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AN INTRODUCTION TO COMPUTING

(For BS (04 Year) Degree Program Students & Beginners in All Fields)

By: SAEED ULLAH JAN

GOVT. DEGREE COLLEGE WARI (DIR UPPER)

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2018 and Onward

An Introduction to Computing

AN INTRODUCTION TO COMPUTING

First Edition

By

Saeed Ullah Jan

TO WHOM IT MAY CONCERN

I, Saeed Ullah Jan, Lecturer in Computer Science, Higher Education Department – Khyber Pakhtunkhwa at Govt Degree College Wari (Dir Upper) – Pakistan and a doctoral student at the Department of Computer Science & IT, University of Malakand hereby solemnly declare that my Book titled "An Introduction to Computing" for Bachelor of Studies (BS) level students and the beginners of all fields will be made available to the general public through Higher Education Department Govt of Khyber Pakhtunkhwa and all college's libraries and institutions of Pakistan. In addition, the Book will be microfilmed by the Publishing agency/company organization, and copies of the Book will be sold on demand.

Saeed Ullah Jan

Saeed Ullah Jan

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Saeed Ullah Jan

Dedication

I Dedicate this Book the Holiest Man ever Born,

Prophet **Muhammad**

صلی اللہ
علیہ وسلم

&

to my beloved family members and teachers.

Preface

This book introduces the fundamental concepts necessary for designing, using, and implementing computer systems, networking and database applications. Our presentation stresses the fundamentals of computer, networks and modeling and designing of database, the languages and practical work provided in this book is for the very beginner and step-by-step procedure for describing Windows 8, MS – Word 2010, Excel & PowerPoint. The book is meant to be used as a textbook for a one- or two-semester course in introduction to computer systems at the junior, senior, or graduate level, and as a reference book. Our goal is to provide an in-depth and up-to-date presentation of the most important aspects of Computer systems and applications, and related technologies. We assume that readers are familiar with elementary use of computer and data structuring concepts and those they have had some exposure to the basics of computer organization.

Acknowledgments

It is a great pleasure to acknowledge the assistance and contributions of many individuals to this effort. First, we would like to thank Mr. Muhammad Salim for his guidance, encouragement, and support. We would like to acknowledge the excellent work of Mr. Aziz Ur Rehman for production management and Mr. Idrees Ali Shah for a thorough checking each and every sentence of the book. We thank the following persons who have contributed to this first edition: Saeed Ur Rahman, Zafar Ahmad, Farman Ullah, and Naseer Ullah.

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INTRODUCTION TO COMPUTING

INTRODUCTION TO COMPUTING

1.1 What is Computer?

Def1: An electronic machine that can store and process information. It is defined as stored program digital computing system.

Def2: A Computer is an electronic device of wires, transistors, circuits, instructions, and data can transmit, store and manipulate information.

Def3: A Computer is a machine that accepts data and processes that data (data may be numbers, letters or both or even sounds). Information is turned into electrical pulses so that it may be processed by sorting, collating and deleting mathematical manipulation and other forms of data processing.

Def4: A computer accepts information using an input device. The information is processed by a central processing unit or stored in a storage unit i.e. Hard Disk and then processed.

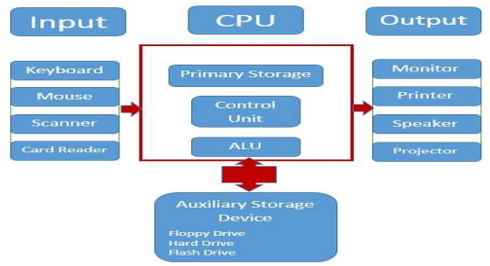


Figure 1: A block Diagram of Computer System

The result is supplied by output devices. If the input and output units are connected to a manufacturing process, the computer can control the process and the system is called a computing system.

1.2 Basic Computer Operations

To understand computer basic concept one must know about the 4 functions or Operations of the computer.

1.2.1 Input Operation

The computer receives information from users. A user enters information using input devices like keyboard, mouse or any other

devices like webcam, punch card, magnetic tapes, joystick or magnetic disk etc. The Input unit accepts information using input devices then it converts the given data to readable form and this data moves to Central Processing Unit (CPU).

1.2.2 Storage Operation

The given information stored in a computer using the different storage devices i.e. central process unit and auxiliary memory. The auxiliary memory is also known as secondary or external storage have hard devices for example Floppy, Hard Disk, Compact Disk and Flash Drive. These different storage devices have both advantages and disadvantages. Auxiliary storage speeds up information and stores it long term and permanent.

1.2.3 Processing Operation

It is considered the basic computing operation. It executes the instructions, control storage data and input or output devices attached the computer.

1.2.4 Output Operation

Last but not the least the output unit which represents results from the operations of central processing unit CPU. The result may be in hard or soft form i.e. visual display unit, printers, and headphones.

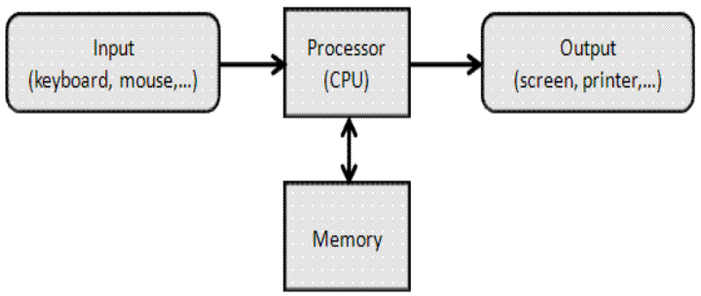


Figure 2: A Diagrammatic Representation of Computer System

1.3 History of Computer

The computer as we know it today had its beginning with a 19th-century English mathematics professor named Charles Babbage. He designed the Analytical Engine and it was this design that the basic framework of the computers of today are based on. Generally

speaking, computers can be classified into three generations. Each generation lasted for a certain period of time, and each gave us either a new and improved computer or an improvement to the existing computer.

1.3.1 First Generation 1937 – 1946

In 1937 the first electronic digital computer was built by Dr. John V. Atanasoff and Clifford Berry. It was called the Atanasoff-Berry Computer (ABC). In 1943 an electronic computer name the Colossus was built for the military. Other developments continued in 1946 the first general– purpose digital computer, the Electronic Numerical Integrator and Computer (ENIAC) was built. It is said that this computer weighed 30 tons, and had 18,000 vacuum tubes which were used for processing. When this computer was turned on for the first time lights dim in sections of Philadelphia. Computers of this generation could only perform a single task, and they had no operating system.

1.3.2 Second Generation 1947 – 1962

This generation of computers used transistors instead of vacuum tubes which were more reliable. In 1951 the first computer for commercial use was introduced to the public; the Universal Automatic Computer (UNIVAC 1). In 1953 the International Business Machine (IBM) 650 and 700 series computers made their mark in the computer world. During this generation of computers over 100 computer programming languages were developed, computers had memory and operating systems. Storage media such as tape and disk were in use also were printers for output.

1.3.3 Third Generation: 1963 - Present

The invention of integrated circuit brought us the third generation of computers. With these invention computers became smaller, more powerful more reliable and they are able to run many different programs at the same time. In1980 Microsoft Disk Operating System (MS-Dos) was born and in 1981 IBM introduced the personal computer (PC) for home and office use. Three years later Apple gave us the Macintosh computer with its icon-driven interface and the 90s gave us Windows operating system.

As a result of the various improvements to the development of the computer, we have seen the computer being used in all areas of life. It is a very useful tool that will continue to experience new development as time passes.

1.4 Classification of Computers

Computers differ based on their data processing abilities. They are classified according to purpose, data handling, and functionality.

1.4.1 Analog Computers

It accepts analog input and provides analog output information. It represents physical quantities like acceleration, temperature, distance or voltages in mechanical or electrical circuits and does not need any storage device. Examples of the analog computer are thermometer, speedometer and analog clock.

1.4.2 Digital Computer

This computer accepts digital input and provides digital output after processing information and the operation are in a binary system of 0 and 1. By manipulating the binary digits and numbers it can perform any task like analyze data, mathematical calculations etc. Examples of digital computers are Apple Macintosh, IBM PC.

1.4.3 Hybrid Computer

This computer is the combination of both analog and digital computers in terms of speed and accuracy. Hybrid computers can measure physical and digital quantities. Examples of the hybrid computer are the machine measure heartbeat in hospital, devices installed fuel pumps.

1.5 Types of Computer

There are many types of computers, some of which are given below:

1.5.1 Super Computer

The fastest and most powerful type of computer Supercomputers are very expensive and are employed for specialized applications that require immense amounts of mathematical calculations. For example, weather forecasting requires a supercomputer. Other uses of supercomputers include animated graphics, fluid dynamic calculations, nuclear energy research, and petroleum exploration.

The chief difference between a supercomputer and a mainframe is that a supercomputer channels all its power into executing a few programs as fast as possible, whereas a mainframe uses its power to execute many programs concurrently.

1.5.2 Mainframe Computer

A very large and expensive computer that is capable of supporting hundreds or even thousands of users simultaneously. In the hierarchy that starts with a simple microprocessor (in watches,

for example) at the bottom and moves to supercomputers at the top, mainframes are just below supercomputers. In some ways, mainframes are more powerful than supercomputers because they support more simultaneous programs. But supercomputers can execute a single program faster than a mainframe.

1.5.3 Mini Computer

A midsized computer called minicomputers lie between *workstations* and *mainframes*. In the past decade, the difference between large minicomputers and small mainframes has blurred, however, as has the distinction between small minicomputers and workstations. But in general, a minicomputer is a multiprocessing system capable of supporting from 4 to about 200 users simultaneously.

1.5.4 Micro Computer or Personal Computer

• **Desktop Computer:** a personal or micro-mini computer sufficient to fit on a desk.

