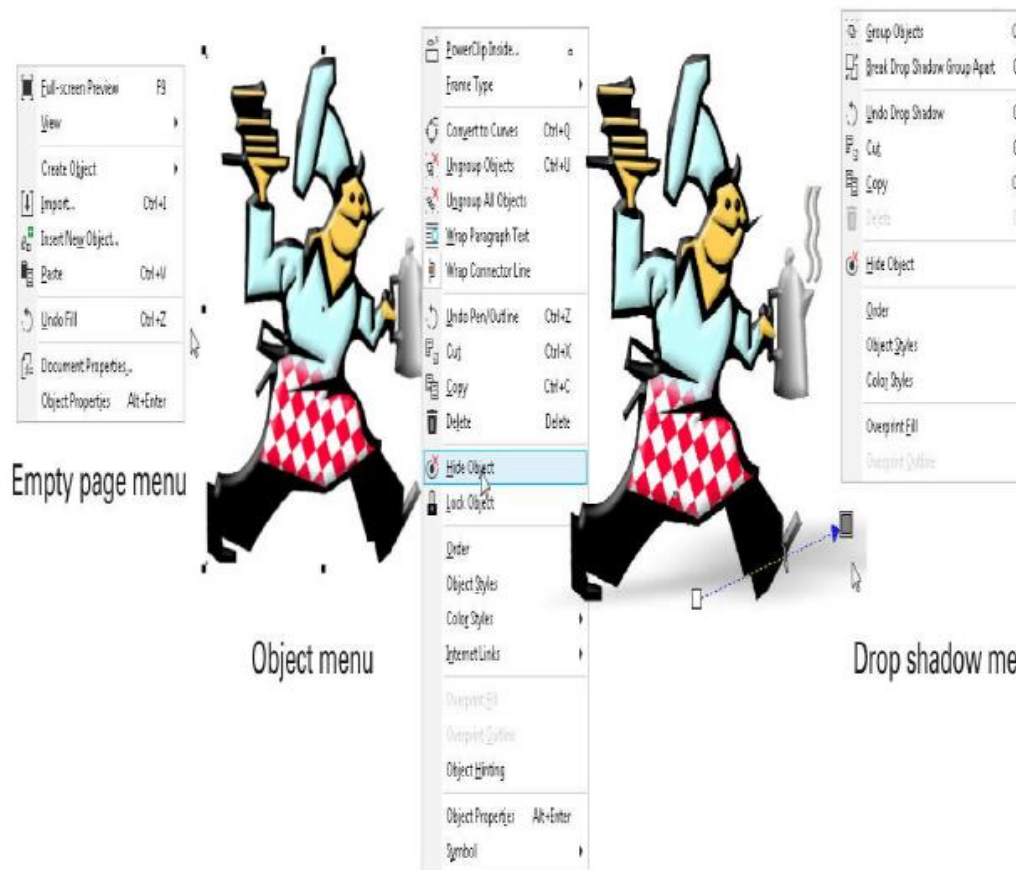
Figure 5.25: CorelDraw Right-Click Menus
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 97)

When you're using the Pick tool, left-button dragging moves a selected object, but right-button dragging can do something entirely different, especially when you use the right-button drag in combination with the left button, other keys, and the SPACEBAR. Here are the three methods for making a copy—and several copies—without using the Copy and Paste commands, the Duplicate command, or the Step and Repeat command:

• **Right-click and then drag, release, and use the pop-up menu:** If you're just getting the hang of using a point-and-click device, this is the most surefire way to quickly copy an object. See the following illustration.
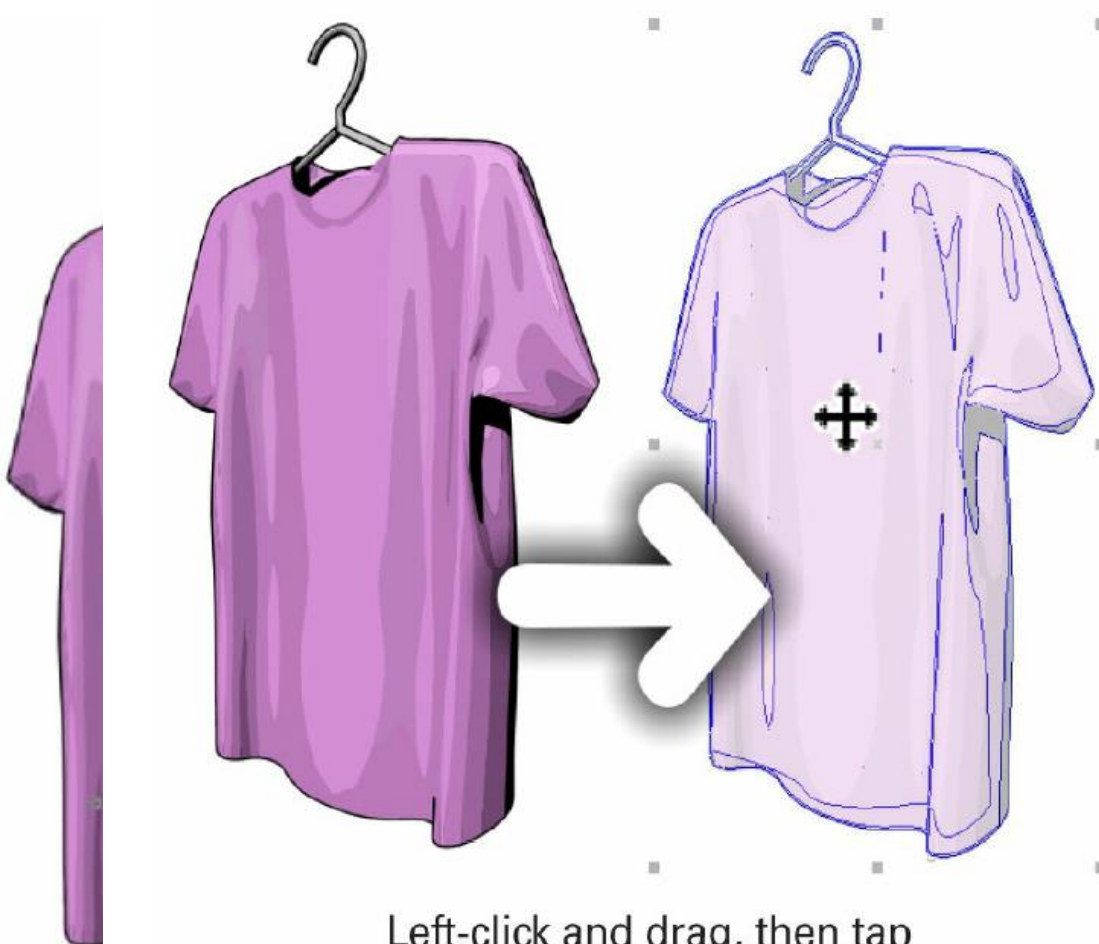
Left-click and drag, then tap both buttons and release.

Right-click and drag, then release the button to reveal a pop-up menu.

Figure 5.26: CorelDraw Mouse duplicating action
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 99)

Left-button drag. Every time you press SPACEBAR, a duplicate is placed.

Figure 5. 27: CorelDraw Mouse duplicating action with space bar
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 101)

Smart Panning and Zooming in   CorelDraw

Push the wheel while dragging to pan
the document view in the window.
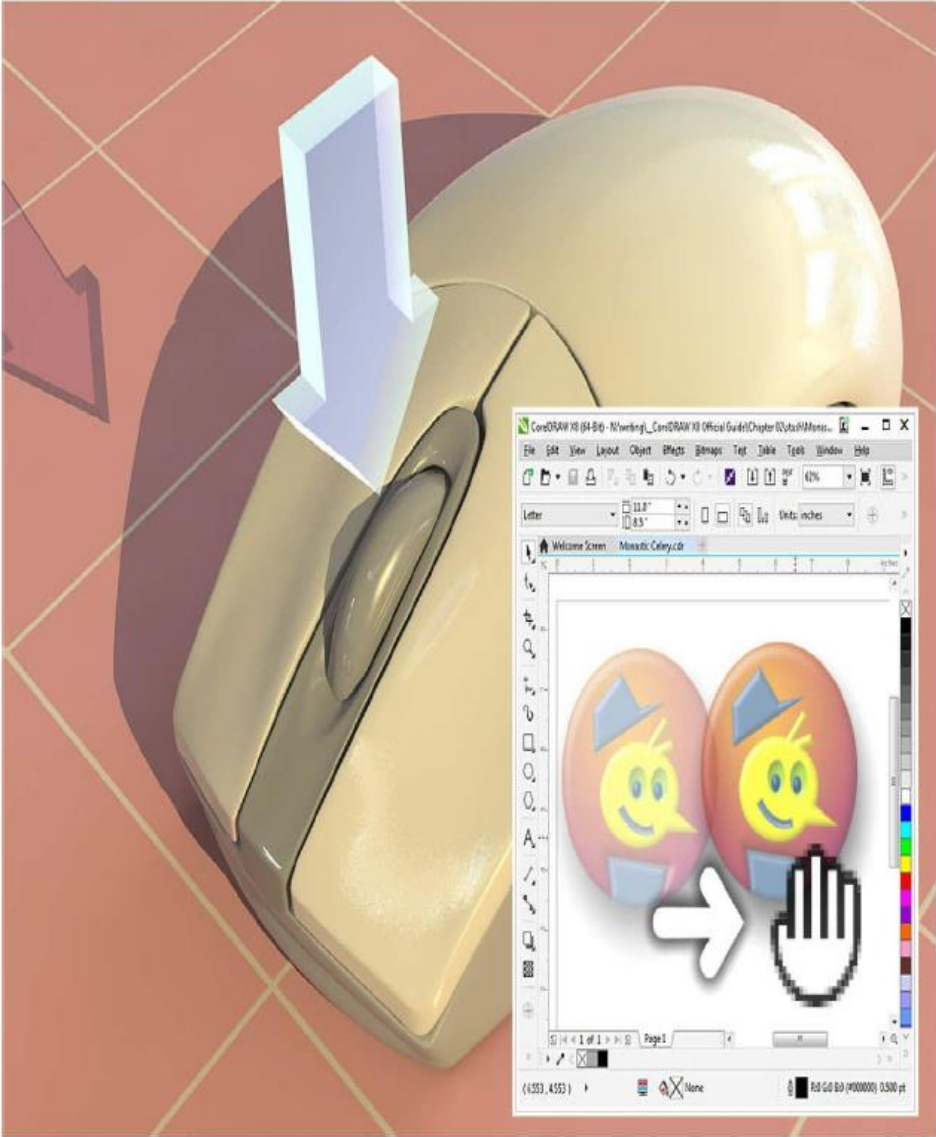
Push away from you to zoom in.

Pull toward you to zoom out.

Use the cursor to point to the zoom-in area.
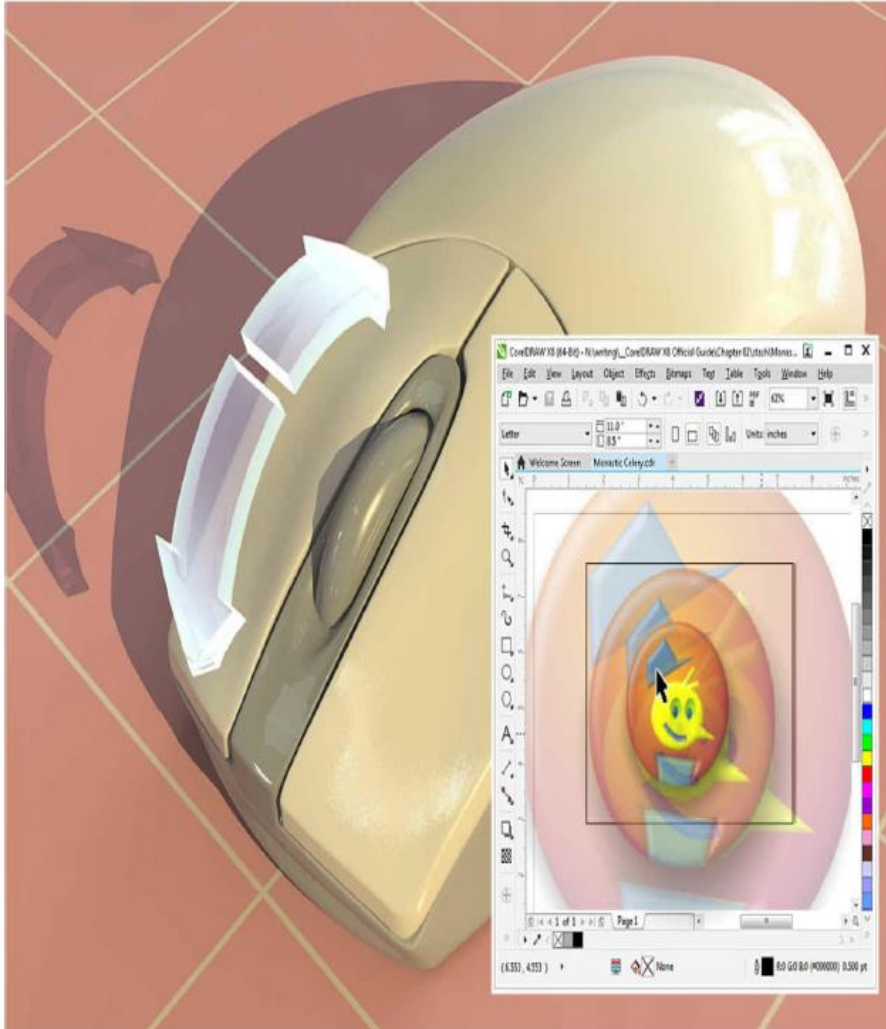
Figure 5.28: Zomming In & Out with mouse wheel in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 105)

The Standard Bar
The Standard Bar is a permanent screen element (unless you deliberately detach it and/or hide it); it always displays the same features regardless of which tool you choose.
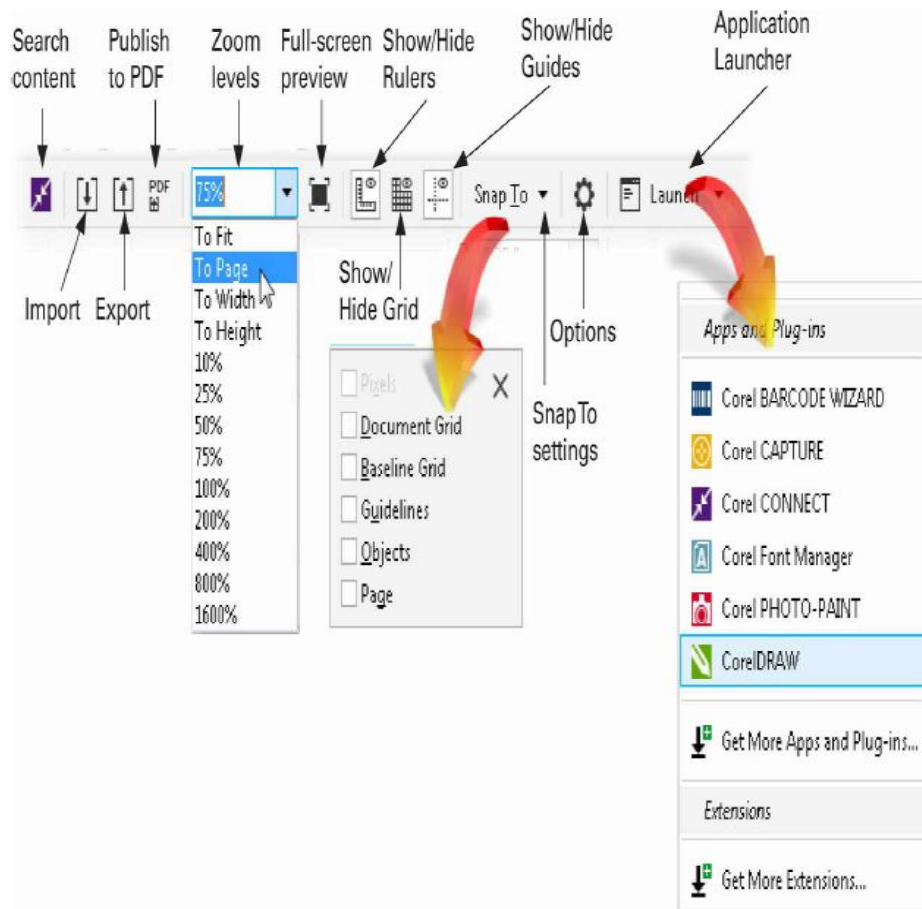
Figure 5.29: CorelDraw Standard Bar
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 107)

Import: If you're new to computer graphics, "Import," at least as far as CorelDRAW is concerned, means to bring a copy of something into the drawing window without the original being touched. This is not the same action as opening a CorelDRAW file, although you can import a CDR file. Both Open and Import commands are under the File menu.