• **Laptop Computer:** a portable computer complete with an integrated screen and keyboard. It is generally smaller in size than a desktop computer and larger than a notebook computer.

• **Laptop Computer/Digital Diary /Notebook /PDAs: a hand-sized computer.** Palmtops have no keyboard but the screen serves both as an input and output device. It is a terminal or desktop computer in a network. In this context, the workstation is just a generic term for a user's machine (client machine) in contrast to a "server" or "mainframe."

1.6 Components of a Computer

A computer system consists of both hardware and information stored on hardware. Information stored on computer hardware is often called software.

The hardware components of a computer system are the electronic and mechanical parts.

The software components of a computer system are the data and the computer programs.

1.6.1 Hardware

This refers to any part that is tangible (Touchable, Physical). The major hardware components of a computer system are:

- Processor
- Main memory
- Secondary memory

- Input & Output devices
- Slots
- Ports
- Buses

These parts are typically accommodated within the laptop or desktop unit itself, except for the desktop keyboard and mouse. What is likely the most important piece of hardware is the microprocessor chip known as the central processing unit (CPU).

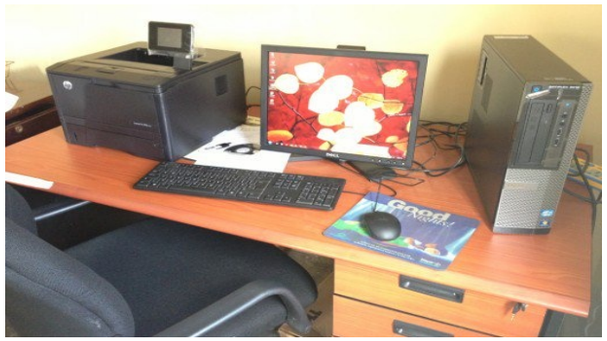


Figure 3: A typical installation of computer hardware

Figure 4: **A Diagrammatic Representation of Mother Slot where CPU is fixed**

Hard disk drive: HDDs are mechanical by design and store data on magnetic and metallic platters, which are read by the read/write

heads. This makes this type of drive rather changeable and likely to fail if used improperly.

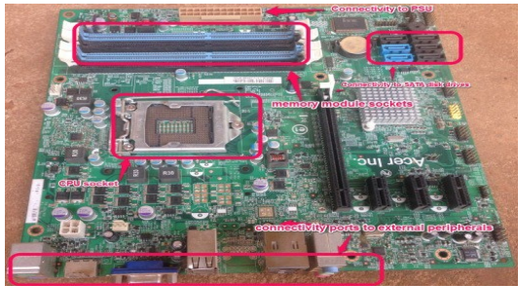


Figure 5: **Memory Slots, Ports, and Internal Buses**

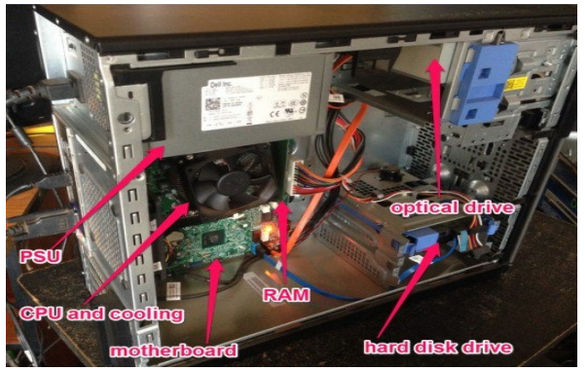


Figure 6: Different Parts of the System Unit

Connectivity to a motherboard can be internal or external. Internal devices that connect to the motherboard include:

- The microprocessor (CPU).
- Disk drive.
- Random access memory (memory modules).
- Power supply unit (PSU).

External peripherals that connect to the motherboard include:

- Monitor.

- Keyboard.
- Mouse.
- Printer.

Figure 7: Different devices Hardware like Mouse, Keyboard, Monitor and cables

1.6.2 Computer Software

Software refers to the instructions, programs, data, and protocols which run on hardware. It can be divided into two major categories. The visible part, non-touchable part or programs in the computer system are called software. Like human brain thinking or instructions for the microprocessor is termed as software. The software is written in computer languages such as Visual Basic, C/C++, and Java.

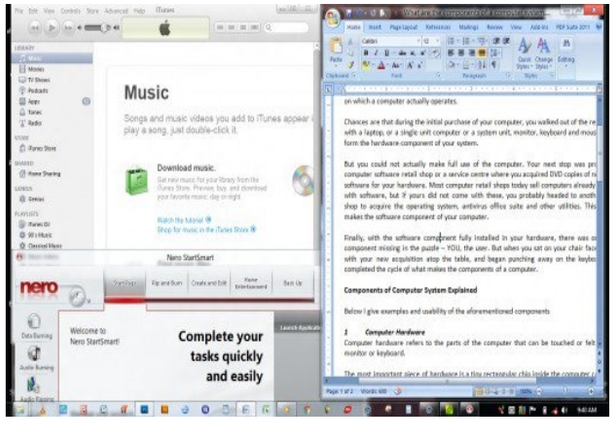


Figure 8: A Diagram shows a visualized form of Software

i) System Software

This is also commonly known as an operating system (OS). The system manages other software and devices inside the computer.

In a typical setup, the operating system is like the motherboard software. It is the first thing that is installed, followed by applications and utility software. Three popular operating systems for traditional computers include Windows, Mac OS X, and Linux.

Popular mobile operating systems include Android OS, iPhone OS, Windows Phone OS, and Firefox OS.

ii) Application Software

This is designed for end users. This software is meant to perform a specialized assignment and output useful information.

An example would be a word processing application that one uses to compose a letter or a brochure, such as Microsoft Word.

a) General Purpose Application Software: A collection of application software can come in a package that is commonly known as a software suite or General Purpose Application Software. A typical suite includes software for word processing, presentations, graphic design, and spreadsheets. Examples include Microsoft Office, OpenOffice, and iWork, Dreamweaver9.0.

Special Purpose Application Software: This is designed for a specialized assignment and output useful information. Examples include Adobe Photoshop, Corel Draw, and AutoCAD.

02

COMPUTER MEMORY

COMPUTER MEMORY

2.1 What is Computer Memory?

The computer memory is a storage area inside the computer system. Memory is mainly divided into two types: Primary Memory and Secondary Memory.

Primary Memory - Primary memory is computer memory that a processor or computer accesses first or directly. It allows a processor to access running execution applications and services that are temporarily stored in a specific memory location. Primary memory is also known as primary storage or main memory.

Secondary Memory - Secondary memory is where programs and data are kept on a long-term basis. Common secondary storage devices are the hard disk and optical disks. The hard disk has enormous storage capacity compared to primary memory. The hard disk is usually contained inside the case of a computer.

2.1.1 Types of Primary Memory

1) RAM (Random Access Memory) - Random access memory (RAM) is a type of data storage used in computers that are generally located on the motherboard. This type of memory is volatile and all information that was stored in RAM is lost when the computer is turned off. There are two main types of RAM: dynamic random access memory (DRAM), or Dynamic RAM, and static random access memory (SRAM).

DRAM: The RAM in most personal computers (PC's) is Dynamic RAM. These RAM's are made of capacitors. All dynamic RAM chips have to need a permanent refresh every few milliseconds by rewriting the data to the module.

SRAM: Static RAM (SRAM) is a lot faster and does not require refreshing. It made from a complex circuitry system called a flip-flop. SRAM retains information and is able to operate at higher speeds than DRAM. It's common to see PC manufacturers use DRAM and also used in supercomputers.

2) ROM (Read Only Memory) - Read-only memory (ROM) is a type of storage medium that permanently stores data on personal

computers (PCs) and other electronic devices. It contains the programming needed to start a PC, which is essential for boot-up; it performs major input/output tasks and holds programs or software instructions. Because ROM is read-only, it cannot be changed; it is permanent and non-volatile, meaning it also holds its memory even when power is removed. There are numerous ROM chips located on the motherboard and a few on expansion boards. The chips are essential for the basic input/output system (BIOS), boot up, reading and writing to peripheral devices, basic data management, and the software for basic processes for certain utilities.

However, these types of non-volatile memory can be altered and are often referred to as programmable ROM. One of the original forms of non-volatile memory was mask-programmed ROM. It was designed for specific data such as bootstrap, which contains the startup code. Mask-programmed ROM can never be changed. Because ROM cannot be changed and is read-only, it is mainly used for the manufacturing company information and ownership purposes.

3) Cache Memory - Cache memory is a small-sized type of volatile computer memory that provides high-speed data access to a processor and stores frequently used computer programs, applications, and data. It is the fastest memory in a computer, and is typically integrated onto the motherboard and directly embedded in the processor or main random access memory (RAM). Cache memory provides faster data storage and access by storing instances of programs and data routinely accessed by the processor. Thus, when a processor requests data that already has an instance in the cache memory it does not need to go to the main memory or the hard disk to fetch the data.

Cache memory can be primary or secondary cache memory, with primary cache memory directly integrated into (or closest to) the processor. In addition to hardware-based cache, cache memory also can be a disk cache, where a reserved portion of disk stores and provides access to frequently accessed data/applications from the disk.

4) Register - A processor register (CPU register) is one of a small set of data holding places that are part of the computer processor. A register may hold an instruction, a storage address, or any kind of

data (such as a bit sequence or individual characters). Some instructions specify registers as part of the instruction.

2.1.2 Types of Secondary Memory

1) Magnetic Tape: Magnetic tape is one of the oldest technologies for electronic data storage. The tape has largely been displaced as a primary and backup storage medium, but it remains well-suited for archiving because of its high capacity, low cost, and long durability. It is a linear recording system that is not good for random access. If the tape is part of a library, robotic selection and loading of the right cartridge into a tape drive adds more latency. In an archive, such latencies are not an issue. With tape archiving, there is no online copy for quick retrieval, as everything is vaulted for the long term.

Figure 9: **Typical Hard Disk**

2) Hard – Disk: The hard disk was created in 1953 by engineers at IBM who wanted to find a way to provide random access to high capacities of data at a low cost. The disk drives developed were the size of refrigerators, could store 3.75 megabytes of data and began shipping in 1956. Memorex, Seagate, and Western Digital were other early vendors of hard disk drive technology. Hard disk drive form-factor size has continued to decrease as the technology evolves. By the mid-1980s, 3.5-inch and 2.5-inch form factors were

introduced, and it was at this time they first became a standard in personal computers (PCs).

Hard disk drive density has increased since the technology was first developed. The first hard disk drives were able to store megabytes of data, while today they are in the terabyte (TB) range. Hitachi released the first 1 TB hard drives in 2007. In 2017, HGST announced the first 10 TB hard drives.

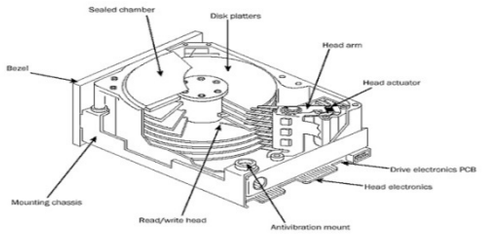


Figure 10: Parts of a Hard Disk

Most basic hard drives consist of a number of disk platters that are positioned around a spindle inside a sealed chamber. The chamber also includes read-and-write heads and motors. The motor is used to spin the platters, which hold the data, at up to 15,000 rotations per minute (a higher rpm number result in a good performance). As the platters spin, a second motor controls the position of the read-and-write heads that record information to, and read information from, tracks on each platter.

3) CD (Compact Disk) - A compact disc is a portable storage medium that can be used to record, store and playback audio, video and other data in digital form. A standard compact disc measure 4.7 inches, or 120 millimeters (mm), across, is 1.2 mm thick, weighs between 15 grams and 20 grams, and has a capacity of 80 minutes of audio, or 650 megabytes (MB) to 700 MB of data.

4) DVD (Digital Versatile Disk) - DVD is an optical disc technology with a 4.7-gigabyte storage capacity on a single-sided, one-layered disk, which is enough for a 133-minute movie. DVDs can be single- or double-sided, and can have two layers on each side; a double-sided, two-layered DVD will hold up to 17 gigabytes of

video, audio, or other information. This compares to 650 megabytes (0.65 gigabytes) of storage for a CD-ROM disk.

DVD uses the MPEG-2 file and compression standard. MPEG-2 images have four times the resolution of MPEG-1 images and can be delivered at 60 interlaced fields per second where two fields constitute one image frame. (MPEG-1 can deliver 30 non-interlaced frames per second.) Audio quality on DVD is comparable to that of current audio compact discs.

Short for Digital Versatile Disc or Digital Video Disc, a DVD or DVD-ROM is a disc capable of storing large amounts of data on one disc the size of a standard Compact Disc. CD/DVD drives were first sold in 1997. They are widely used for storing and viewing movies and other data. To play DVDs on a computer, you must have a DVD drive and a software DVD player. The picture to the right is an example of what a DVD movie may look like, which in this example is a picture of the Matrix DVD movie.

5) VCD (Video Compact Disk) - Short for Video Compact Disc VCD is a CD (CD-R or CD-RW) that contains moving pictures and sound. A VCD can hold up to 80 minutes of motion video and stereo sound on a 700MB CD. VCDs use the MPEG-1 encoding standard. On a VCD you can have chapters, video, digital images, album slideshows, audio, or a combination of media files. A VCD can be played on most DVD players and on computer DVD-ROMs and computer CD-ROMs with the aid of software.

6) Flash Memory - Flash memory is a type of nonvolatile memory that erases data in units called blocks. A block stored on a flash memory chip must be erased before data can be written, or programmed, to the microchip. Flash memory retains data for an extended period of time whether a flash-equipped device is powered on or off.

Dr. Fujio Masuoka is credited with the invention of flash memory when he worked for Toshiba in the 1980s. Masuoka's colleague, Shoji Ariizumi, coined the term flash because the process of erasing all the data from a semiconductor chip reminded him of the flash of a camera.

2.2 Memory Hierarchy

In computer architecture, the memory hierarchy separates computer storage into a hierarchy based on response time. Since response time, complexity, and capacity are

related, the levels may also be distinguished by their performance and control technologies.[1] Memory hierarchy affects performance in computer architectural design, algorithm predictions, and lower level programming constructs involving locality of reference.

Designing for high performance requires considering the restrictions of the memory hierarchy, i.e. the size and capabilities of each component. Each of the various components can be viewed as part of a hierarchy of memories in which each member mi is typically smaller and faster than the next highest member of the hierarchy. To limit waiting by higher levels, a lower level will respond by filling a buffer and then signaling to activate the transfer.

There are four major storage levels

1. Internal – Processor registers and cache.
2. Main – the system RAM and controller cards.
3. On-line mass storage – Secondary storage.
4. Off-line bulk storage – Tertiary and Off-line storage.

This is a general memory hierarchy structuring. Many other structures are useful. For example, a paging algorithm may be considered as a level for virtual memory when designing computer architecture and one can include a level of near-line storage between online and offline storage.

4bit = 1 Nibble	8bit = 1 Byte
16 Bit = 1 Word	32 Bit = Double Word
64 Bit = Quad Word	1024 Byte = 1KB
1024KB = 1MB	1024MB=1GD
1024 GB = 1TB	

*KB means Kilo Byte, MB Means Mega Byte, GB Means Giga Byte and TB Means Tera Byte

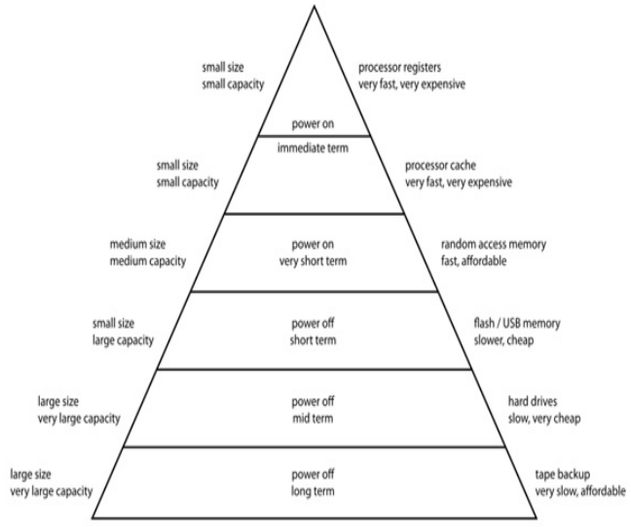


Figure 11: Computer Memory Hierarchy

03

CENTRAL PROCESSING UNIT OR PROCESSOR OR MICRO-PROCESSOR

CENTRAL PROCESSING UNIT (CPU)/PROCESSOR OR MICRO-PROCESSOR

3.1 Central Processing Unit (CPU)/Processor or Micro-Processor

A central processing unit (CPU) is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output (I/O) operations specified by the instructions.

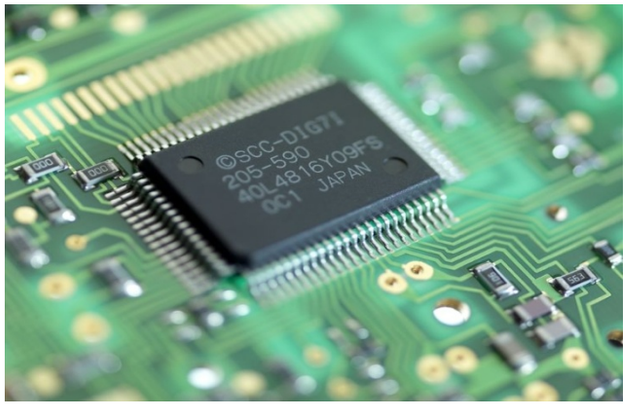


Figure 12: A Microprocessor Chip Fixed on Motherboard

A processor, or "microprocessor," is a small chip that resides in computers and other electronic devices. Its basic job is to receive input and provide the appropriate output. ... The central processor of a computer is also known as the CPU, or "central processing unit."

The main components of CPU help it in performing various functions. The three components of the CPU are following:

1. Arithmetic Logic Unit
2. Control Unit
3. Registers

Each of the components is explaining one-by-one under the following headings:-

1) Arithmetic Logic Unit (ALU): There is electronic circuitry in the arithmetic logic unit which executes all arithmetic and logical operations. Its function is obvious from its name. It performs arithmetic calculations like as addition, subtraction, multiplication, and division as well as comparisons. The unit can compare numbers, letters, or special characters. There can be more than one Arithmetic logic unit in a CPU, and these ALUs can also be used for the purpose of maintaining timers that help run the computer.

2) Control Unit (CU): There is circuitry in the control unit which uses electrical signals to instruct the whole computer system for carrying out or executing, already stored program instructions. Its name clearly shows that it controls and coordinates computer components. It extracts instructions from memory and decodes and executes them. In fact, it regulates the flow of information through the processor. In short, it can be said, this component receives, decodes, stores results and manages execution of data that flows through the CPU. Its communication with both arithmetic unit and memory is inevitable.

3) Registers: Registers are temporary storage areas which are responsible for holding the data that is to be processed. They store the instructions and data in a processor. This data is further used by Control Unit. There are some registers that are set aside for specific tasks; these generally include a program counter, stack, and flags.