Export: This is the opposite of importing something. Also, exporting is not the same as saving a file. CorelDRAW has extensive export filters—including exporting objects as typefaces. As an example, if you need a PNG file made from your Corel drawing, you can do so in the Export dialog, and you can choose a resolution and whether or not you want transparency supported. When you export, you're not sending your Corel artwork original anywhere; it's a copy, usually in a different file format, that is leaving the drawing window.

Publish to PDF: Corel sees the need for many graphic designers and Desktop Publishing professionals to quickly create a high-fidelity document for the web. You can choose Settings from the Publish to PDF box, or just click Save. Using

either option, you now have a time- and energy-saving button on the Standard Bar all the time.

Zoom levels: This is a combo box that offers preset resolutions, and you can also type in a custom value (and then press ENTER). 264,583% is the maximum value you can enter, and 1% is the minimum. You'd be hard-pressed to exceed those levels of magnification in your work, and at each extreme, it's very difficult to navigate and see objects.

Full-screen preview: Clicking this button removes the entire UI, and you are presented with your drawing at whatever magnification you had before clicking the button. This is a great feature for making a presentation and for taking uncluttered screen captures.
Although in full-screen preview you can see the printable page and its drop shadow, the guidelines, and the grid will not display. A click anywhere returns you to the UI and your work.

Show/Hide Rulers: This button toggles on and off the display of the rulers on the top and left of the drawing window border.

Show/Hide Grid: This toggles the visibility of the different grids on and off, although a grid can continue to "snap to" objects you move around, even if the grid is hidden. There are three types of grids in CorelDRAW, and you choose which one to hide and display via the View | Grid command. The Document grid is the default grid in all documents, and you can change its spacing and whether it appears as lines or dots through the Options | Document |Grid command. The Baseline grid has no line/dot options, but you can change its spacing and the color with which it displays. The Pixel grid is not visible until you've imported a bitmap—a pixel-based graphic—and View | Pixels is your current choice of viewing the page. You can set the color, the opacity of the Pixel grid, and whether it appears on screen after you've zoomed in more than 800 % — an unchangeable value, for reasons apparent when you're at 800 percent and all you can see is the grid!

Search Content: Clicking this button takes you to the Get More docker, also accessed by using the Window | Dockers menu. You can add content to your document or a tray.

Show/Hide Guides: This setting hides/shows any guidelines in a template or guides you've added to your document; this button has no effect, naturally, if there are no guidelines in your document. There is another way to hide guides if you have the Object Manager open. You click the Show/Hide eye icon for the Guides entry on the Object Manager list.

Snap To settings: This drop-down list offers a checkmark area to make each interface object magnetic ("sticky") or not, which is useful when you want to

enable the stickiness of the pixels in a photo you imported, or the guides, or the grid, or other objects. In general, you probably don't want any item enabled for "snapping to" if you're simply drawing things freehand and have no need for precision in creating nodes or moving objects.

Options: The Options dialog is the nerve center for customizing the way your documents behave and look, but also how CorelDRAW behaves and looks. This is probably the most important dialog you'll need for overriding default settings, and therefore this button is a welcome alternative to hunting for the command in the main menu

Application Launcher: This drop-down list affords access right within CorelDRAW to all the other modules in the Graphics Suite, including additional apps, extensions, and plug-ins for CorelDRAW and PHOTO-PAINT.

3.3.2 Working with Paged Documents

Setting Up Your Document Page

Every new file you create has its own set of page properties that have two attributes: physical properties and display preferences. The physical properties refer to the size, length, and color of each page as you'd define a physical page in the real world. Display preferences control how page values are viewed.

Control Page size and Orientation

If you've unchecked the Always Show The Welcome Screen At Launch check box, the default size of a new document is CorelDRAW's default, which might depend on the language version of CorelDRAW you use. For this U.S. author, it's U.S. Letter, 8 1/2" by 11", but this can be changed. The quickest route for document size change is through the Property Bar while the Pick tool—and no objects—are selected. The Property Bar features options for setting your page to standard and custom sizes as well as its orientation.
If you have a multipage document, the Property Bar also has ways to change all pages at once or only the currently visible page.
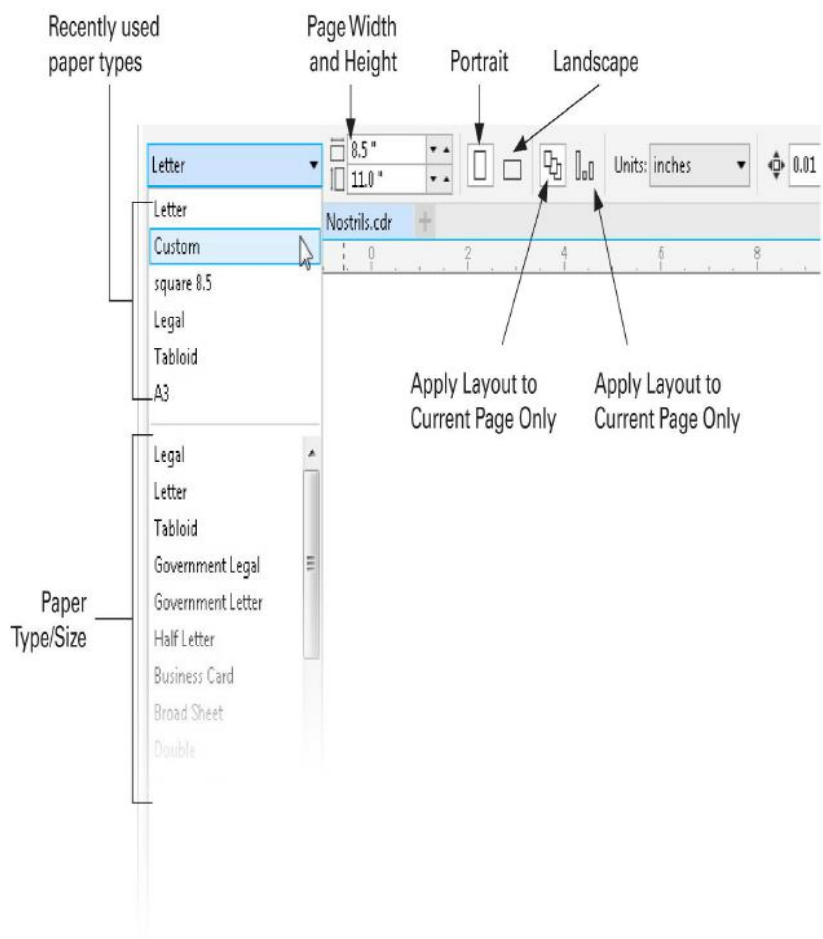
Figure 5.30: CorelDraw Property Bar
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 172)

Paper type / Size

The Paper Type/Size and orientation options control the format of your document. When you have a specific format for a design you need to print, the following sections cover the options available to you in CorelDRAW.

To make sure your CorelDRAW page matches the paper in your printer, clicking a Paper Type/Size option from the Property Bar is the quickest method. From the drop-down box, you can choose Letter, Legal, Tabloid, or other common sizes. Once you've made a selection, the dimensions are automatically entered as values in the Page Width and Height boxes on the Property Bar. If you have a limited need for different paper sizes, click the Edit This List button at the bottom of the drop-down list, and you can delete seldom-used sizes: with the preset highlighted, click the trash can icon in the Options dialog. Here's a list of your paper-type options; you'll surely find one or more that suit a specific need.

Page Width and Height: You are not limited to a page size that's the same as the paper in your printer; page width and height values can be freely adjusted to

match just about any paper size. For a custom page size, type-specific values directly into the Page Width and Height boxes and then press ENTER.

Landscape/Portrait orientation: Clicking either Portrait or Landscape on the Property Bar while using the Pick tool (with no objects selected) sets the page orientation. If the page width you enter is less than the page height entered, the orientation is automatically set to Portrait, and vice versa for Landscape. Changing from one orientation to the other automatically switches the values in the Page Width and Page Height fields.

All Pages/Current Page: You can create a document up to 999 pages long, with different pages set to any size or orientation. The All Pages and Current Page buttons operate in "either/or" fashion—like the orientation buttons—so you can set the page size either for all pages in your document at once (the default) or only for the current page. To set only the current page to be different from the others in your document, click the right of these two buttons on the Property Bar (directly to the left of the Units drop-down) and set your new page size and orientation as needed. Other pages in the document aren't resized when you choose this option.

3.4   Creating Basic Shapes and Applying Transformations

Using the Rectangle Tool and Property Bar
The Rectangle tool is simple enough to use, but it doesn't just create a four-sided, right-angled polygon—it creates a rectangle that has special properties in CorelDRAW. You'll find the Rectangle tool in the Toolbox; you can quickly select it by pressing the F6 shortcut key. Rectangle shapes offer you the option to apply corner "roundness," based on a percentage value. Roundness can be set either manually by dragging a corner with the Shape tool or by using the Property Bar Corner Roundness option available while a rectangle is selected. By default, you round all four corners equally and together. However, if you unlock the Edit Corners Together toggle button, you can manually enter different values for each of the four corners. There are several more features for changing the shape of a rectangle object that are reversible (no destructive changes are made) on the Property Bar.
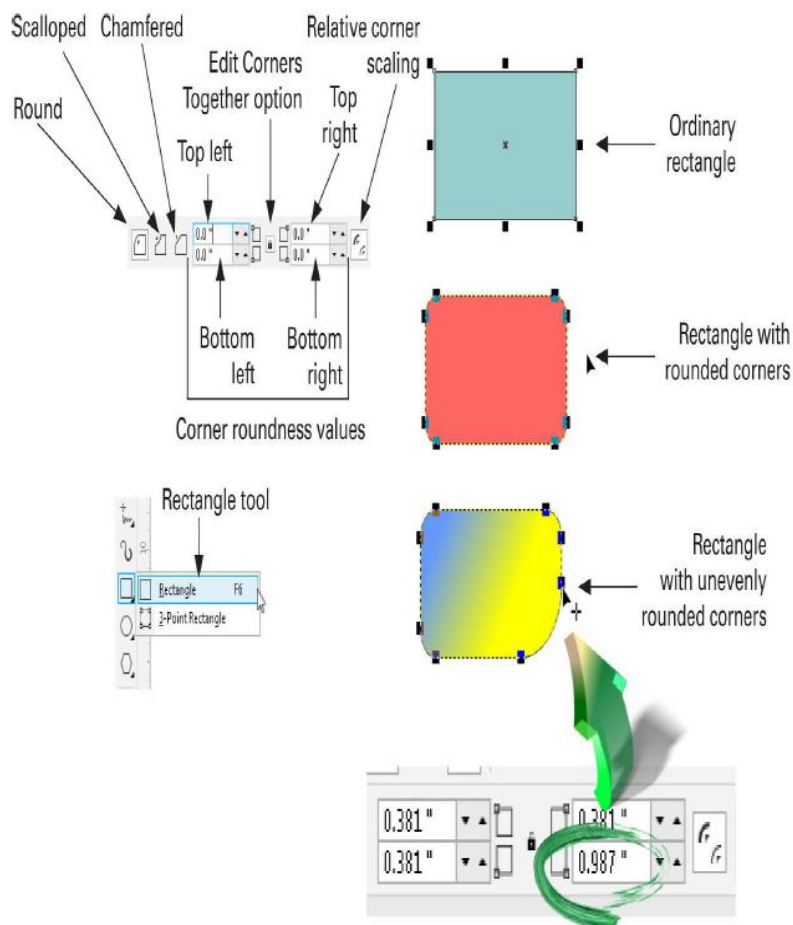
Figure 5.31: CorelDraw Rectangle tool usage
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 242)

Drawing a Rectangle

To create a rectangle, choose the Rectangle tool from the Toolbox and then click diagonal drag in any direction to define its corner positions. The act of click-dragging begins by defining the first two corners; as you drag, the corner positions can be redefined, depending on where your cursor is on the page. Then, before you release the mouse button, you've defined the position for the remaining two rectangle corners.
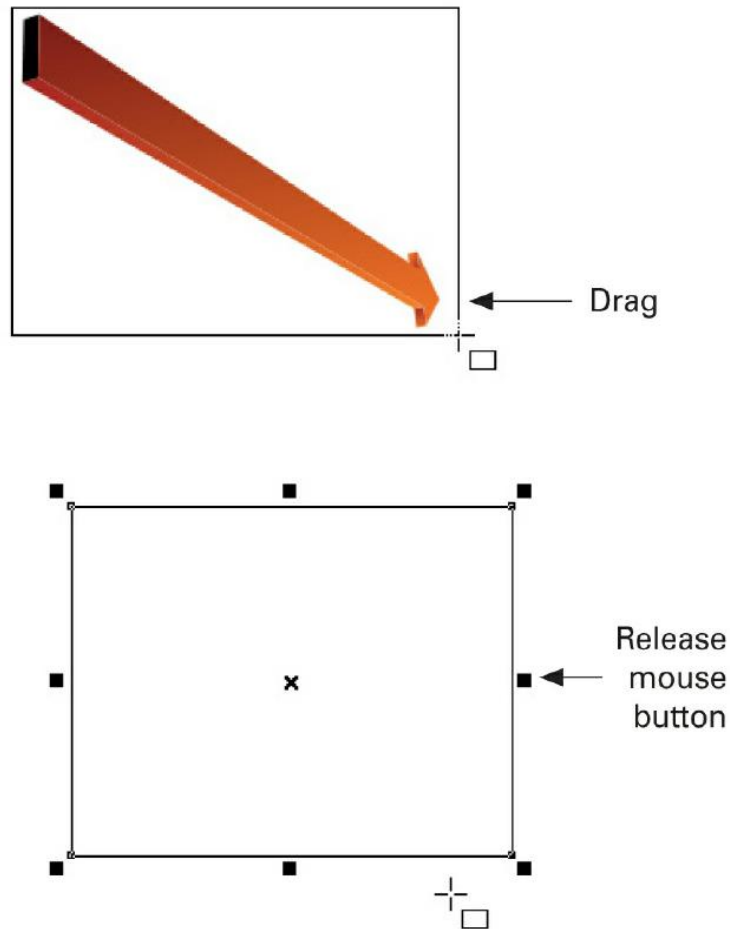
Figure 5.32: Drawing a rectangle in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 244)

While the Rectangle tool is selected, notice that the cursor is a crosshair with a small rectangle shape at its lower right. As you click-drag using the cursor, you'll also notice that the Status Bar and Property Bar show the coordinate, width, and height properties of your new object shape.

Setting Rectangle Corner Properties
Corner roundness is one of three different effects you can apply and dynamically edit when you're into rectangles. Corner Roundness, as well as the Scalloped and Chamfered corner styles, can be applied to a rectangle using a value of 0 to about one-half the overall length of one of the rectangle's sides. If you think about this, a 2" rectangle can't have more than a 1" rounded corner on each side! The Corner Roundness amount can be changed at any time, while the shape remains a native rectangle; that is, it has not been converted to curves. By typing

0 into any of the size boxes while the rectangle is selected, you remove the corner style. Corner Roundness, Scalloped, and Chamfered can be set uniformly for all corners (the default) or independently when the Edit Corners Together lock option is in the unlocked state.

While a rectangle is selected, use any of the following operations to change corner properties according to your needs:

• Click the type of corner style you want on the Property Bar and then either type in the size for the corner values or drag the elevator buttons up or down to adjust the size of the corners.