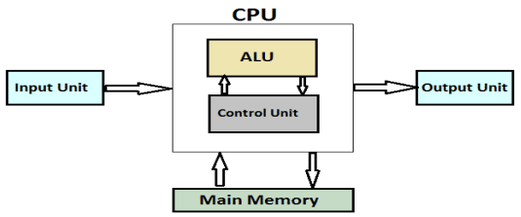


Figure 13: Block Diagram of CPU

3.2 Computer Bus

A bus, in computing, is a set of physical connections (cables, printed circuits, etc.) which can be shared by multiple hardware components in order to communicate with one another.

The purpose of buses is to reduce the number of "pathways" needed for communication between the components, by carrying out all communications over a single data channel. This is why the metaphor of a "data highway" is sometimes used. In reality, each bus is generally constituted of 50 to 100 distinct physical lines, divided into three subassemblies:

Address Bus: The address bus (sometimes called the memory bus) transports memory addresses which the processor wants to access in order to read or write data. It is a unidirectional bus.

Date Bus: The data bus transfers instructions coming from or going to the processor. It is a bidirectional bus.

Control Bus: The control bus (or command bus) transports orders and synchronization signals coming from the control unit and traveling to all other hardware components. It is a bidirectional bus, as it also transmits response signals from the hardware.

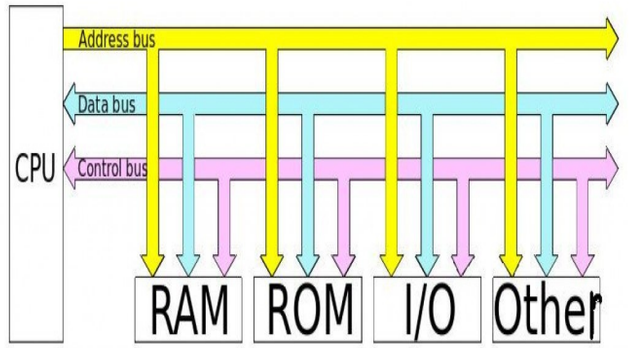


Figure 14: A System Bus

3.3 Computer Port

When referring to a physical device, a hardware port or peripheral port is a hole or connection found on the front or back of a computer. Ports allow computers to access external devices such as printers. Below is a short listing of the different computer ports you may find on a computer. The picture shows an example of a type of port on the back of a computer.

A computer port is also called as a Communication Port as it is responsible for communication between the computer and its

peripheral device. Generally, the female end of the connector is referred to as a port and it usually sits on the motherboard.

In Computers, communication ports can be divided into two types based on the type of protocol used for communication. They are Serial Ports and Parallel Ports.

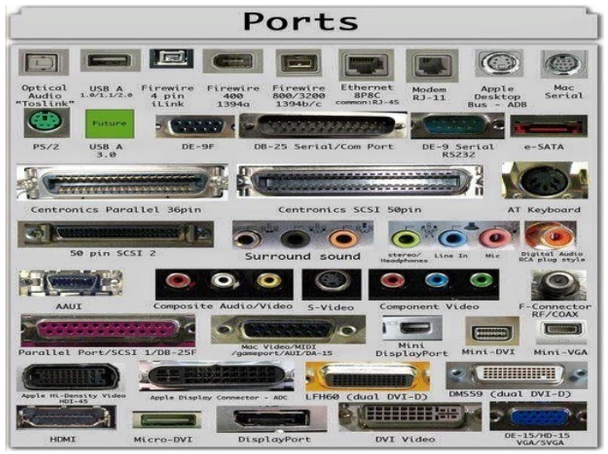


Figure 15: Different Ports in Computer System

A serial port is an interface through which peripherals can be connected using a serial protocol which involves the transmission of data one bit at a time over a single communication line. The most common type of serial port is a D-Subminiature or a D-sub connector that carry RS-232 signals.

A parallel port, on the other hand, is an interface through which the communication between a computer and its peripheral device is in a parallel manner i.e. data is transferred in or out in parallel using more than one communication line or wire. The printer port is an example of the parallel port.

3.4 Computer language

A programming language is a formal language that specifies a set of instructions that can be used to produce various kinds of output. Programming languages generally consist of instructions for a computer. Programming languages can be used to create programs that implement specific algorithms.

A language is the main medium of communicating between the Computer systems and the most common are the programming languages. As we know a Computer only understands binary numbers that is 0 and 1 to perform various operations but the languages are developed for different types of work on a Computer. A language consists of all the instructions to make a request to the system for processing a task. From the first generation and now the fourth generation of the Computers there were several programming languages used to communicate with the Computer. Here we will go into the detail of the Computer language and its types.

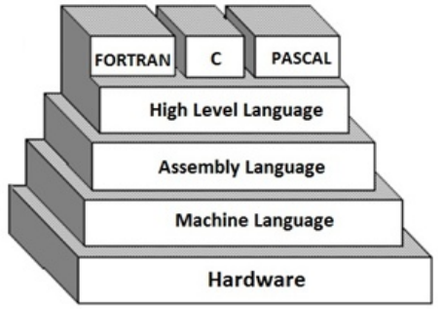


Figure 16: Computer Languages and its types

A Computer language includes various languages that are used to communicate with a Computer machine. Some of the languages like programming language which is a set of codes or instructions used for communicating the machine. Machine code is also considered as a computer language that can be used for programming. And HTML also is a computer language or a markup language but not a programming language. Similarly, there are different types of languages developed for different types of work to be performed by communicating with the machine. But all the languages that are now available are categorized into two basic types of languages including Low-level language and High-level language.

3.4.1 High-Level Language (HLL)

The high-level languages are the most used and also more considered programming languages that help a programmer to read, write and maintain. It is also the third generation language that is used and also running till now by many programmers. They are less

independent of a particular type of Computer and also require a translator that can convert the high-level language to machine language. The translator may be an interpreter and Compiler that helps to convert into binary code for a Computer to understand. There are various high-level programming languages like C, FORTRAN or Pascal that are less independent and also enable the programmer to write a program.

The Compiler plays an important role on the Computer as it can convert to machine language and also checks for errors if any before executing. There are several high-level languages that were used earlier and also now like COBOL, FORTRAN, BASIC, C, C++, PASCAL, LISP, Ada, Algol, Prolog, and Java. It is user-friendly as the programs are written in English using words, symbols, characters, numbers that need to be converted to machine code for processing.

3.4.2 Low-Level Language (LLL)

Low-level languages are the machine codes in which the instructions are given in machine language in the form of 0 and 1 to a Computer system. It is mainly designed to operate and handle all the hardware and instructions set architecture of a Computer.

Machine Language is one of the low-level programming languages which is the first generation language developed for communicating with a Computer. It is written in machine code which represents 0 and 1 binary digits inside the Computer string which makes it easy to understand and perform the operations. As we know a Computer system can recognize electric signals so here 0 stands for turning off electric pulse and 1 stands for turning on the electric pulse. It is very easy to understand by the Computer and also increases the processing speed.

The main advantage of using Machine language is that there is no need for a translator or interpreter to translate the code, as the Computer directly can understand. But there are some disadvantages also like you have to remember the operation codes, memory address every time you write a program and also hard to find errors in a written program. It is a machine dependent and can be used by a single type of Computer.

3.4.3 Assembly Language (Intermediate Level Languages)

Assembly Language is the second generation programming language that has almost similar structure and set of commands as

Machine language. Instead of using numbers like in Machine languages here we use words or names in English forms and also symbols. The programs that have been written using words, names and symbols in assembly language are converted to machine language using an Assembler. Because a Computer only understands machine code languages that's why we need an Assembler that can convert the Assembly level language to Machine language so the Computer gets the instruction and responds quickly.

The main disadvantage of this language is that it is written only for a single type of CPU and does not run on any other CPU. But its speed makes it the most used low-level language till today which is used by many programmers.

3.5 Translator in Computer

A program written in the high-level language is called as source code. To convert the source code into machine code, translators are needed.

A translator takes a program written in source language as input and converts it into a program in the target language as output.

It also detects and reports the error during translation. It translates the high-level language program input into an equivalent machine language program output. It also provides diagnostic messages wherever the programmer violates specification of the high-level.

Different type of translators

The different types of the translator are as follows:

3.5.1 Compiler

The compiler is a translator which is used to convert programs in a high-level language to low-level language.

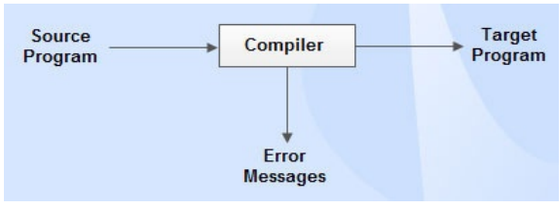


Figure 17: Function of Compiler

It translates the entire program and also reports the errors in source program encountered during the translation.

3.5.2 Interpreter

The interpreter is a translator which is used to convert programs in a high-level language to low-level language. The interpreter translates line by line and reports the error once it encountered during the translation process. It directly executes the operations specified in the source program when the input is given by the user. It gives better error diagnostics than a compiler.

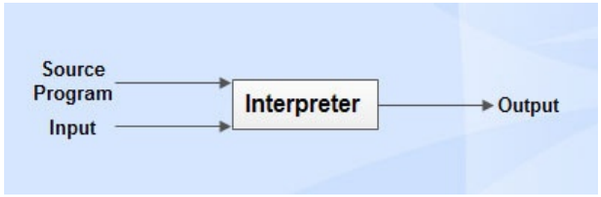


Figure 18: Function of Interpreter

3.5.3 Assembler

Assembler is a translator which is used to translate the assembly language code into machine language code.