• Set your rectangle's corners manually, using the Shape tool, by first unlocking the Edit Corners Together toggle button and then CTRL-dragging any corner control point away from its corner (toward a side that makes up the rectangle). Enabling the Edit Corners Together option causes all corners to be rounded or scalloped in an equal amount by dragging any of the control points.

• Use the Object Properties docker; press ALT-ENTER, click the Rectangle icon to go to the Rectangle Properties tab on the docker, and then edit any property you so choose.
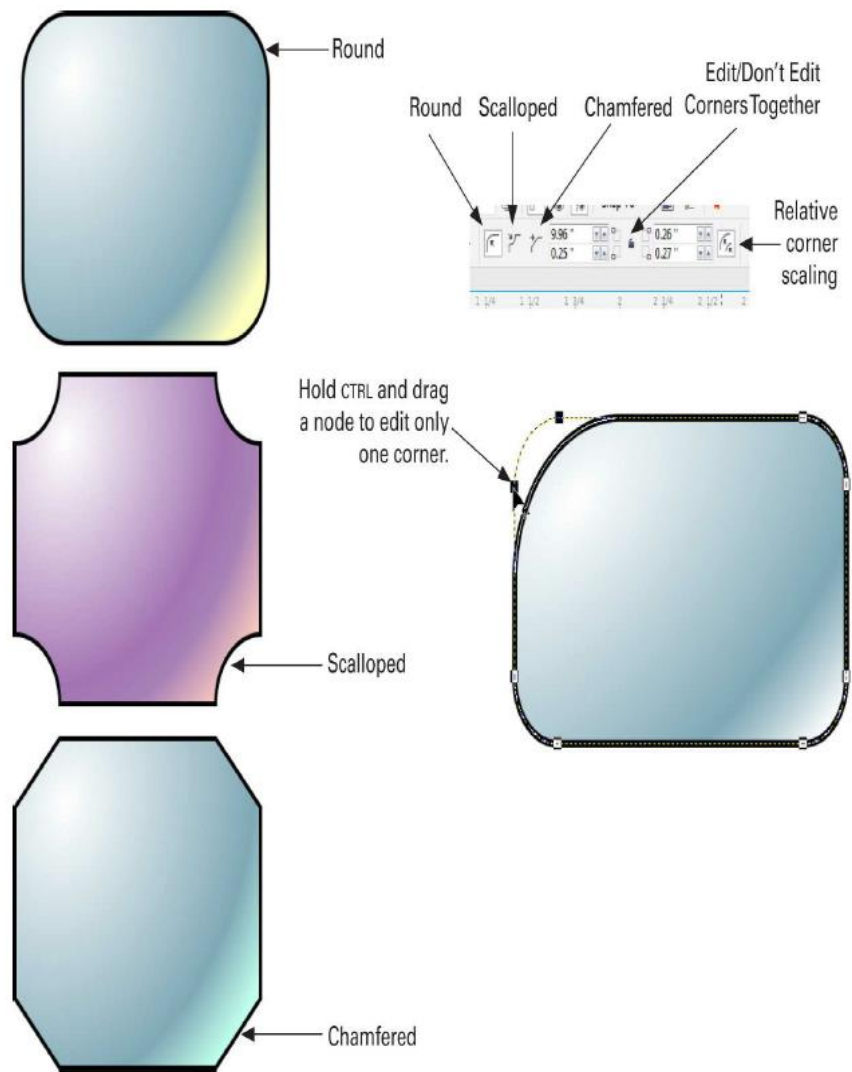
Figure 5.33: Creating corners in Rectangles in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 246)

Creating 3-Point Rectangles

If you want to create a rectangle and have it rotated all in one fell swoop, you can use the 3-Point Rectangle tool. You'll find it grouped with the Rectangle tool in the Toolbox. Using this tool, you can draw new rectangles at precise angles. The rectangle you create is a native rectangle shape, so you can round its corners and manipulate it as any other shape.
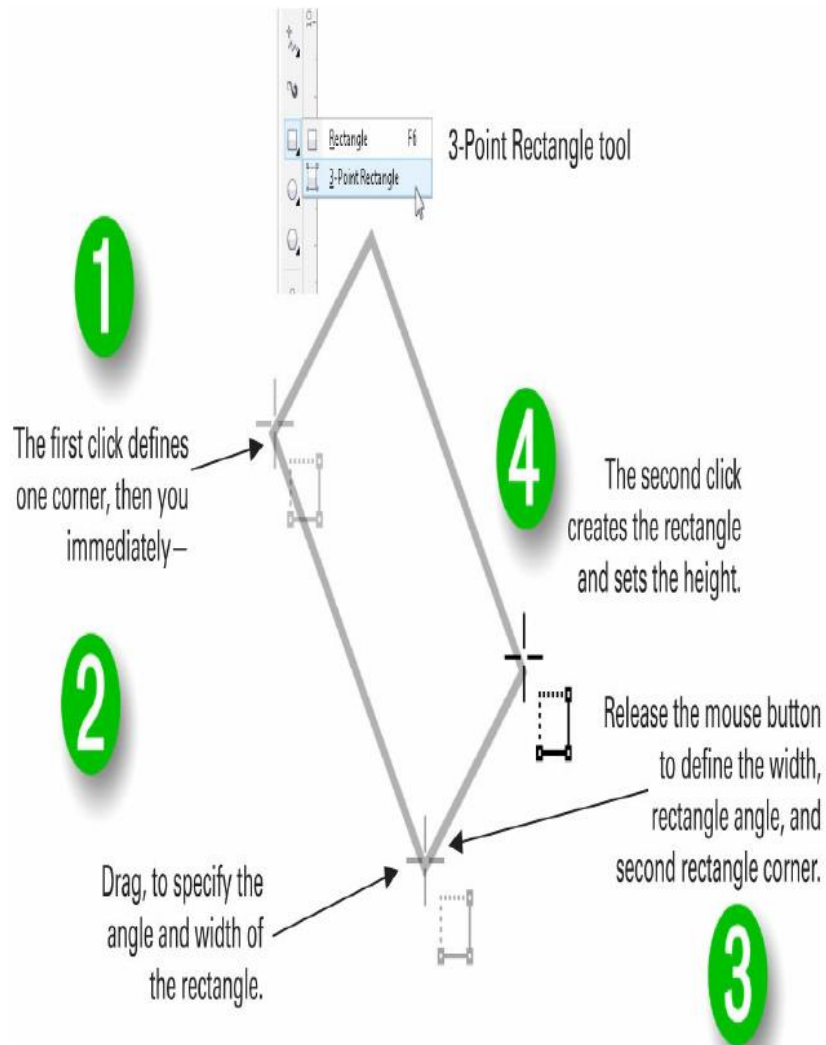
Figure 3.13: Using the 3-point rectangle tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 248)
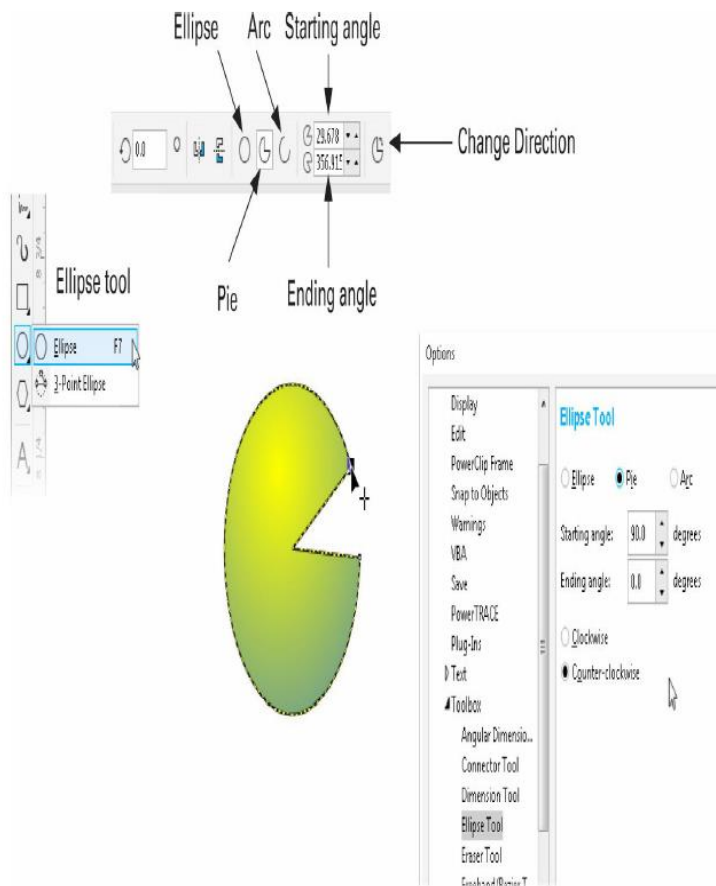
Figure 5.34: The Ellipse tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David
Bourton (Page 250)

To create a rectangle using the 3-Point Rectangle tool, you click-drag. Clicking sets the first point of the rectangle, and the subsequent distance you drag determines both the angle and length of the rectangle. As soon as you release the mouse button, you move your cursor (without clicking; this is called hovering) to determine the height of the rectangle. A final click seals the deal—you now have a rectangle. You can now round its corners and perform other operations on your work.

Using the Ellipse Tool and Property Bar

Ellipses are a staple of commercial design work, and essentially an ellipse is a circular shape that is not perfect. The Ellipse tool can be used to draw both circles and ellipses, but in CorelDRAW an ellipse shape has additional, special properties, just like a rectangle can be a round-cornered rectangle. Ellipse shapes can be edited to create dramatically new shapes while retaining their elliptical properties. In contrast, a shape you might draw that looks like an oval, using the Bézier tool, for example, will have no special properties and always remains an oval. Ellipses are easy enough to draw with the Ellipse tool and can be set in several different states: oval or circular closed paths, pie wedges, and arcs. Pie wedges are the portions of an ellipse—like a single slice of a pie, or conversely, a whole pie with a slice removed. Arc shapes are open paths, exactly like pie wedges, except the two straight line segments are missing.

To create an ellipse, choose the Ellipse tool from the Toolbox or press F7, followed by a click-drag in any direction. While the Ellipse tool is selected, the Property Bar shows ellipse-specific options that enable you to control the state of your new ellipse shape before or after it has been created. Choose Ellipse, Pie, or Arc. A complement is reserved for pie and arc shapes: for example, if you

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specify a 15° pie wedge, clicking the Change Direction icon changes the shape to a 345° wedge. Additionally, if you want a pie or arc to travel in a different path direction, double-click the Ellipse tool icon on the Toolbox, which takes you to Options, where you can choose a clockwise or counterclockwise path direction.

Using Polygons and the Property Bar

The Polygon tool (the shortcut is Y) is unique to the category of vector drawing software. Although competing applications offer a polygon tool, CorelDRAW's Polygon tool produces shapes that can be edited for making dynamic changes, just like CorelDRAW rectangles and ellipses. The shapes you create with the Polygon tool can have as few as three or as many as 500 points and sides; by default, all polygon sides are straight paths. You'll find the Polygon tool, together with the Star, Complex Star, and other group tools. While the Polygon tool is selected, the Property Bar offers the number of sides for the polygon you'll draw.

Drawing and Editing Polygons

Most of the trick to creating symmetrical, complex shapes with the Polygon tool lies in the editing of them.

To create a default polygon, you use the same click-diagonal-drag technique as you use with the Rectangular and Ellipse tools. This produces a symmetrical shape made up of straight paths. Because you'll often want a shape more elegant than something that looks like a portion of snack food, it helps to begin a polygon shape by holding SHIFT and CTRL while dragging: doing this produces a perfectly symmetrical (not distorted) polygon, beginning at your initial click point and traveling outward. Therefore, you have the shape positioned exactly where you want it and can begin redefining the shape. Here you can see the Polygon tool cursor and asymmetrical default polygon. Because the Polygon tool can be used to make star-shaped polygons, there are control points that govern the polygon points and nodes in-between these point controls that are used to alter the coves between points. When you edit a polygon, the position of these points can be reversed. These control points have no control handles because they connect straight path segments.
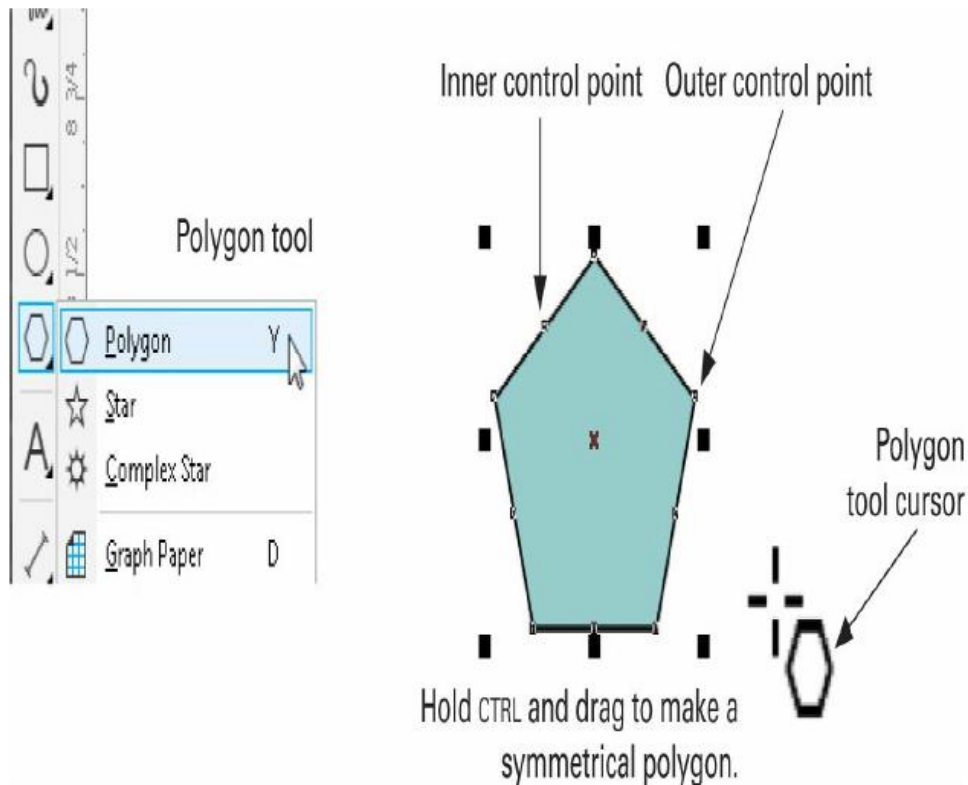
Figure 5.35: Creating a Polygon in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 256)

Stars and Complex Stars

You have variations on polygons at the ready in CorelDRAW, in the same group as the Polygon tool. The Star tool can be used to create pointy polygons with anywhere from 3 to 500 points. The Complex Star tool creates some combined polygons to make a star shape; you can create interesting symmetrical shapes by filling a complex star object—the result contains both filled and vacant polygon areas as the component paths intersect one another.

Working with the Star Tool

The Star tool produces objects by using the click-diagonal-drag mouse technique; CTRLSHIFT dragging creates symmetrical stars beginning at the initial click point traveling outward. On the Property Bar, when the Star tool is chosen, you have options for the number of points for the star and the "pointiness" (sharpness) of the resulting object—how severe the indents are between points. At a setting of 1, the star object isn't pointy at all—you'll see that it looks quite like a Polygon tool object. So, if you can make a star using the Polygon tool, why would you ever choose the Star tool? The answer is because the geometric structure of a star shape is always perfectly symmetrical. Although you can use the Shape tool to manually tune the sharpness of a Star tool object's points, the angle between points is always consistent.
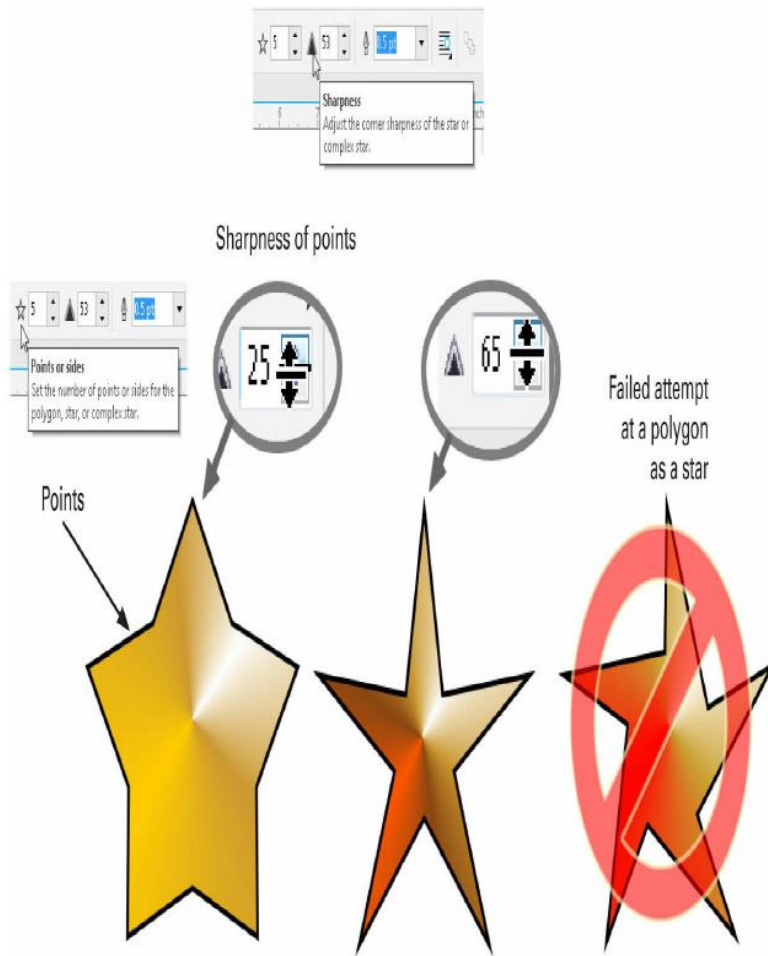
Figure 5.36: Star tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton
(Page 265)

Using the Spiral Tool

With the Spiral tool (press A as the keyboard shortcut), you can create circular-shaped paths that would be tedious if not impossible to create manually. Spiral objects are composed of a single open path that curves in a clockwise or counterclockwise direction. They can also be designed to expand in even-segment distances or increasing distances as the spiral path segments travel away from the center (called a logarithmic function). You find the tool in the Toolbox, grouped with the Polygon and Graph Paper tools. Spiral tool options share space in the Property Bar with the options for the Graph Paper tool and include the Spiral Revolutions, Symmetrical and Logarithmic Spiral modes, and a Spiral Expansion slider.
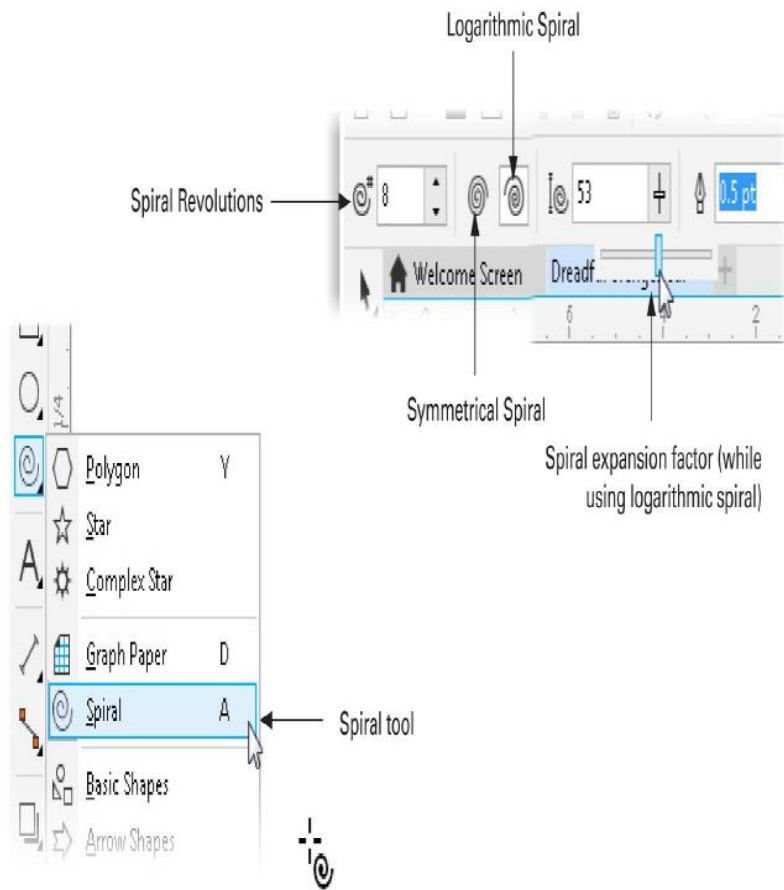
Figure 5.37: Spiral tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 272)

The
objects you create can have between 1 and 100 revolutions, each of which is equal to one complete rotation around its center point. The direction of the revolutions is set according to the click-diagonal-drag action during the creation of the initial shape.
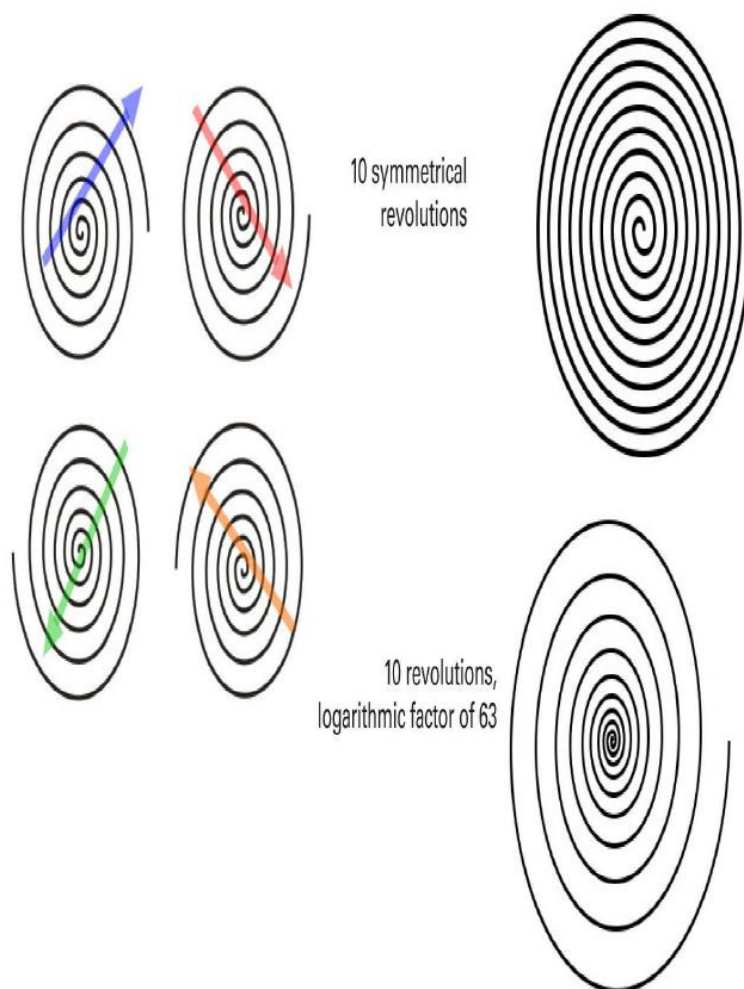
Figure 5.38: Spiral objects in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 274)

Please note that Spiral objects are not dynamic; no special editing or redefining is possible once the spiral has been created. This means you must set their properties before they are created. Other than using the Pick or Shape tool to edit their size or shape, spiral objects are a "done deal."

By default, all new spiral objects are set to Symmetrical. If you choose the Logarithmic Spiral, the Spiral Expansion slider becomes available. Here's how the modes and options affect the spiral objects you can create.

• **Symmetrical vs. Logarithmic**: A symmetrical spiral object appears with its spiral revolutions evenly spaced from the center origin to the outer dimensions of the object. To increase or decrease the rate at which the curves in your spiral become smaller or larger as they reach the object's center, you may want to use the logarithmic method. The term logarithmic refers to the acceleration (or deceleration) of the spiral revolutions. To choose this option, click the Logarithmic Spiral button in the Property Bar before drawing your shape.

• **Logarithmic Expansionoption:** While the Logarithmic Spiral mode is selected, the Logarithmic Expansion slider becomes available—as well as a value field you can type in—and you can set this rate based on a percentage of the object's dimensions. Logarithmic Expansion may be set from 1 to 100 percent. A Logarithmic Expansion setting of 1 results in a symmetrical spiral setting, whereas a setting of 100 causes dramatic expansion. If you need a shape that is reminiscent of a nautilus, increase the Logarithmic Expansion option to 50 or so.

Using the Graph Paper Tool
The Graph Paper tool (the shortcut is D) is used to create a grid containing hundreds (even thousands) of rectangles—an emulation of graph paper. Graph paper is invaluable in chart making as well as artistic uses. You find the Graph Paper tool grouped with the Polygon and Spiral tools. This tool's options on the Property Bar let you set the number of rows and columns for your new graph paper object. As with the Spiral tool, you must set options before drawing your graph paper object; a Graph Paper object cannot be edited dynamically.
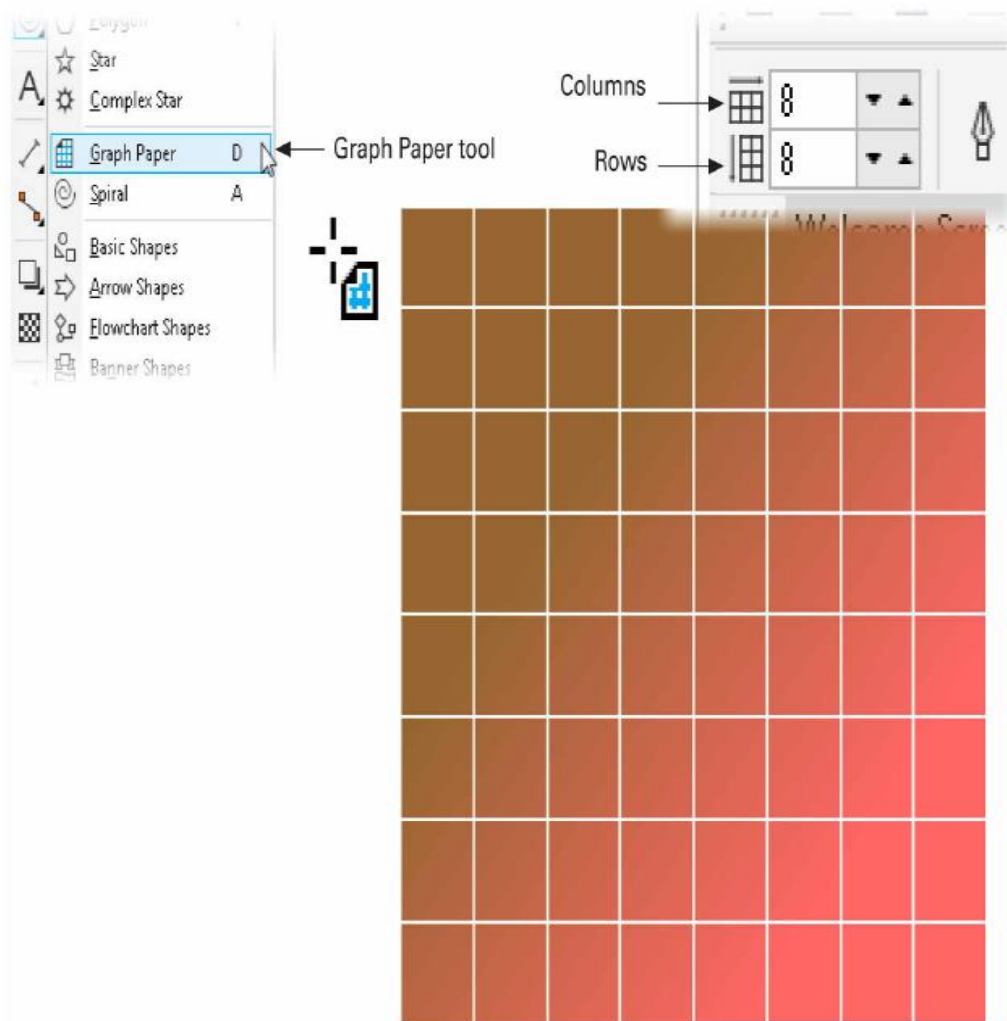
Figure 5.39: Graph Paper tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 276)

Using the Convert Outline to Object Command

A lot of the shapes covered in this chapter—the spiral in particular—have outline properties but no fill. So what do you do, for example, if you want a gradient-filled spiral? The Object | Convert Outline To Object command converts any shape's outline properties to a closed path. To apply the command to a selected object, choose Object | Convert Outline To Object, or use the shortcut CTRL-SHIFT-Q. Once the outline is converted, the resulting closed path looks exactly like the shape of the original, except it can be filled because it's not an outline. Instead, it's a closed path object whose shape is based on an outline. When an outline is converted to an object, CorelDRAW performs a quick calculation of the Outline Pen width applied to the object and creates a new object based on this value. When you apply this command to objects that include a fill of any type, a new compound path object is created based on the outline width. If the

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object includes a fill of any type, the fill is created as a new and separate object applied with an outline width and color of
None. When you're converting open paths, only the path itself is created as a single outline object of the path according to the Outline Pen width applied.

3.4.2 Arranging and Organizing Objects

When you create or import an object, it might not be exactly where you want it on the page. Or the position might be fine, but the object's a little too large. It might also be rotated by a few unwanted degrees, or it's part of a group or on the wrong layer—you get the picture. Learning how to transform objects—both the manual approach and the "pinpoint precise numerical entry" approach and composing elements on a page to be where you want them to be is what will be covered in this section.

Basic Object Selection

The Pick tool—by default, the tool at the top of the Toolbox—can be used to move, scale, and make other transformations when you click an object to select it and then drag to move the selection, for example. Use the SHIFT key as the modifier when you're selecting things on a page; you add to your existing selection by SHIFT-clicking other objects. If you've selected an object unintentionally, SHIFT-click on the object (which is already selected) to deselect it.

With one or more items selected, you'll notice that information about the selected shapes is displayed on the Status Bar. The other workspace area to watch is the Property Bar; it shows the position, size, and rotation of the selection. In addition to seeing info about your selection, you can also change transformations by entering numbers directly into the info boxes and then pressing ENTER. Also, if you press ALT-ENTER when something is selected, the Object Properties docker provides you with not only details about the object, but also the opportunity to quickly change many of the object's properties.
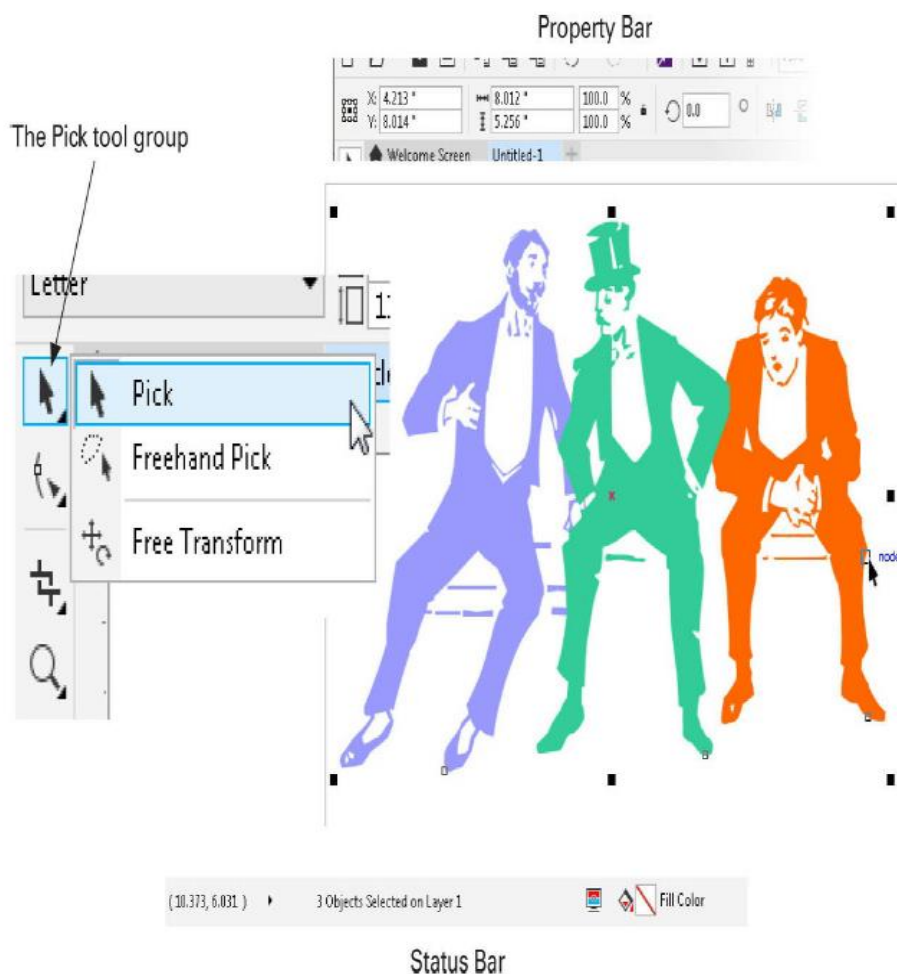
Figure 5.40: Pick tool group in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 286)

Pick Tool Selections

The Pick tool can be used for several things; the two most important are to choose an object (or several objects) and to create a change in the selected object(s) by moving it and adjusting its selection handles.