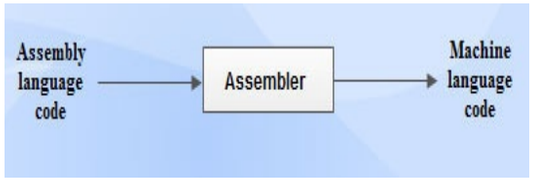


Figure 19: Function of Assembler

3.6 DIFFERENCES BETWEEN COMPILER AND INTERPRETER

S/No	Compiler	Interpreter
1	Performs the translation of a program as a whole.	Performs statement by statement translation.
2	Execution is faster.	Execution is slower.
3	Requires more memory as linking is needed for the generated intermediate object code.	Memory usage is efficient as no intermediate object code is generated.
4	Debugging is hard as the error messages are generated after scanning the entire program only.	It stops translation when the first error is met. Hence, debugging is easy.
5	Programming languages like C, C++ uses compilers.	Programming languages like Python, BASIC, and Ruby uses interpreters.

04

DATA COMMUNICATION & NETWORKING

DATA COMMUNICATION AND NETWORKING

4.1 Computer Network

A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams.

OR

A computer Network is a system in which a number of independent computers are linked together to share data and peripherals, such as files and printers. In the modern world, computer networks have become almost indispensable.

All major businesses and governmental and educational institutions make use of computer networks to such an extent that it is now difficult to imagine a world without them. Three very common types of networks include:

4.1.1 Local Area Network (LAN)

A Local Area Network (LAN) is a network that is confined to a relatively small area. It is generally limited to a geographic area such as a writing lab, school, or building. Simply the computers connected in the 100m distance are called Local Area Network (LAN).

Computers connected to a network are broadly categorized as servers or workstations. Servers are generally not used by humans directly, but rather run continuously to provide "services" to the other computers (and their human users) on the network. Services provided can include printing and fax, software hosting, file storage and sharing, messaging, data storage and retrieval, complete access control (security) for the network's resources, and many others.

4.1.2 Metropolitan Area Network (MAN)

A Metropolitan Area Network is a network that connects two or more Local Area Networks or Campus Area Networks together but does not extend beyond the boundaries of the immediate town/city.

Routers, switches, and hubs are connected to create a Metropolitan Area Network.

4.1.3 Wide Area Network (WAN)

Wide Area Networks (WANs) connect networks in larger geographic areas, such as Florida, the United States, or the world. Dedicated transoceanic cabling or satellite uplinks may be used to connect this type of global network.

Computer networks exist on various scales, from links between two computers in one room to connect computers in a building or campus to national and global networks. Various media are used to carry the communications signals: copper wire, fiber optic cables, and wireless or radio transmissions etc. Similarly, the network connecting an organization's computers might be owned and managed by the organization itself (typically in small-scale networks linking machines in a room or building) or capacity can be rented from a firm providing telecommunications services (typically in wider area networks).

4.2 Components of a Data Communication

Data communication is a process of transferring data electronically from one place to another. Data can be transferred by using a different medium. The basic components of data communications are as follows:

1. Sender
2. Encoder
3. Medium/ communication channel
4. Decoder
5. Receiver

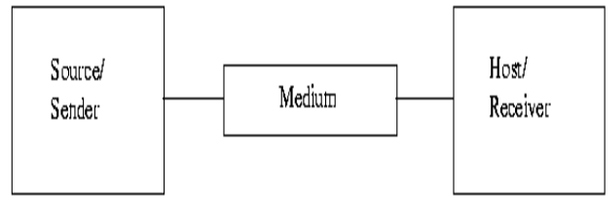


Figure 20: Diagrammatic Representation of Computer Network/Data Communication

1) Sender – Sender is a device that sends a message. The message can consist of text, numbers, pictures etc. it is also called source or transmitter. Normally, the computer is used as the sender in information communication systems.

2) Encoder – The encoder is a device that converts digital signals in a form that can pass through a transmission medium.

3) Medium / Communication Channel – Medium is the physical path that connects sender and receiver. It is used to transmit data. The medium can be a copper wire, a fiber optic cable, microwaves etc. it is also called communication channel.

4) Decoder – The decoder is a device that converts the encoded signals into digital form. The receiver can understand the digital form of message. Sender and receiver cannot communicate successfully without encoder and decoder.

5) Receiver – Receiver is a device that receives the message. It is also called sink. The receiver can be a computer, printer or another computer-related device. The receiver must be capable of accepting the message.

Figure 21: Components of Data Communication

4.3 Modes of Data Communication or Modes of Network

Transmission mode means transferring of data between two devices. It is also known as the communication mode. Buses and networks are designed to allow communication to occur between individual devices that are interconnected. There are three types of transmission mode:-

- Simplex Mode
- Half-Duplex Mode
- Full-Duplex Mode

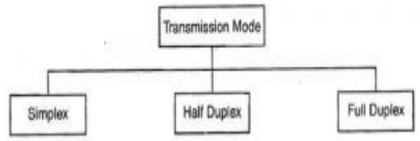


Figure 22: Transmission Modes

4.3.1 Simplex Mode

In Simplex mode, the communication is unidirectional, as on a one-way street. Only one of the two devices on a link can transmit, the other can only receive. The simplex mode can use the entire capacity of the channel to send data in one direction.

Example: Keyboard and traditional monitors. The keyboard can only introduce input; the monitor can only give the output, Radio, and Television (TV) etc..

Figure 23: Simplex Mode of Communication

4.3.2 Half-Duplex Mode

In half-duplex mode, each station can both transmit and receive, but not at the same time. When one device is sending, the other can only receive, and vice versa. The half-duplex mode is used in cases where there is no need for communication in both directions at the same time. The entire capacity of the channel can be utilized for each direction.

Example: Walkie-talkie in which message is sent one at a time and messages are sent in both the directions.

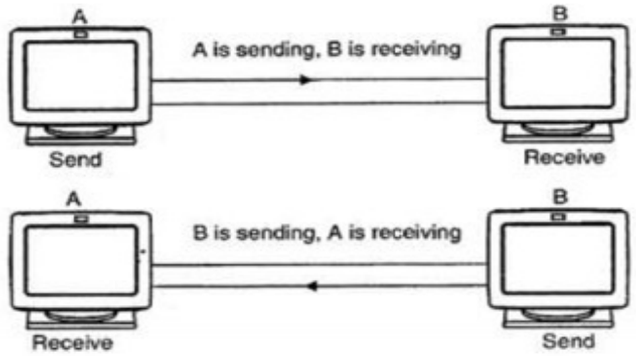


Figure 24: Half-Duplex Mode of Communication

4.3.3 Full-Duplex Mode of Communication

In full-duplex mode, both stations can transmit and receive simultaneously. In the full duplex mode, signals going in one direction share the capacity of the link with signals going in other direction, this sharing can occur in two ways:

1) Either the link must contain two physically separate transmission paths, one for sending and other for receiving.
2) Or the capacity is divided between signals traveling in both directions.

Full-duplex mode is used when communication in both directions is required all the time. The capacity of the channel, however, must be divided between the two directions. Example: Telephone Network in which there is communication between two persons by a telephone line, through which both can talk and listen at the same time.

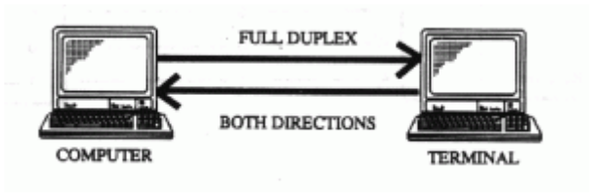


Figure 25: Full-Duplex Mode of Communication

4.3.4 Synchronous Mode of Communication

Synchronous communication relies on the presence of a clocking system at both ends of the transmission.

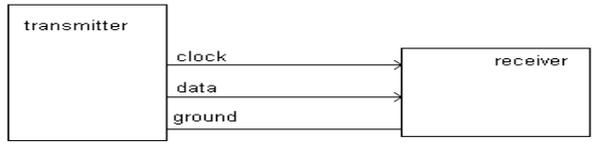


Figure 26: Synchronous Mode of Communication

These clocks must be synchronized at the beginning of the session so that the timing of the transmission—not the use of start and stop bits, as in asynchronous communication—defines where data begins and ends.

4.3.5 Asynchronous Communication

Asynchronous communication sends small blocks of data with many control bits for error correction, synchronous techniques use large blocks of data with control bits only at the start and end of the transmission.

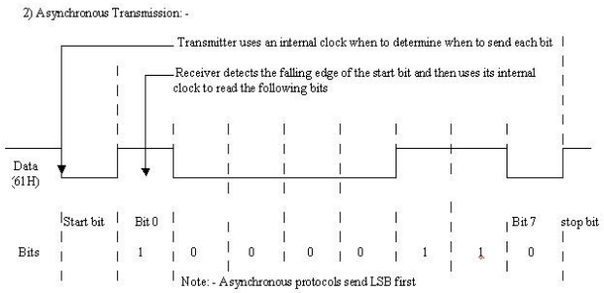


Figure 27: Asynchronous Mode of Communication

4.3.6 Parallel Communication

In data transmission, parallel communication is a method of conveying multiple binary digits (bits) simultaneously.

Figure 28: Parallel Mode of Communication

4.3.7 Serial Communication

With serial communication, which conveys only a single bit at a time?

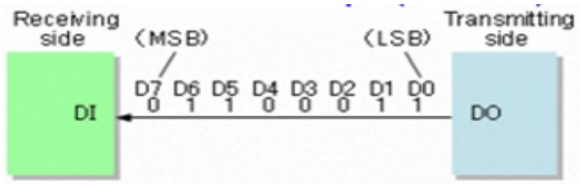


Figure 29: Parallel Mode of Communication

4.4 Network Topology

Think of a topology as a network's virtual shape or structure. This shape does not necessarily correspond to the actual physical layout of the devices on the network. For example, the computers on a home network may be arranged in a circle in a family room, but it would be highly unlikely to find a ring topology there.