Clicking an object once selects it. While an object is selected, selection handles appear —the eight black markers surrounding the object. Additionally, depending on the type and properties of an object, you'll see nodes at various areas around the object, which indicate the first node in an object path or sub-path (of combined vector objects) when a vector object is selected or the edge of an object when a bitmap is selected. A small X marker appears at the centermost point of the object, indicating its center origin. This origin can be moved and is quite useful for defining a center of rotation for an object.

Picking and Freehand Picking

Selection handles

Center marker

Object sub-path nodes
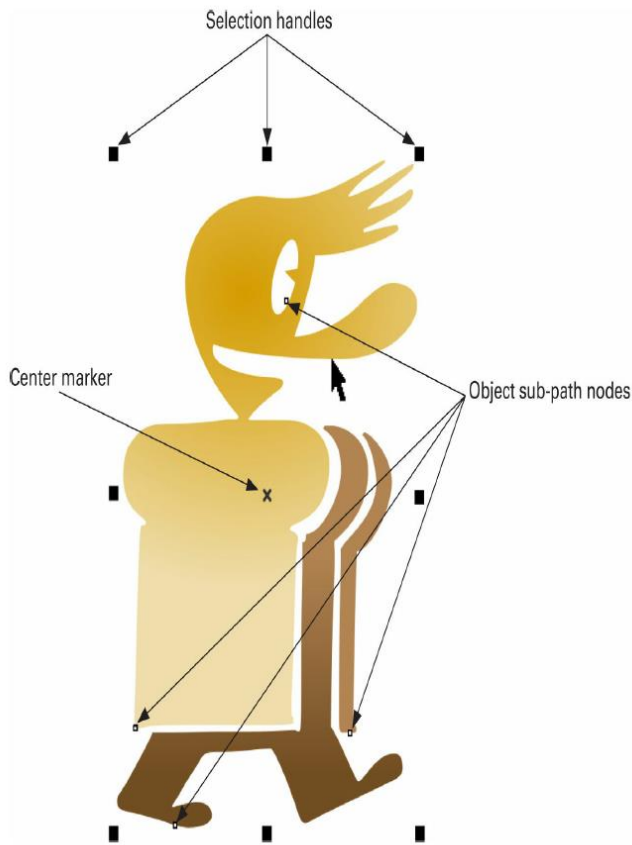
Figure 4.41: Selection Handles in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David
Bourton (Page 288)

The Freehand Pick tool is located in the Pick tool group, and both new and experienced CorelDRAW users might want to give this selection tool a try; the Freehand Pick tool behaves exactly like the (regular) Pick tool after an object is selected, so you can move or perform other transformations without switching tools.

The main difference between these tools is that with the Pick tool, you must click-drag to define a rectangle that the desired objects are completely within. The Freehand Pick tool is used more like a shape-creation tool than a rectangle-creation tool; you can click-drag around objects, selecting some and avoiding others, regardless of how closely the objects neighbor one another. The illustration here visually demonstrates the different properties of the Pick and Freehand Pick tools.
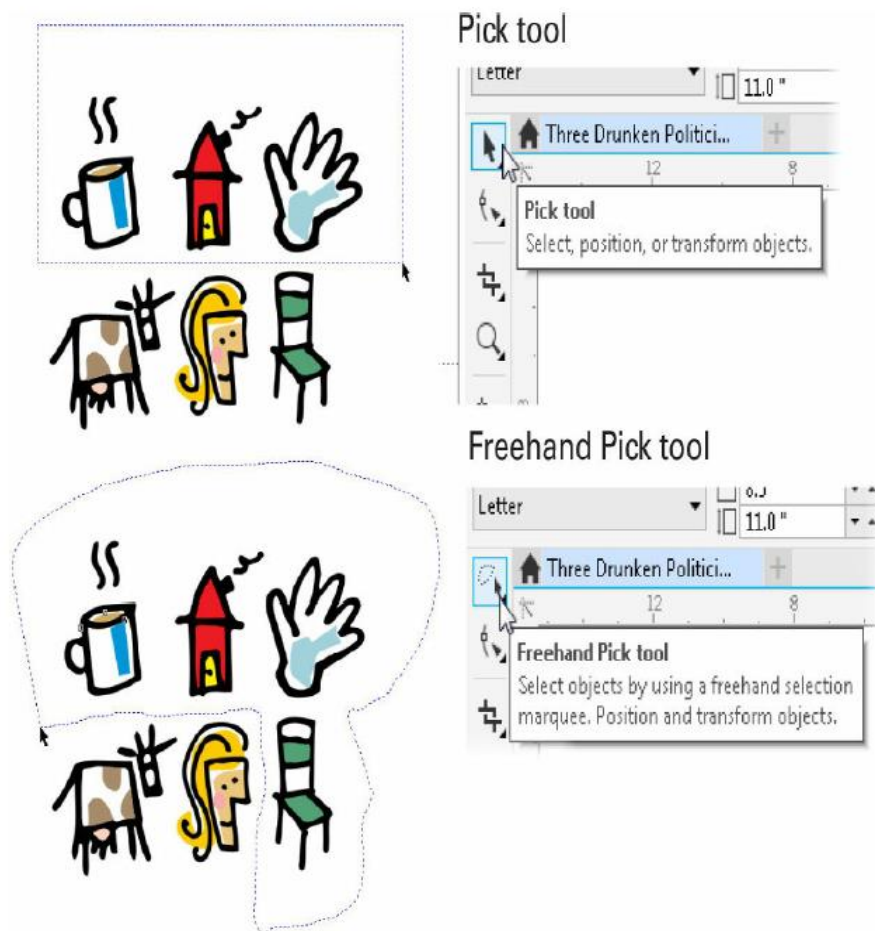
Figure 5.42: Picktool vs Freehand picktool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 290)

Selection Techniques

You can use mouse and keyboard combinations while navigating through a collection of objects and for selecting more than one object at a time using the Pick tool. Many of these object-selection techniques can also be used in combination with each other. Here's how to select more than one object in one fell swoop:

• **SHIFT-clicking to select:** Holding the SHIFT key while clicking an unselected object adds it to your current selection. This also works in the reverse: holding SHIFT while clicking a selected object deselects the object. This technique works with both the Pick and Freehand Pick tools.

• **Marquee-selecting objects**: To select all objects in a specific area, use the (regular) Pick tool and click-drag diagonally to surround the objects; a dashed blue outline representing the rectangular area being selected appears until you release the mouse button. When you do so, all object shapes completely within the area you define are selected.

• **Holding ALT while marquee-selecting**: Holding the ALT key as the modifier while click-dragging to marquee-select a specific area selects all objects

within—and even ones whose edge you touch. Holding SHIFT-ALT while marquee-selecting causes the reverse to occur—deselecting any objects that are already selected.

• **Pressing TAB to select the next object**: Suppose you have a bunch of objects in a document, but some of them overlap, and you're getting nowhere by attempting to click the one you need. Pressing the TAB key alone while the Pick tool is active selects a shape and selects the next single object arranged directly behind your current selection (whether or not it overlaps the current object). Holding SHIFT while pressing the TAB key selects the single object arranged directly in front of your current selection. This tabbing action works because each new object created is automatically ordered in front of the last created object. Tabbing cycles through single object selections on a page, whether you have a current object selected or none at all. The key is to begin tabbing after you've chosen the Pick tool.

• **ALT-clicking to select objects covered by other objects**: To select an object that is ordered in back of and hidden by other objects, hold the ALT key while the Pick tool is selected and then click where the object is located. Each time you ALT-click with the Pick tool, objects that are ordered farther back in the stack are selected, enabling you to "dig" to select hidden objects.

Selecting Objects by Type
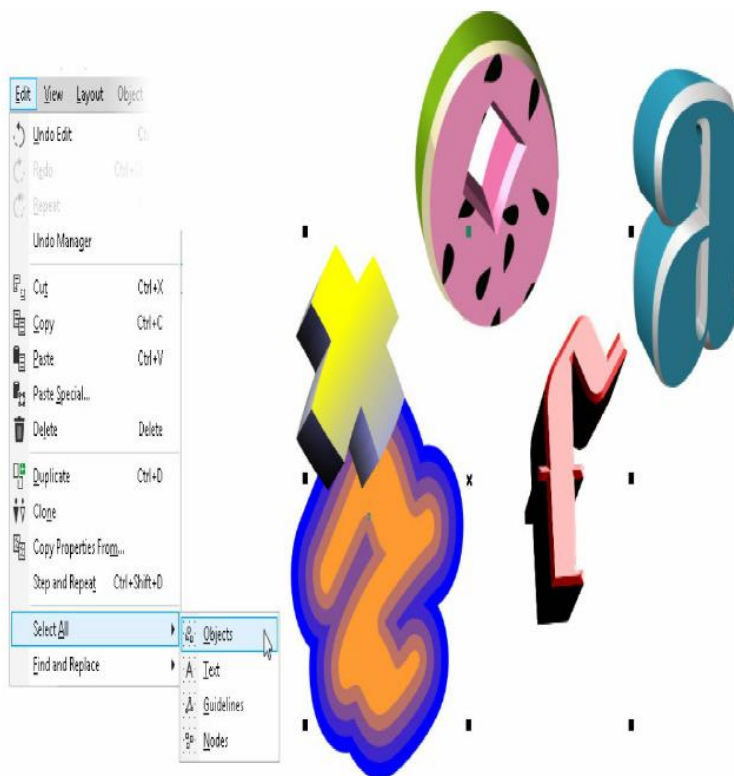
Figure 5.43: Object selection by type in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton
(Page 294)

So far, you've learned to select any objects on or off your page. But you can also select objects by their type (such as text objects, guidelines, and path nodes) using commands from the Select All menu, as shown in the following illustration. All text objects shown here are selected, and CorelDRAW is being very clever—it didn't select the O and the A because they are drawings and not text. You can extrude, add a perspective, and put any type of fill you like on text—and it's still text. See how effortless sifting through a page of objects can be? Each time you use a command from the Select All menu, a new selection is made (and any current selection of objects becomes not selected).

Please note that you can't select what's locked or hidden. Check the status of layers with the Object Manager if an object is welded to the page. Also, if click an immovable object and its selection handles are tiny lock icons, right-click over it and choose Unlock Object from the pop-up contextual menu.

Here's how to use each of the commands:

• **Select All Objects:** Choosing Edit | Select All | Objects selects all objects in your current document window. Quicker is the CTRL-A keyboard shortcut, which accomplishes the same thing and is easy to remember.

• **Select All Text:** Choosing Edit | Select All | Text instantly selects all text objects both on and off the current document page. Both artistic and paragraph text objects are selected after this command is used (unless they have been grouped with other objects, in which case they are ignored). Text objects that have effects (such as Contour and Extrude effects) also are selected using this command.

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• **Select All Guidelines**: Guidelines are a class of document page objects, different from objects you draw, but objects nonetheless. To select all guidelines on your document page, choose Edit | Select All | Guidelines. Selected guidelines are indicated by a color change (red, by default). To select guidelines, they must be visible and cannot be locked. Probably the fastest way to unlock or unhide a bunch of guidelines is to double-click one using the Pick tool to display the Guidelines docker (only if the docker is closed and not docked to the Pasteboard edge). The Guidelines docker has options for locking/unlocking and hiding/revealing existing guides. If guidelines you've placed merely aren't visible on your page, and you're sure you laid some down in your last session, try choosing View | Guidelines.

• **Select All Nodes:** You can have the Shape tool or the Pick tool (which will magically change into the Shape tool) and an object selected (closed or open paths qualify) when using this Select command. Choose Edit | Select All | Nodes to select all the object's path nodes, as shown next. For a quicker method in the same situation, use the CTRL-A shortcut when the Shape tool is your current tool. Special CorelDRAW objects, such as rectangles, ellipses, and polygons, can't be selected this way because their shapes are defined dynamically by "control points" instead of nodes.
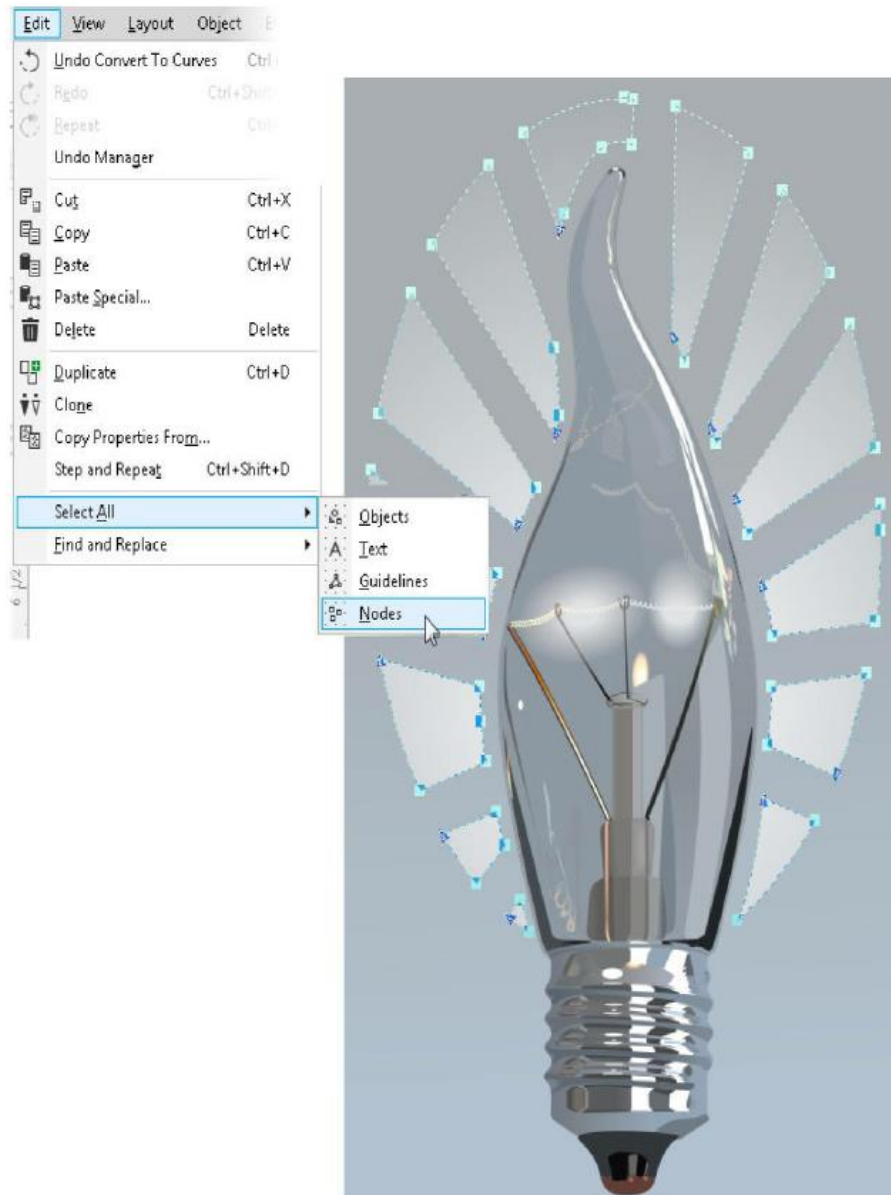
Figure 5.44: Object nodes selection in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 297)

Transforming Objects

A transformation is any type of object shape or position change, short of actually editing the object's properties. This includes changing an object's position, size, skew, and/or rotating or reflecting it. Dragging an object directly in a document is more intuitive than precision transformations—but both approaches have their special advantages.

Transforming Objects Using the Cursor

For the intuitive method, the Pick tool is what you need to transform objects by the simple act of click and dragging. Depending on the type of transformation you need to apply, you can click-drag any of the four black, square selection handles that surround the selected object or group of objects to change the size proportionally—by width only and by height only. Dragging any middle selection handle or side handle scales the object disproportionately— "smush" and "stretch" are the more common terms for disproportionate scaling.
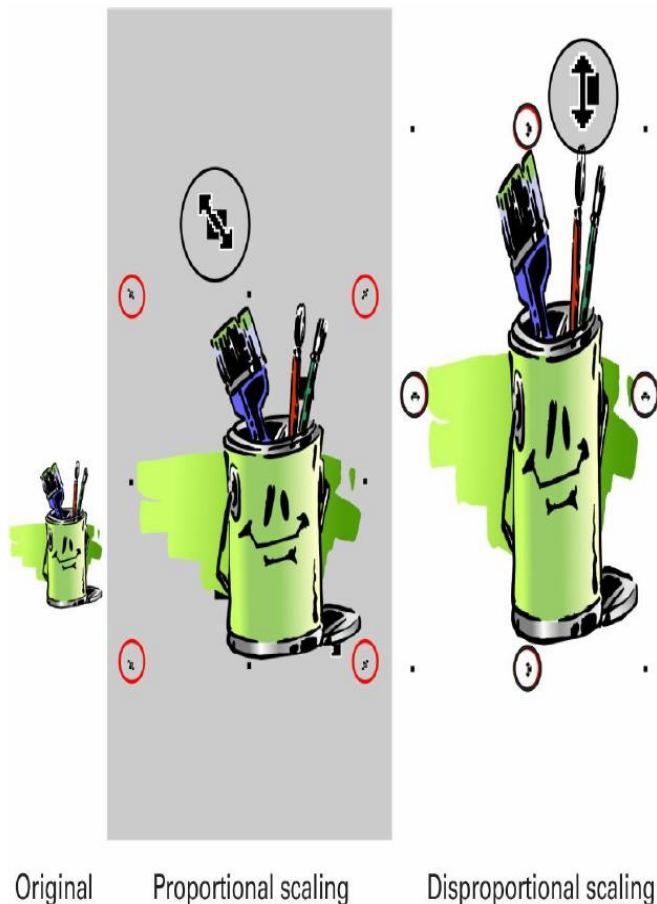
During transformations, CorelDRAW keeps track of the object's transformed size, position, width, height, scale, and rotation angle. CorelDRAW remembers your object's original shape from the time it was created, regardless of how many transformations have been applied to it. You can remove all transformations and restore the object to its original state in a single step: choose Object | Transformations | Clear Transformations to return your object to its original shape immediately.

Original   Proportional scaling   Disproportional scaling

Figure 5.45: Object scaling in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 303)

While transforming objects, you can constrain certain shape properties by holding modifier keys. Here are the effects of holding modifier keys for constraining a transformed object's shape:

• To change object size (scale) Click-drag any corner handle to change an object's size proportionally, meaning the relative width and height remains in proportion to the original object's shape. Hold ALT while dragging any corner selection handle to change an object's shape disproportionately, meaning width and height change, regardless of original proportions.

• To change width or height only Click-drag any side, top, or bottom selection handle to change the size of the object in the drag direction. Hold SHIFT while

doing this to change the width or height from the center of the object, or hold CTRL while dragging to change the width or height in 200 percent increments. You can also rotate or skew an object using Pick tool states that become available after you click a selected object a second time—you click an object that is already
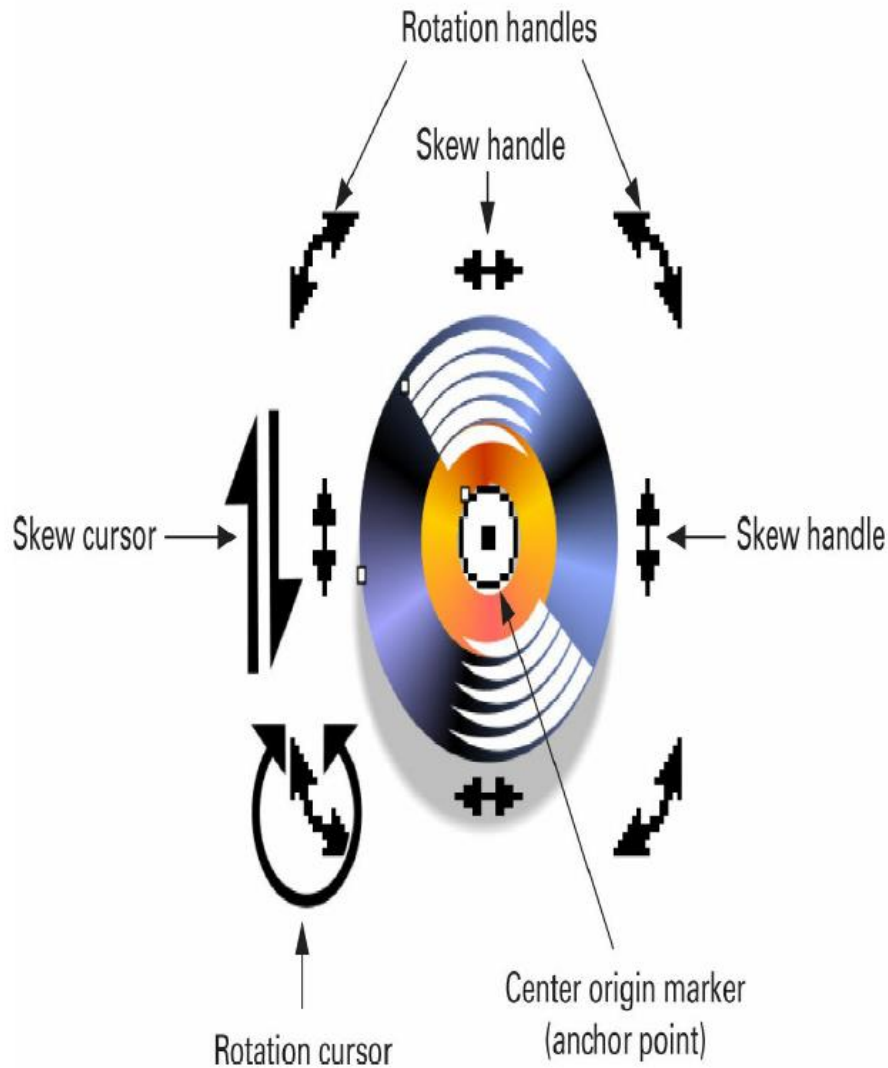
Figure 5.46: Rotating and Skewing in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 305)

selected once to display rotation and skew controls around the object.

You control the point around which objects are rotated or skewed by moving the center origin marker or anchor point of an object or group of objects. Your cursor will change to display either the rotation or skew cursor when held over a corner or side handle.

To flip a selected object quickly, either vertically or horizontally, use the Mirror Vertical and Mirror Horizontal buttons on the Property Bar while using the Pick tool.
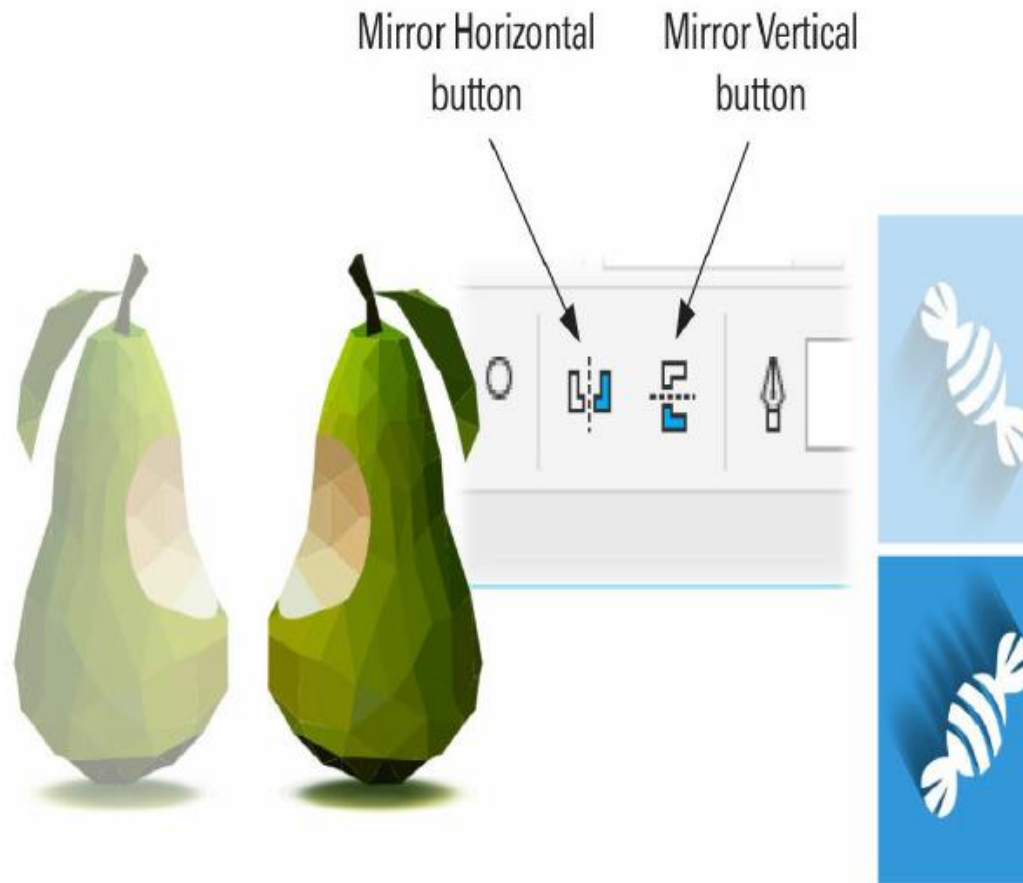
Figure 5.47: Horizontal & Vertical Mirror tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 308)

Using the Free Transform Tool
The Free Transform tool is the middle ground between controlling transformations entirely with mouse gestures and using the hands-off controls of the Transformation docker. When you use the Free Transform tool, the Property Bar offers four transformation modes: Free Rotation, Free Angle Reflection, Free Scale, and Free Skew.
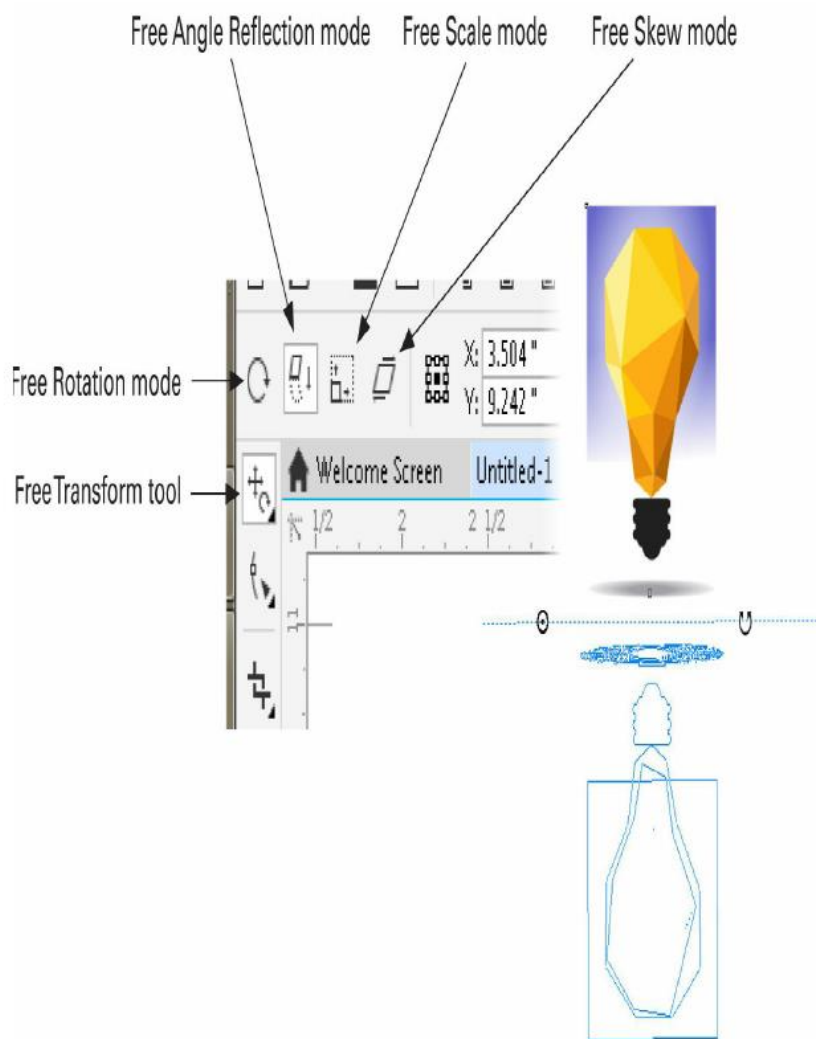
Figure 5.48: Free transform tool in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 309)

To transform a selected object in one of these four modes, click to select the mode and then use a click-drag action on your object. A live preview of the new object's shape appears. While you're using Rotation or Angle Reflection mode, a reference line appears as you drag to indicate the object's angle transformation from its original state.

Using the Free Transform tool and then applying a little transparency can yield compositions that contain believable reflections. The Free Transform tool works with bitmaps as well as native CorelDRAW vector objects.

Applying Precise Transformations

The Transformations docker is terrific for applying multiple transformations with a single command. The docker has five Transformation buttons: Position (Move), Rotation, Scale and Mirror, Size, and Skew.
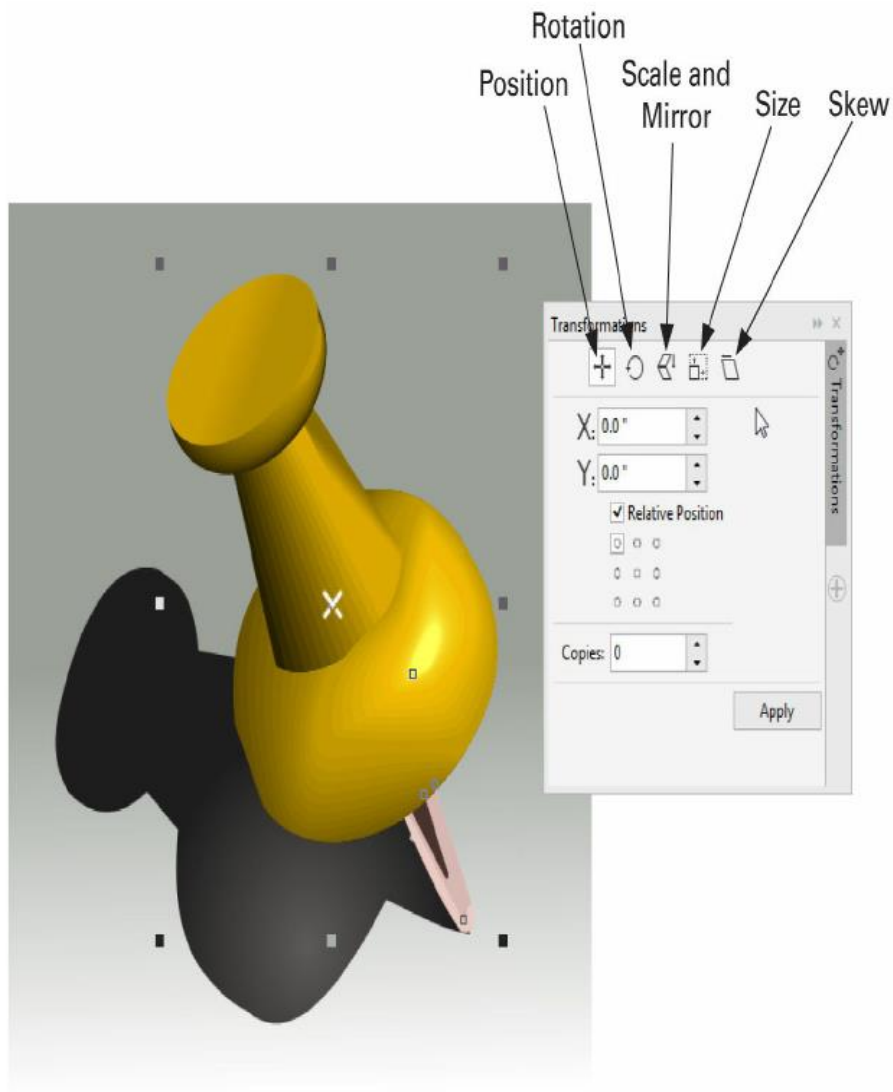
Figure 5.49: Precise transformation in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 314)

To open the Transformations docker, choose Window | Dockers or choose Objects | Transformations. When you click any sub-menu command, the entire docker appears docked to the right edge of the drawing window.