Network topologies are categorized into the following basic types:

1) Bus 2) Ring
2) Star 4) Mesh

More complex networks can be built as hybrids of two or more of the above basic topologies.

4.4.1 Bus Topology

Bus networks (not to be confused with the system bus of a computer) use a common backbone to connect all devices. A single cable, the backbone functions as a shared communication medium those devices attach or tap into with an interface connector. A device

wanting to communicate with another device on the network sends a broadcast message onto the wire that all other devices see, but only the intended recipient actually accepts and processes the message.

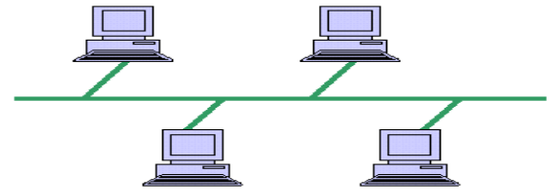


Figure 30: Bus Topology

4.4.2 Ring Topology

In a ring network, every device has exactly two neighbors for communication purposes.

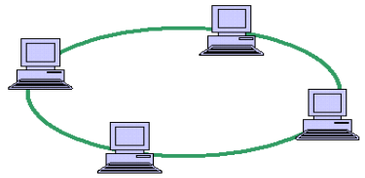


Figure 31: Ring Topology

All messages travel through a ring in the same direction (either "clockwise" or "counterclockwise"). A failure in any cable or device breaks the loop and can take down the entire network.

4.4.3 Star Topology

Many home networks use the star topology. A star network features a central connection point called a "hub node" that may be a network hub, switch or router. Devices typically connect to the hub with Unshielded Twisted Pair (UTP) Ethernet.

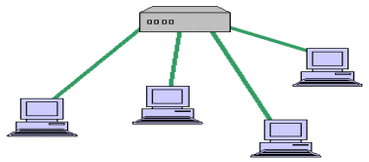


Figure 32: Star Topology

4.4.4 Mesh Topology

Mesh topology introduces the concept of routes.

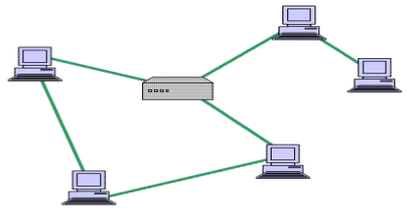


Figure 33: Mesh Topology

Unlike each of the previous topologies, messages sent on a mesh network can take any of several possible paths from source to destination. Some WANs, most notably the Internet, employ mesh routing.

4.5 Terminologies

1) Internet – The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer

Today, the Internet is a public, cooperative and self-sustaining facility accessible to hundreds of millions of people worldwide. Physically, the Internet uses a portion of the total resources of the currently existing public telecommunication networks.

2) Collaborative Computing: Collaborative computing is a diverse collection of information technologies designed to support work between individuals. Organizations implementing collaborative computing technologies do so as a way to improve workforce productivity and creativity by enabling individual workers to more readily access each other and the information they need when they need it.

OR

Interactive multimedia conferencing application software, that enables multiple parties to collaborate on textual and graphical documents. Through special software, each party to the call can

contribute to such documents, working together with the other parties.

3) What is Social Networking: A network of social interactions and personal relationships.

OR

A dedicated website or application software that enables the user to communicate with each other, by posting information, comments, messages, and images etc.

A social network is a website that brings people together to talk, share ideas and interests, or make new friends. This type of collaboration and sharing is known as social media. Unlike traditional media that is typically created by no more than ten people, social media sites contain content created by hundreds or even millions of different people.

Below is a small list of some of the biggest social networks used nowadays.

- **Bebo** (https://bebo.com/) - A popular social networking site where users can share photos, stories, their journal, and more with friends and family privately or publicly on the Internet.
- **Classmates** (http://www.classmates.com/) - One of the largest and most used websites for connecting people who graduated from a high school and allows you to keep in touch with them and any future reunions.
- **Facebook** (https://www.facebook.com/) - The most popular social networking websites on the Internet. Facebook is a popular destination for users to set up personal space and connect with friends, share pictures, share movies, talk about what you're doing, etc.
- **Google+** (https://plus.google.com/) - The latest social networking service from Google.
- **Instagram** (https://www.instagram.com/) - A mobile photo sharing service and application available for the iPhone, Android, and Windows Phone platforms.
- **LinkedIn** (https://www.linkedin.com/) - One of the best if not the best locations to connect with current and past co-workers and potential future employers.
- **MySpace** (https://myspace.com/) - Once one of the most popular social networks and viewed the website on the

Internet. See the MySpace definition for further information about this service.

- **Path** (https://path.com/) - A mobile-only social network that allows you to keep in contact with your closest friends and family.
- **Pinterest** (https://www.pinterest.com/) - A popular picture and sharing service that allows anyone to share pictures, create collections, and more.
- **Reddit** (https://www.reddit.com/) - Community of registered users submits content that is up voted by the community. Reddit has a subreddit (board) in almost every category.
- **StumbleUpon** (http://www.stumbleupon.com/) - Another very popular community of Internet users who vote for web pages they like and dislike. Stumble Upon also allows users to create their own personal pages of interesting sites they come across. See the Stumble Upon definition for additional information about this service.
- **Tumblr** (https://www.tumblr.com/) - A microblogging platform with social networking capabilities.
- **Twitter** (https://twitter.com/) - Another fantastic service that allows users to post 140 character long posts from their phones and on the Internet. A fantastic way to get the pulse of what's going on around the world.
- **Yik Yak** - Smartphone social network that connects users who are in close to each other.
- **YouTube** (https://www.youtube.com/) - An excellent network of users posting video blogs or Vlog's and other fun and exciting videos.

4) Email: Short for electronic mail, e-mail or email is information stored on a computer that is exchanged between two users over telecommunications. More plainly, e-mail is a message that may contain text, files, images, or other attachments sent through a network to a specified individual or group of individuals. The first e-mail was sent by Ray Tomlinson in 1971.

05

INTRODUCTION TO DATABASE

INTRODUCTION TO DATABASE

5.1 Introduction

A database is an integrated collection of logically related records or files consolidated into a common pool that provides data for one or more multiple uses. One way of classifying databases involves the type of content, for example bibliographic, full-text, numeric, and image. Other classification methods start from examining database models or database architectures. The data in a database is organized according to a database model. The relational model is the most common.

A Database Management System (DBMS) consists of software that organizes the storage of data. A DBMS controls the creation, maintenance, and use of the database storage structures of organizations and of their end users. It allows organizations to place control of organization-wide database development in the hands of Database Administrators (DBAs) and other specialists. In large systems, a DBMS allows users and other software to store and retrieve data in a structured way.

Database management systems are usually categorized according to the database model that they support, such as the network, relational or object model. The model tends to determine the query languages that are available to access the database. One commonly used query language for the relational database is SQL, although SQL syntax and function can vary from one DBMS to another. A great deal of the internal engineering of a DBMS is independent of the data model and is concerned with managing factors such as performance, concurrency, integrity, and recovery from hardware failures. In these areas, there are large differences between products.

Example: Let us consider a simple example that most readers may be familiar with: a COLLEGE database for maintaining information concerning students, courses, and grades in a college environment. Figure 1 shows the database structure and a few sample data for such a database. The database is organized as five files, each of which stores data records of the same type.3 The STUDENT file stores data on each student, the COURSE file stores data on each course, the SECTION file stores data on each section of a course, the GRADE_REPORT file stores the grades that students receive in the

various sections they have completed, and the PREREQUISITE file stores the prerequisites of each course.

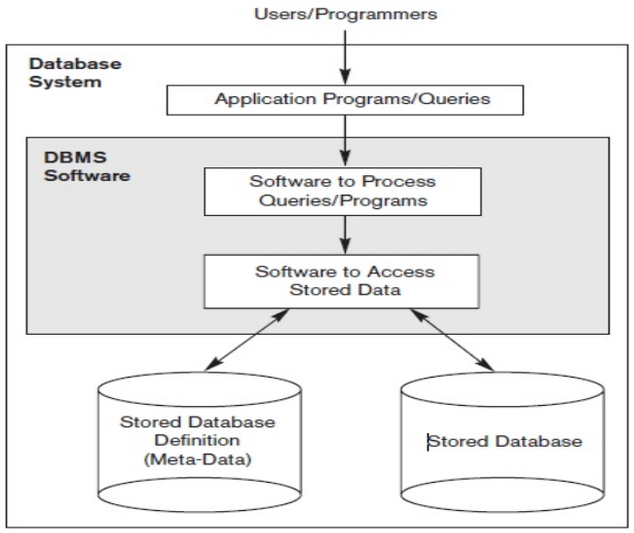


Figure 34: A Simple Database for a College

5.2 Types of Database

A database is basically a repository of data which is devised in order to support efficient data storage. In addition to data storage, a database also assists in retrieval and maintenance of data stored in it. There are many different types of databases.

A database holds data and assists in making it reachable through various ways. A database is known for its regular and systematically defined structure. Some important characteristics of databases are – Concurrent use – Many users can access the database concurrently

Structured and described data – In addition to data, it also consists of complete definition and description of data Separation of Data and Applications – Due to this feature it is not required for application software to known about the physical data storage. Data Integrity – Data remains protected from the unauthorized access and changes Transactions – It refers to the features which maintain the atomicity; which means a consistent state. Data Persistence – It refers to the durability of the data which must not be dependent on any of the

system features. Generally, databases can be categorized on the basis of a number of users, location, form of data saved in it, etc. Generally, all of the databases fall in one of these types

5.2.1 Hierarchical Databases (DBMS)

In the Hierarchical Database Model, we have to learn about the databases. It is very fast and simple. In a hierarchical database, records contain information about these groups of parent/child relationships, just like as a tree structure. The structure implies that a record can have also repeating information. In this structure Data follows a series of records; It is a set of field values attached to it. It collects all records together as a record type. These record types are the equivalent of tables in the relational model, and with the individual records being the equivalent of rows. To create links between these record types, the hierarchical model uses these type relationships.