For all transformations, the procedure is the same: click the button for the type of transformation, enter the values you need, and then click the Apply button in the docker to transform the selected object(s).

3.5 Working With Text In Coreldraw

CorelDRAW Text tool

All the text you want to enter on a page in CorelDRAW is created with the Text tool, the tool with an "A" as its icon in CorelDRAW's Toolbox. To begin, click

its button in the Toolbox or press F8. If there's already text on the page, double-clicking the text with the Pick tool switches the current tool to the Text tool and makes an insertion point for adding text. The Text tool cursor is a small crosshair with an A in the bottom-right corner, which becomes an I-beam (a text-editing cursor) when it's over a text object. You click anywhere on the page or the pasteboard to create an insertion point, and then you get to work with your keyboard.

Text copied from the Clipboard can be pasted when the Pick tool is your current tool. Usually, unformatted text—text from a TXT file you copied from TextPad, for example—will import as Paragraph Text. Text copied from word processors will import as a document object; double-clicking the object offers in-place editing exactly as you'd edit a WordPerfect or Microsoft Word document. It's usually best to choose Edit | Paste Special when pasting Clipboard text to ensure correct formatting and the original fonts are used and to use the Text tool's I-beam cursor to insert pasted text.

When you use the Text tool, you can produce two different types of text objects in a document: Artistic Text and Paragraph Text.

The smaller body copy text uses Paragraph Text; the top paragraph wraps around the top of the image by use of a CorelDRAW Envelop. Artistic Text and Paragraph Text have different properties but are added to a document using the same Text tool. Artistic Text, by the way, it's produced in a document, is easy to reshape and distort—you'll find it simple to do artistic things with it, such as creating a company logo. Conversely, Paragraph Text is optimized for longer amounts of text, and it's a great text attribute for quickly modifying columns of, for example, instructions, recipes, and short stories. In short, Paragraph Text is best used for several paragraphs of text in a composition while Artistic Text should be reserved for headlines and just a few lines of text you might want to curve along a path, extrude, or do something else unique and fancy with.

Figure 5.50: Artistic & Paragraph text in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 473)

Although there are similarities between Artistic and Paragraph Text, you're best off using one or the other depending on the type of text element you want in your design.

Entering and Editing Artistic Text

Artistic Text will serve you best for illustration headlines, callouts, and on any occasion when you want to create text that has a special effect such as extrusion, an envelope, text on a path, and so on. To add a line of Artistic Text to a

document, with the Text tool you click an insertion point and then type your phrase; alternatively, after clicking an insertion point you can press CTRL-v to paste any text you have loaded on the Windows Clipboard. To create several lines of Artistic Text, you type and press ENTER to put a carriage return at the end of the line; you then continue typing. By default, all Artistic Text is set in Arial, 24 points.

Artistic Text is also easy to convert to curves so you can modify a character in a word. To duplicate this effect, you begin with Artistic Text for the company name, press CTRLQ (Object | Convert to Curves), and then edit away using the Shape tool. Artistic Text can be fine-tuned using the features on the Property Bar when the text is selected using either the Pick tool or the Text tool.
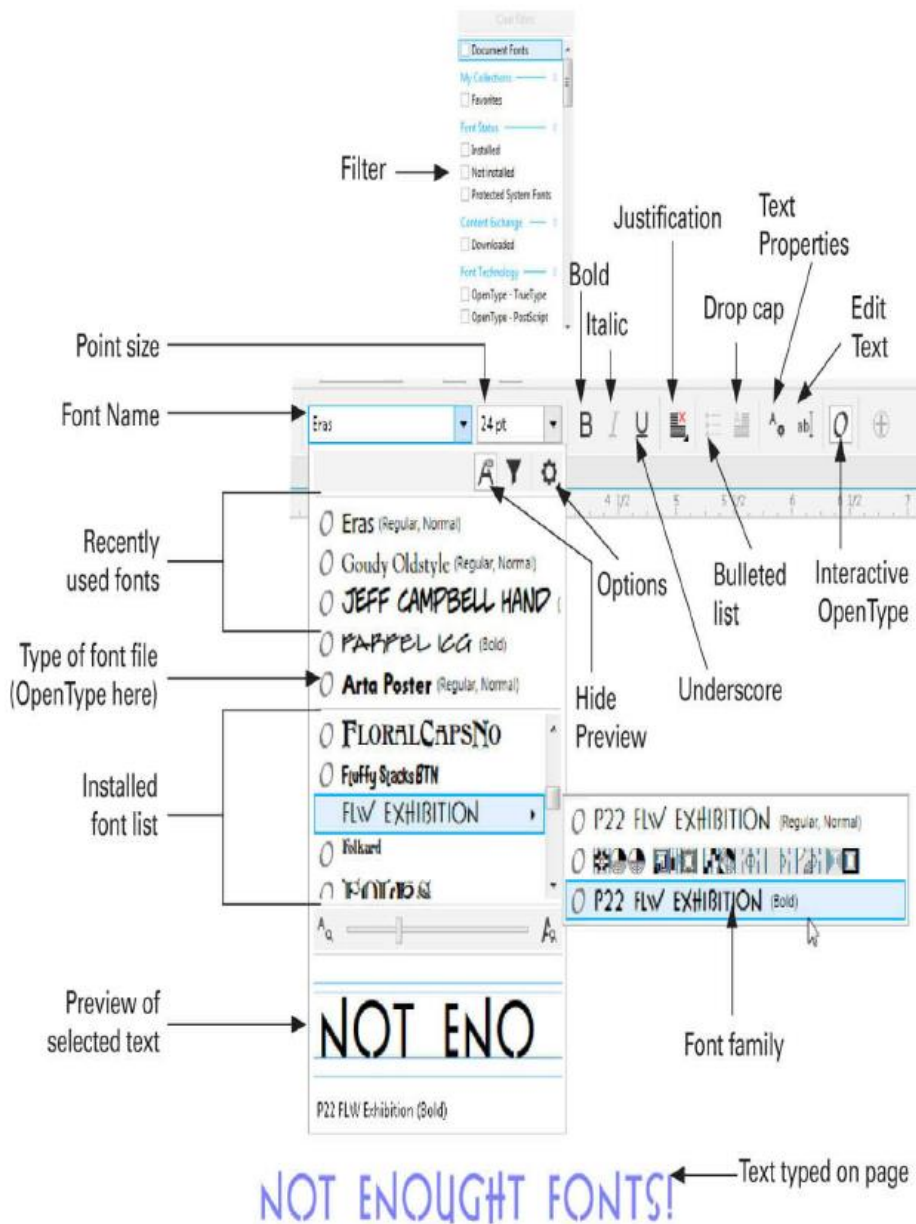
Figure 5.51: Artistic Text in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton (Page 475)

• **Type of Font (File):** To the left of the font name displayed in the drop-down box is an icon signifying what file format the chosen font uses: OpenType, Type 1, or TrueType. This is a nicety when you're using the Filter List feature, covered later in this section.

• **Font Name, Font Family:** The font name is the name of the typeface you decide upon. By default, you're using Arial 24 points. You change fonts in a new document by selecting the text you've typed with the Pick tool and then choosing

a different font from the drop-down list. If a font has family members, a right-facing triangle can be seen to the right of the font name when the drop-down list is extended, and you can choose one by hovering above the triangle to reveal the flyout and then clicking the family member title. You can also perform a speed-search by clicking the current name in the font name box and then typing the first few letters of the font you want. The drop-down list immediately scrolls to the neighborhood of installed fonts, making your selection a fast and effortless one. Note also that on the Font List, at the top, above the divider bar, are the fonts you've chosen recently, from previous documents, and even from previous CorelDRAW sessions.

• **Point Size:** Text has traditionally been measured in points; with current digital typeface technology, the measure is 72 points to the inch. Artistic Text used as a printed headline can be anywhere from 18 points for a flyer headline to 72 points for an impactful newspaper headline, to 300 points and up for headlines that fairly shout at the reader.

• **Bold and Italic**: These buttons on the Property Bar are shortcuts to defining a whole line of text or only selected characters as bold and italic members of the typeface shown in the Font Name box. If a specific font has no family members, CorelDRAW doesn't "fake" a bold or italic look, and the buttons are dimmed. If you need an italic treatment of a font that has no italic family member, a quick fix is to use the Transformation docker and then set Skew to about –12° to apply to the Artistic Text.

• **Underline:** An underline is an effect available for every font you have installed—you click the button when text is selected and CorelDRAW renders an underline. You can modify the style of the underline to your choosing by highlighting the underlined text and choosing Object Properties. Then on the Character area of the Object Properties docker, you click the Underline flyout and choose the type of underline style you prefer.

• **Justification:** Also called "Horizontal Alignment" in balloon help. This drop-down offers how lines of text are aligned relative to one another. Although Justification will serve you best when using long columns of Paragraph Text, Artistic Text takes on a more polished look, too, when you apply, for example, Center justification to two or three lines. By default, there is no Justification for newly entered Artistic Text, but for all intents and purposes, this is left-justified text. Full Justification creates a splendid, professional look for columns of Paragraph Text, but tends to generate an awkward look for two- or three-line headlines. Left Justification is quite common and acceptable in Desktop Publishing, and Right Justification should be reserved for extreme design circumstances in Western countries because we read text from left to right. There is a slight difference between Full and Forced Justification, your last two choices on the drop-down list. Full Justification ensures that both the left and the right margins are flush to an imaginary line at the width of the text column. Forced

Justification creates the same flush-left and -right column edges, but it will also create extra space between words and characters if a line has only a few characters. In the illustration here, you can see an awkward presentation of a few lines. You might want a wide character-spacing effect, and to do this, you put a soft return at the end of a line (press SHIFT-ENTER).

• **Text Properties**: Clicking this button displays the Text Properties docker. Text Properties is very similar to the top area of the Object Properties docker. Essentially, anything you need to do to customize one or more characters in a text string can be done using the features on the Text Properties docker. You can access the features of the Text Properties docker by clicking the button when text is selected with the Text tool and Pick tool, or by pressing CTRL-T when the Shape tool is the active tool.

• **Interactive OpenType:** Explained shortly, Interactive OpenType shows alternative characters in highlighted OpenType text you've typed. OpenType fonts sometimes contain scores of custom characters that are very hard for
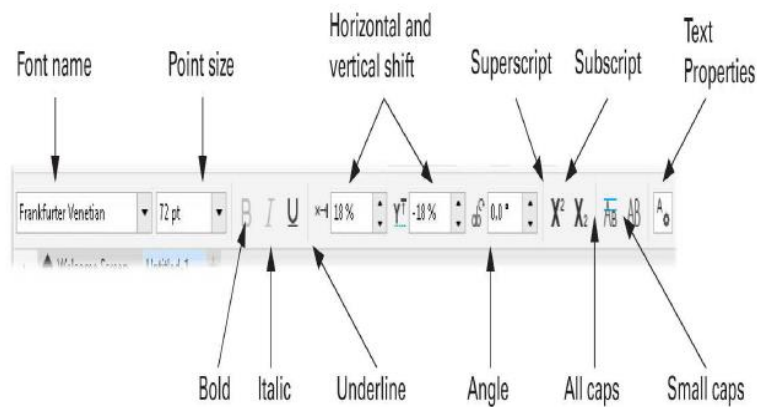
Figure 5.52: Text formatting with Property bar in CorelDraw
Source: CorelDraw X8, The Official Guide by Gary David Bourton
(Page 482)

average users to access and add to the text. The Interactive OpenType button shows and hides alternatives, allowing one-click addition of special characters when a specific Open Type font contains them.

• **Edit Text**: This button displays a text-editing box, which also appears when you click the Text tool on the text that has an effect such as Envelope or Extrude. CorelDRAW is designed with text editing flexibility in mind, so to transform text using just about any feature—and to allow the text to still be editable—you work in a proxy box so you don't have to start over when you make a typographic error. You can also display the Edit Text box by clicking a line of text that has, for example, an Envelope effect, using the Text tool. The Edit Text box just pops up, with the text selected and ready to edit.

• **Bulleted List**: With text selected (with the Pick tool) or highlighted (using the Text tool), clicking the Bulleted List button creates a bulleted list from your text, using a standard bullet symbol, a hanging indent for the text, and a new bullet wherever you've put a hard return in Paragraph Text. This button is inactive when Artistic Text is chosen.

• **Drop Cap**: By default, when Paragraph Text is highlighted and you click this button, a three-line-tall drop cap is auto-created. Options to adjust the drop cap height and spacing, as well as whether a hanging indent is used or not, are found under the Text menu.

• **Hide Preview, Filter, Options**: These three buttons can be seen when the font list has been rolled down. The Hide (or Show) Preview button shows the first few characters of the text you want to use, displayed with the selected text on the page. The Filter option lets you choose whether the Installed Font List shows only OpenType fonts, shows font "favorites," or only fonts are shown in the current document. It's handy. Finally, the Options button lets you choose how the fonts on the list are displayed—fonts displayed by name, show/don't show the recently used fonts, and so on.

• **Recently Used Fonts**: When this option is turned on in Options, a list of fonts you've used in the current and previous documents is displayed.

3.6   SUMMARY

The Photoshop and CorelDRAW interface provides no mysteries, but only things you have not discovered yet. So if you read up on the software, you'll be that much more ahead when you decide to paint and retouch.This unit intends to work the element of discovery into a creative process: you pick up the knowledge of how a tool or feature works, you discover several purposes for the tool, and finally, you take your newfound wisdom and apply it—to realize an idea on paper. Developing skill in any field including design comes with time and practice. If you take the time, this unit will provide you with the other ingredients needed so that your footing is sound in a new application, and your bearings are based first on knowledge and eventually on instinct.

SELF-ASSESSMENT EXERCISES (SAEs)

Define CorelDraw
What is the transformation docker used for?
What is the pick tools used for?
What is the graph paper tools?
What is the polygon and property bar used for?
What is the Ellipse tools used for?

3.7 Glossary

CorelDraw: A software program for editing vector graphics

Ellipses are a staple of commercial design work, and essentially an ellipse is a circular shape that is not perfect.

Graph Paper Tool: Used to create a grid containing hundreds (even thousands) of rectangles—an emulation of graph paper.

Object: Describes an element in a drawing; Examples: layer, logos, poster, line and shape

Transformations docker: Used for applying multiple transformations with a single command.

3.8   REFERENCES/FURTHER READINGS

*Gary D. Bouton (2017), *CorelDRAW X8, The Official Guide*

Vinod (2017), *What is CorelDRAW?* Retrieved online from https://techmonitor.ai/what-is/what-is-coreldraw-5003066

*Major source materials for Unit three

3.9 POSSIBLE ANSWERS TO THE SELF-ASSESSMENT EXERCISES (SAEs)

SAE 1: Define CorelDraw

Answer to SAE 1:

CorelDraw is a software program for editing vector graphics.