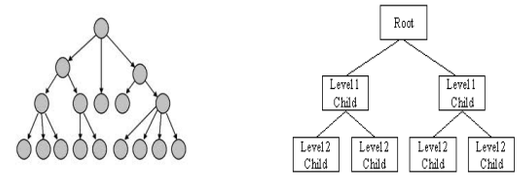


Figure 35: **Hierarchical Database**

5.2.2 Distributed Database

It consists of a set of databases which are located on different computers, but all these databases work as one database logically. Therefore, the data can be accessed and modified simultaneously with the help of a network. It is controlled by a local DBMS. It is important to maintain consistency while dealing with this type of arrangement.

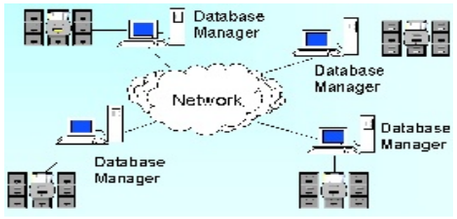


Figure 36: Distributed Database

5.2.3 Network Database

Network databases are mainly used on large digital computers. It more connections can be made between different types of data, network databases are considered more efficient.

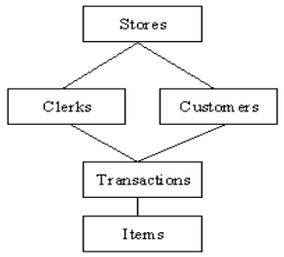


Figure 37: Network Database

It contains limitations must be considered when we have to use this kind of database. It is Similar to the hierarchical databases; network databases. Network databases are similar to hierarchical databases by also having a hierarchical structure. A network database looks more like a cobweb or interconnected network of records.

In network databases, children are called members and parents are called occupier. The difference between each child or member can have more than one parent.

5.2.4 Relational Database

In relational databases, the relationship between data files is relational. Hierarchical and network databases require the user to pass a hierarchy in order to access needed data. These databases

connect to the data in different files by using common data numbers or a key field. Data in relational databases is stored in different access control tables, each having a key field that mainly identifies each row.

In the relational databases are more reliable than either the hierarchical or network database structures. In relational databases, tables or files filled up with data are called relations (tuples) designates a row or record, and columns are referred to as attributes or fields.

Relational databases work on each table has a key field that uniquely indicates each row, and that these key fields can be used to connect one table of data to another.

In the relational database, we have to follow some properties which are given below. Its values are atomic, each row is alone, and column values are the same thing. The columns are undistinguished. The sequence of rows is insignificant and each column has a common name. Relational databases can be used with little or no training. Its entries can be modified without specifying the entire body.

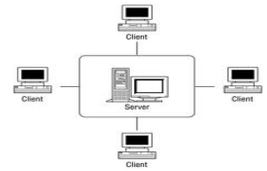


Figure 38: Relational Database

5.3 Basic Terminologies of Relational Database

1) Entity: An entity is a thing or object of importance about which data must be captured. All things aren't entities—only those about which information should be captured. Information about an entity is captured in the form of attributes and/or relationships. If something is a candidate for being an entity and it has no attributes or relationships, it isn't an entity. Database entities appear in a data model as a box with a title. The title is the name of the entity. The entity must be written in capital letters and must be within a rectangle. e.g

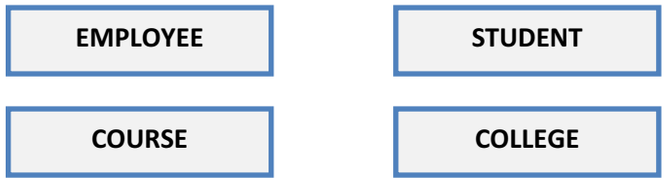


Figure 39: Entities

2) Attributes: An attribute describes information about an entity that must be captured. Each entity has zero or more attributes that describe it, and each attribute describes exactly one entity. Each entity instance has exactly one value—possibly NULL—for each of its attributes. An attribute value can be a numeric, a character string, a date, a time or some other basic data value. By common entity naming conventions, an entity name must be singular because each entity names an instance. The attribute must be written in small letters and enclosed within a circle. e.g.

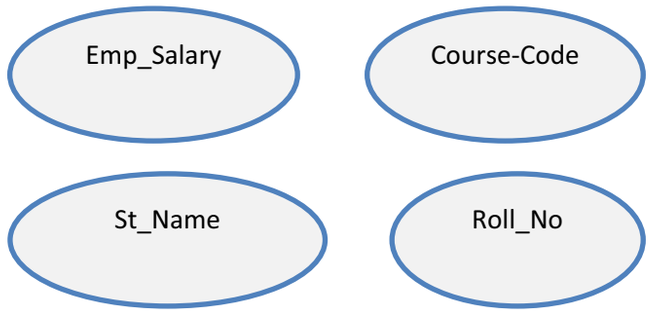


Figure 40: Attributes

5.3 Relationship/Association

A relationship is established between two database tables when one table has a foreign key that references the primary key of another table. This is the basic concept behind the term *relational database*.

1) One-to-one: This type of relationship allows only one record on each side of the relationship.

Country – has – one – capital

Person-married-to-Person

2) One-to-many: A one-to-many relationship allows a single record in one table to be related to multiple records in another table.

Teacher – Teaches – many – Subjects

Student – has – many – Skills

3) Many-to-many: This is a complex relationship in which many records in a table can link to many records in another table.

Students – Study – Many Courses

Teachers – have Taught – Different Courses

4) Unary Relationship: A unary relationship is when both participants in the relationship are the same entity. For example, Subjects may be conditioned for other subjects.

Person – manages – Person

Subject – prerequisites for Subject

5) Binary Relationship: A binary relationship is when two entities participate and is the most common relationship degree.

Teacher – teaches – subject

Student – Taught – Course

6) Tertiary Relationship: A ternary relationship is when three entities participate in the relationship. For example, The College might need to record which teachers taught which subjects in which courses.

College – Teachers – Subject

Vehicle – Warehouse – Meson

5.4 Generalization & Specialization

Generalization, this term is often used while designing any relational Schema. If designing proceeds in a bottom-up manner then it is featured as Generalization. If the entities, that are figured out to create a schema shares some similar features, then they are combined to form a higher-level entity.

In generalization, we say if some lower level entities have some characteristics in common than they are clubbed to form a new higher level entity that will further combine with some entities to form a new higher level entity. In generalization, there can never be a high-level entity without any lower level entity.

Generalization is always applied to a group of entities, and if overviewed it seems to reduce the size of a schema.

Specialization is a designing procedure that proceeds in a top-down manner. Specialization is just opposite to Generalization. In specialization, we split an entity to form multiple lower level entities. These newly formed lower level entities inherit some features of the higher level entities. It may happen that a higher level entity may not split further and hence, it may not have any lower

level entity. Specialization is always applied to a single entity, and if overviewed, it increases the size of a schema.

5.5 Difference between Generalization & Specialization

The following points best explain the main difference between the aforesaid terms:

- The fundamental difference between generalization and specialization is that a Generalization is a bottom-up approach. However, specialization is a top-down approach.
- Generalization, all the entities that share some common properties to form a new entity. On the other hands, specialization spilled an entity to form multiple new entities that inherit some properties of the spat entity.
- In generalization, a higher entity must have some lower entities whereas, in specialization, a higher entity may not have any lower entity present.
- Generalization helps in reducing the size of schema whereas, specialization is just opposite it increases the number of entities thereby increasing the size of a schema.
- Generalization is always applied to the group of entities whereas; specialization is always applied to a single entity.
- Generalization results in a formation of a single entity whereas, Specialization results in the formation of multiple new entities.

06

COMPUTER AND SOCIETY

COMPUTER AND SOCIETY

6.1 Introduction

This question of computer and society can be answered in many different ways. In light of this, let me give you a number of ways in which computers have changed our society.

Because computers have changed the way information is saved and accessed. Now with a few clicks on a computer, people can access almost any piece of information. The speed at which people can access information has never been faster. We can say that the computer has democratized almost all information.

6.2 Effects of Computers on Society

1) The topic of ***Computers and Society*** is a constantly adapting concept. ***Computers*** are heavily entwined in almost everything we do. Their use is not an unmixed blessing.

2) A theoretical study that inquiries into semantic, logical, and epistemological issues in ethics. It investigates the meaning of ethical terms, the nature of value judgments, and the justification of ethical theories and judgments.

3) You can stay informed about the latest technology by reading periodicals, visiting websites different websites, subscribing to print and online newsletters and publications, and reading technology columns in your local newspaper.

4) Being able to understand computers and related systems. It is important because it can increase your career options, and help you to use future technology more effectively. Our world is changing.

5) One important way in which computer technology is affecting work is by reducing the importance of distance. In many industries, the geographic distribution of work is changing significantly.

6) One of the most significant outcomes of the progress of computer technology is probably electronic commerce over the Internet, a new way of conducting business.

7) The rapid increase in computing and communications power has raised considerable concern about privacy both in the public and private sector.

8) Many issues also surround free speech and regulation of content on the Internet, and there continue to call for mechanisms to control objectionable content. However, it is very difficult to found a sensible solution. Dealing with indecent material involves understanding not only the views on such topics but also their evolution over time.