SAE 2: What is the transformation docker used for?

Answer to SAE 2:

The Transformations docker is used for applying multiple transformations with a single command.

SAE 3: What is the pick tools used for?

Answer to SAE 3:

The Pick tool can be used for several things; the two most important are to choose an object (or several objects) and to create a change in the selected object(s) by moving it and adjusting its selection handles.

SAE 4: What is the graph paper tools?

Answer to SAE 4:

The Graph Paper tool (the shortcut is D) is used to create a grid containing hundreds (even thousands) of rectangles—an emulation of graph paper. Graph paper is invaluable in chart making as well as artistic uses.

SAE 5: What is the polygon and property bar used for?

Answer to SAE 5:

The Polygon tool (the shortcut is Y) is unique to the category of vector drawing software. Although competing applications offer a polygon tool, CorelDRAW's Polygon tool produces shapes that can be edited for making dynamic changes, just like CorelDRAW rectangles and ellipses.

SAE 6: What is the Ellipse tools used for?

Answer to SAE:
Ellipses are a staple of commercial design work, and essentially an ellipse is a circular shape that is not perfect. The Ellipse tool can be used to draw both circles and ellipses, but in CorelDRAW an ellipse shape has additional, special properties, just like a rectangle can be a round-cornered rectangle.

UNIT 4: INTRODUCTION TO MICROSOFT ACCESS

4.1   Introduction

4.2   Learning Outcomes

4.3   Definition of terms and Elements of a Database File

     4.3.1   Definition of terms

     4.3.2   Elements of a Database File

4.4   Relational Database/*Relationships*

4.5   Microsoft Access

     4.5.1   Introduction to Microsoft Access

     4.5.2   Access Database Design Considerations

4.1   INTROBUCTION

This Unit will introduce you to the meaning of a database, and the Microsoft Access Database framework.

4.2   LEARNING OUTCOMES

At the end of this Unit, you will be able to:

- Define the concept of database
- Describe a relational database
- Describe the elements of a database file
- Explain basic facts about Microsoft Access
- Highlight issues to consider in the design of database

4.3   Definition of terms

What is a Database?

There are many definitions of database but in essence it is a collection of information. Archive records, library card catalogs, and even the Internet encompasses all kinds of databases. In most cases, the term "database" is used to describe a set of related data or information stored on a computer. Electronic databases allow you to store, sort and retrieve data. It is possible to create a database by using Microsoft Access, Word spreadsheet or Excel spreadsheet. To be properly described as a database the gathered information must be connected to a specific purpose or subject matter.For example a library database may consist of bibliographic record of books or information on library users. It may also be acquisition record of vendors and their transaction with the library. The library can also maintain a database of its inter-library loan and its circulation services. A database does not necessarily need to be stored in a computer. If it is then it can be defined as a computerised database. Where the your database is not stored on a computer, or may be some aspects are, only parts of it are, it would entail tracing information from a variety of sources that you have to coordinate and organize yourself. A good example is where you store information about your book vendors or suppliers, in a file, file cabinet or table drawer. Changes in the vendor's information will entail updating the

changes in all the locations where the information is stored. The case is different where the information is stored in the database because you only have to update that information in one place — the vendors' information is automatically updated wherever it is used in the database.

Indeed a database is a collection of logically related data files which is integrated and organized so as to provide s single comprehensive file system. Database system design is concerned with the problem of organizing the database, accessing data on it, using it, updating it and providing output (reports or responses to file interrogations) to a variety of users; e. g. a students' file, Marks file, Payment's file. The Marks' file will comprise records of marks scored by the students. Database Management System refers to software that 'builds, manages and provides access to a database'. Examples are Microsoft Access, FoxPro, Clipper, Oracle, Foxbase

4.3.2 Elements of a Database

There are at least five elements that must be present in every database.
These are:
A) A field: In Table 5:1 below, students' name constitutes a field. So also do their faculties, departments, age and serial number. A column, or field, is a specific category of information that exists in a table. (Stephen 2003)

B) A File: In Table 5.1, the data is arranged in a row. So student's complete file consists of his name, faculty, department street address and age. Furthermore if a library has in its holdings 100, 000 different titles, the accession register will contain 100, 000 files of information about the records or rows of data. It is important to note that the file is organised into records that are related in logical characteristics.

C) A record: Please observe that a record is constituted by building up several but related fields of data. Significantly, database table records are usually in rows.

D) Data type: There are three data types common in most databases. The is numeric data type which are in numbers. In Table 5.1, serial numbers and ages are listed in raw numbers. The second data type is alpha as illustrated by students' names, faculty and departments. The third data type is alphanumeric which is a combination of numbers and alphabets as is seen in the column of street address.

E) Table: They are used to store data that users will access

The design of most databases will involve the use of the following tables:

- Data tables: Their basic role is to store most of the data found in a database.

- Join tables: They are used to create a relationship between two tables that would otherwise be unrelated.

- Subset tables: They contain a subset of data from a data table.

- Validation tables: These are regarded as code tables, and they are used   for the validation of data entered into other database tables.

Table 5.1: A Database table showing fields (six) and records

1 S/N	2 STUDENTS NAME	3 FACULTY	4 DEPT	5 STREET ADDRESS	6 AGE
1	ABDULLAHI YUSUF	EDUCATION	LIBRRY SCIENCE	12 KANO ST KANO	17
2	OLADELE AYINDE	PHYSICAL SCIENCE	CHEMISTRY	15 LEKAN MUSHIN	18
3	NWACHI OJI	BIOLOGICAL SCIENCE	ZOOLOGY	5 ACHI ST ENUGU	20
4	JOSEPHINE JOHNSON	AGRICULTURE	ANIMAL SCIENCE	4 IJAW ST. PH	16
5	YUSUF YAKUBU	ARTS	FINE ARTS	7 REMI ST KADUNA	21

6	GREEN GREAT	SOCIAL SCIENCES	POLITICAL SCIENCE	8 JONATHAN ST YENOGUWA	19
7	BULUS BITRUS	HEALTH SCIENCES	NURSING	1 GWOM ST JOS	17

4.4   Relational Database/Relationship

What is a relational database? It is a collection of tables, with each table containing information on a specific subject. Secondly, it uses a series of logically-related two-dimentional tables or files to store information. Essentially, related data can be stored in separate tables and a definition relationship ensure information retrieval, facilitate queries and prepare reports. between the tables, Microsoft Help says that a "relationship works by matching data in key fields, usually a field with the same name in both tables. In most cases, these matching fields are the primary key from one table, which provides a unique identifier for each record, and a foreign key in the other table"

For example, here we have simple database of library Users:

LibRec	First	Last	DOB	Librari
234-453	Chidi	Ikechuk	02/05/8	Ngozi
867-543	Uche	Charles	04/20/7	Eze
523-425	Musa	Adamu	10/10/8	Edwar

Here is a simple database For Librarians:

LibID	First	Last	Phone #
555-555	John	Kung	080-
444-	Lami	Kasim	070-
333-	Blessing	Nnamdi	080-37985370

In an Access database, we can create both of the datasets and link them.

LibRec	Firs	Last	DOB	Librari
234-453	Chid	Ikechu	02/05/8	Ngozi
867-543	Uch	Charle	04/20/7	Eze
523-425	Mus	Adam	10/10/8	Edwar

LibID #	First	Last	Phone
555-555	John	Kung	080-
444-444	Lami	Kasim	070-
333-333	Blessin	Nnamdi	080-

4.5   Introduction to Microsoft Access

There are at least 10 basic facts to note about MS Access

1) It is Database Management System from Microsoft
2) It is a relational database
3) Data storage is in MS Access' own file
4) Users can create tables queries, reports, and link them together
5) It has report creation capability that can work with any data source that it can access
6) It can export and import data from FoxPro, Excel, Oracles, etc
7) Heterogeneous joining of data between data set stored in different platforms can be handled by MS Access
8) In terms of programming, it is relatively compatible with Structured Query Language (SQL)
9) End users can access data from any system
10) Latest versions (from 2013) can be used to create web applications
11) Runtime versions of MS Access allow users to access desktop applications without having to buy and install licensed editions of Access

4.5.1 Access Database Design Considerations

The design and implementation of a database management system will require critical planning, just like an architect and engineer will do in a building project. The questions to ask include:

a) What purpose will the database serve or who are the ultimate end-users?
b) How many tables will be needed for the database?
c) Which fields will the database require?
d) How will the tables be related?
e) At what stage will it require to be modified or be redefined?.

There could be more questions. Please note that the primary goal of database deign is to arrange data into tables and fields. You will find the following guidelines articulated by Shelly and Vermaat (2012) as vital considerations in the database design process.

Consideration 1: Table identification
Consideration 2: Primary keys
Consideration 3: Additional fields
Consideration 4: Relationship between tables
Consideration 5: Data types for fields
Consideration 6: Unwanted redundancy
Consideration 7: Storage location
Consideration 8: Additional properties for fields
Consideration 9: Best distribution method

Consideration 1: Table identification

To identify the number of tables for the database it is important to first identify the main objects of the database.. If for example the objects for a library database are library users and circulation services, there will be two tables, one for each object.

Consideration 2: Primary keys

What is primary key? It is the unique identifier for a record in the table. In the example in Consideration 1 above, the registration number can serve as the key for library user while the ISBN will serve as the key for books be borrowed or returned by students,

Consideration 3: Additional fields

In most cases, while the primary key provides a unique identification for a record in a table, there may be the need for more fields to fully describe the record. In the example of student registration number there may be the need to create additional field for the student's name, department, faculty, hostel, telephone numbers, etc.

Consideration 4: Relationship between tables

It is crucial to determine the relationship between tables and ascertain the possible matching fields in both tables. In circulation and cataloguing tables for example, the ISBN could serve as the matching field fir both tables.

Consideration 5: Data types for fields

The determination of data type for the tables will define whether numeric, alpha or alphanumeric data will be entered in the field. It is most likely that student telephone numbers will be numeric, their names alpha and street addresses alphanumeric.

Consideration 6: Unwanted redundancy

Redundancy occurs when a piece of information is stored in more than one place may result to wasted space, and data inconsistency. It is advisable to remove the redundancy by splitting a table and put the redundant field in a different table.

Consideration 7: Storage location

Databases are often stored as a single file and it vital to determine in good time where it will be stored, whether in a server, a system or cloud.

Consideration 8: Additional properties for fields

Considerations here will include: what is the field size (number of character)?; any abbreviation?; and any description?

Consideration 9: Best distribution method

Most invariably, the common means of distributing databases (tables) is by printing and distributing tables as hard copies. With advances in technology, it can be easily done electronically.

4.5.3 Helps for Practical Access Design

Working with access can be an exciting learning experience. Several online websites, audios and videos are available facilitate your practical learning voyage. The videos range from 10 minutes to three hours lessons. Some can last for three or more days. What is however important is to examine and explore these learning resources so as acquire the necessary learning competencies and capabilities. Please consult the following resources:

1) Tutorialpoint (2022).Learn MS Access: Absolute beginners. Available at https://www.tutorialspoint.com/ms_access/index.htm

2) MS Access 2016 - Course Overview Watch More Videos at: https://www.tutorialspoint.com/videot... Lecture By: Mr. Akshay Magre, Tutorials Point India Private Limited.

3) McAllister, D. (2020)) Access.2016: Beginner Part 1. Available at www.learnit.com

4) Kaceli, S. (2017). Tutorial: A Comprehensive Guide to Access-Part 1 of 2. Available at www.learn.kaceli.com

4.6 SUMMARY

A database is a collection of logically related data files which is integrated and organized so as to provide s single comprehensive file system. Database system design is concerned with the problem of organizing the database, accessing data on it, using it, updating it and providing output. The design and implementation of a database management system will require critical planning, just like an architect and engineer will do in a building project. Database Management System refers to software that 'builds, manages and provides access to a database'. Examples are Microsoft Access, FoxPro, Clipper, Oracle, Foxbase

SELF-ASSESSMENT EXERCISES

1) Define database

2) List the elements of a database file

3) Highlight at least five basic facts about Microsoft Access

4) List seven considerations in the design process of a data base

5) A University Librarian has engaged your services to design library database management system using Microsoft Access. What preliminary questions will you ask?

4.7 Glossary

Database is a collection of logically related data files which is integrated and organized so as to provide s single comprehensive file system

Database Management System refers to software that 'builds, manages and provides access to a database'. Examples are Microsoft Access, FoxPro, Clipper, Oracle, and FoxBASE

Data types: Describe the category of entered in a database There are three data types common in most databases.

Alpha data type is in words as illustrated by students' names, faculty and departments.

Alphanumeric data type is a combination of numbers and alphabets as is seen in the column of street address.

Numeric data type is in numbers.

Field: A column, or field, is a specific category of information that exists in a table.

File: It is important to note that the file is organised into records that are related in logical characteristics.

Record: Constituted by building up several but related fields of data. Significantly, database table records are usually in rows.

Tables: They are used to store data that users will access

Data tables: Their basic role is to store most of the data found in a database.

Join tables: They are used to create a relationship between two tables that would otherwise be unrelated.

Subset tables: They contain a subset of data from a data table.

4.8   REFERENCES/FURTHER READINGS

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Hag, S and Cummings, M. (2010). Management Information System for the Information Age.   New York: MacGraw-Hill, 555.

Shelly G. B.& Vermaat M. E. (2012). Discovering Computers & Microsoft Office 2010: A   Fundamental   Combined   Approach.New   York: MacGraw-Hill,

Stephens, R. K. & Plew, R. R. (2003) The Elements of Database. Available @   https://www.developer.com/database/the-elements-of-a-database/

1.9 POSSIBLE ANSWERS TO SELF-ASSESSMENT EXERCISES (SAEs)

SAE 1: Define database

Answer to SAE 1:

A database is a collection of logically related data files which is integrated and organized so as to provide s single comprehensive file system

SAE 2: Highlight the elements of a database file.

Answer to SAE 2:

There are at least five elements that must be present in every database. These are:
1)**A field**: A column, or field, is a specific category of information that exists in a table.
2)**A File**:. It is important to note that the file is organised into records that are related in logical characteristics.

3 **A record**: Please observe that a record is constituted by building up several but related fields of data. Significantly, database table records are usually in rows.

4) **Data type**: There are three data types common in most databases. The is numeric data type which are in numbers. The second data type is alpha as illustrated by students' names, faculty and departments. The third data type is alphanumeric which is a combination of numbers and alphabets as is seen in the column of street address.

5) **Table:** They are used to store data that users will access

SAE 3: Highlight at least five basic facts about Microsoft Access.

Answer to SAE 3: There are many facts to know about Microsoft Access. They include the following:

1) It is Database Management System from Microsoft
2) It is a relational database
3) Data storage is in MS Access' own file
4) Users can create tables queries, reports, and link them together
5) It has report creation capability that can work with any data source that it can access
6) It can export and import data from FoxPro, Excel, Oracles, etc
7) Heterogeneous joining of data between data set stored in different platforms can be handled by MS Access
8) In terms of programming, it is relatively compatible with Structured Query Language (SQL)
9) End users can access data from any system
10) Latest versions (from 2013) can be used to create web applications

SAE 4: List seven considerations in the design process of a data base. There are several considerations to make before embarking on Database design. The following considerations are germane:

Answer to SAE 4:

There are several considerations to make before embarking on Database design. The following considerations are germane:

Consideration 1: Table identification
Consideration 2: Primary keys
Consideration 3: Additional fields
Consideration 4: Relationship between tables
Consideration 5: Data types for fields
Consideration 6: Unwanted redundancy
Consideration 7: Storage location
Consideration 8: Additional properties for fields

Consideration 9: Best distribution method

SAE 5: A University Librarian has engaged your services to design library database management system using Microsoft Access. What preliminary questions will you ask?

 Answer to SAE 5:

The questions to ask include:

a) What purpose will the database serve or who are the ultimate end-users?
b) How many tables will be needed for the database?
c) Which fields will the database require?
d) How will the tables be related?
e) At what stage will it require to be modified or be redefined?

Validation tables: These are regarded as code tables, and they are used   for the validation of data entered into other database tables.