9) The Social Impact of Computers should be read as a guide to the social implications of current and future applications of computers. Among the basic themes presented are the following: the changing nature of work in response to technological innovation as well as the threat to jobs; personal freedom in the machine age as manifested by challenges to privacy, dignity, and work; the relationship between advances in computer and communications technology and the possibility of increased centralization of authority; and the emergence and influence of artificial intelligence and its role in decision-making, especially in military applications.

10) The computer has affected every field of life. People use a computer for performing a different task. Computer completes the many tasks easily and quickly. Many companies use the computer to keep the record and maintain the data. Banks use a computer for maintaining accounts and manage the financial transactions. Bank provides facility online transaction. We transfer cash from one country to another any place. Bank provides the credit card and debit card we use for online shopping. The Computer used for paying different bills like electricity, telephone and many more. Computers are also used to manage their home budget.

The following are also included in the topic of the social impact of computer in our society:

6.2.1 Positive Impact

1. Any professional individual like doctors, engineers, businessmen etc. undergo a change in their style or working pattern after they get the knowledge of computer.
2. An individual becomes more competent to make decisions due to the computer because all the information required to take the decision is provided by the computer on

time. As a result, any individuals or institutions get success very fast.

3. The person working at the managerial level becomes less dependent on low-level staff like clerks and accountants. Their accessibility to the information increases tremendously. This improves their working patterns and efficiency, which benefit the organization and ultimately affects the society positively.
4. In common life also, an individual gets benefited with computer technology. When airports, hospitals, banks, departmental stores have been computerized, people get quick service due to the computer system.
5. Computers have created new fields of employment. These employments are in the field of designing, manufacturing, teaching, etc.

6.2.2 Negative Impact

1. Due to many reasons, if the data stored in the computer is lost, the person responsible for handling the computer will have to tolerate a lot.
2. People do not use their mind for common arithmetic, which gradually results in loss of their numerical ability.
3. Today, any person who does not have the knowledge of computer is considered the second class citizens.
4. People have a fear that growing children may lose their common sense abilities like numerical ability due to total dependence on computers.
5. Due to the computerization workload for the employees reduces many times. As a result, many organizations may require removing some of its employees. It produces the dissatisfaction and lack of security among the employees. Due to this, employees do not corporate the organization. As a result, the output can be disastrous.
6. As a result of the introduction of new technology in an organization, the organization may need to spend a tremendous amount on the training of its employees.

6.2.3 Impact on Human Life

When computers were first invented it had a big effect on people's lives all around the world. "Stop and imagine life without computers". Today living without a computer is almost impossible

for most people in the world since they depend on it for their everyday programs. People all around the world use the computer to connect with people thousands of miles away and computers have made the lives of today's growing society a lot easier. The amount of computer users has doubled in the past decade with more people trying to get their hands on a computer to make things easier for them. With a click of a button and in a matter of seconds you can transfer information from one place to the other side of the world right from the comfort of your room. Computers are the most modern and most important machines in the 20th century.

1. Although computers have influenced people in a good way there is a bad side to it too. Computers have a negative effect on the environment, society, and people. First of all, computers contain hazardous elements like lead and mercury which is very toxic and can damage the environment. When computers are not disposed properly or if not recycled then it can ruin the environment with its harmful chemicals. Computers consume a lot of energy which can pollute the environment (atmosphere).
2. Not only computers have a negative impact on the environment it also has a negative impact on humans too (as well). The computer can damage the human brain due to using the computer continuously and it can cause pain in the body like the hands, back legs etc. if not used properly and due to repetitive motion, computers make the society very inactive since people get addicted to it and using it too much leads them to miss out on their daily activities such as exercise.

6.3 Uses of Computer

Use of *computer* on regular basis in our life is very important. Technically in daily life *computer* is used to convert raw facts and data into meaningful information and knowledge. *Computer* science is explored and challenged by humans daily. The *computer* is an electronic magical device for our life.

Computers have become an essential part of modern human life. Since the invention of the computer, they have evolved in terms of increased computing power and decreased size. Owing to the widespread use of computers in every sphere, Life in today's world would be unimaginable without computers. They have made human lives better and happier. There

are many computers uses in different fields of work. Engineers, architects, jewelers, and filmmakers all use computers to design things. Teachers, writers, and most office workers use computers for research, word processing and emailing. Small businesses can use computers as a point of sale and for general record keeping.

1) Computer in Education

Nowadays, mostly all schools, colleges, and universities are giving more emphasis to computer education including it in their curriculum. In these institutions in addition to giving solely computer education, computers have become essential for teaching other subjects as well. Classrooms and libraries are efficiently utilizing computers to make the education much more interesting. Unlike recorded television shows, computer-aided education and computer based training packages are making learning much more interactive.

Computers have its dominant use in the education field which can significantly enhance performance in learning. Even distance learning is made productive and effective through internet and video-based classes. Researchers have massive usage of these computers in their work from the starting to till the end of their scholarly work.

2) Computers in our Health and Medicine

Most of the medical information can now be digitized from the prescription to reports. Computation in the field of medicine allows us to offer varied miraculous therapies to the patients. ECG's, radiotherapy wasn't possible without computers.

3) Aid of Computers at Financial Institutions

We know well that computers are being used by the financial institutions like banks for different purposes. The foremost important thing is to store information about different account holders in a database to be available at any time. Keeping the records of the cash flow, giving the information regarding your account,

4) Computers for our Pass time

Computers are now the major entertainers and the primary pass time machines. We can use computers for playing games, watching movies, listening to music, drawing pictures.

5) Computers are a part of our Transport System

With internet on computers we can know the details of the buses or trains or the flight available to our desired destination. The

timings and even the updates on the delay can also be known through these computers. We can book our tickets through online. Staff of the transport system will keep a track of the passengers, trains or flight details, departure and arrival timings by using computers.

6) Inevitable use of Computers in Business and Corporate Stages

Information shared can be recorded by using computer. Official deals and the issues were made even through online. We use email system to exchange the information. It has wide uses in marketing, stock exchanges and bank. Even the departmental stores can't run effectively without computer.

7) Wonders of Computer in E-Commerce

Electronic mail is the revolutionary service offered by the computer. Video Conferencing is also another major advantage. Electronic shopping through online shopping added favor to purchaser and merchants. Electronic banking is now at your hand where every bank has online support for transaction of monetary issues. You can easily transfer your money anywhere even from your home.

8) Computer at our Defense

Computers are the main tools which help in developing missiles and other equipment in the reference system. Designing and the maintenance are possible only through computers. Computer builds the links between the soldiers and commanders through the satellite. Construction of weapons and controlling their function is not possible without the aid of computers. The list of the criminals and the records of the cops are maintained regularly in the system.

9) Computer is today's Designer

As per the title, computers aid in designing buildings, magazines, prints, newspapers, books and many others. The construction layouts are designed beautifully on system using different tools and software's.

6.4 Legal, Ethical and Moral Aspects of Computer

The studies of moral, legal, and social issues involving cyber-technology….the impact of cyber-technology on our social, legal, and moral systems…evaluating social policies and laws that have been framed in response to issues generated by its development and use." This means that as new technologies are developed we cannot

fully see the impact on anyone environment without first using the technology

Computer science has been around for the last 50 years and is playing a larger role in our lives and attracting more attention with each passing year. Technologies will continue to expedite productivity and facilitate research towards a greater goal. However with each new technology concerns become greater for safety and the impact that those technologies will have on their respective environments. Computer science students often limit their scope of the computer science field to the contents of the courses offered at universities or colleges. Many students simply do not see the big picture and the responsibilities involved in the field of computer science. Of course, the scenarios that one might enact during a new technology's emergence are almost limitless, with both intended and unintended results. Examples of this are not hard to find; we simply need to look towards the Internet or classic unethical practices of businesses. I present here two examples of applied cyber-ethics that computer science students should consider. These certainly are not the only applications a computer science student should consider; in fact, every application of cyber-ethics is important for proper management of conduct and behavioral norms.

For example, computer scientists need be aware of are medical applications of technology. The very lives of patients often depend on the technology diagnosing and treating their illness. In this context ethics and morality are no longer dealing with components and circuitry; rather, they are dealing with a human life.

07

WINDOWS 8 TUTORIALS

WINDOWS 8 TUTORIALS

7.1 Introduction

This part will enhance the practical skill of the readers. This work is chosen for beginners and mandatory for everyone living in this technological world.

Most basic computer users only need to know a few things about their operating system. In this chapter, we will cover the basics of Windows 8. We will begin with the Start Menu. Then move on to Desktop and Personalization Settings - including the screen saver, display options, and mouse.

If you have used other versions of Windows in the past there is a huge change with Windows 8. The start menu is now a full screen, and settings are different as well. It is a whole new look and feel to navigating this operating system.

Let's begin with your start menu and desktop.

7.2 Windows 8 Start Menu

The Windows 8 start menu is where you will find and access all of your programs. Windows 8 default Start Menu will look like this. This looks a lot different than Microsoft's original start menu design. These programs shown here are the most frequently used programs and can be modified to suit your needs. We will go over how to modify this in the pinning tutorial.

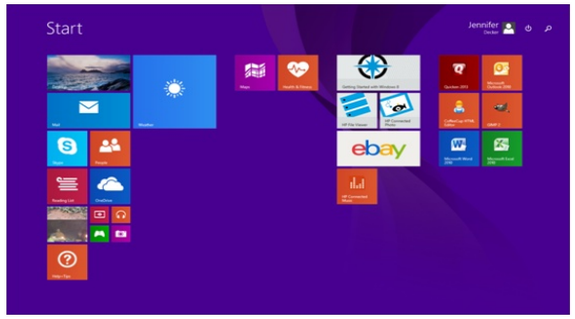


Figure 41: Screenshot of Microsoft's original start menu design

If you mouse over the lower left of this window you will see a downward pointing arrow. Click on this arrow to see all of the programs installed on your computer.

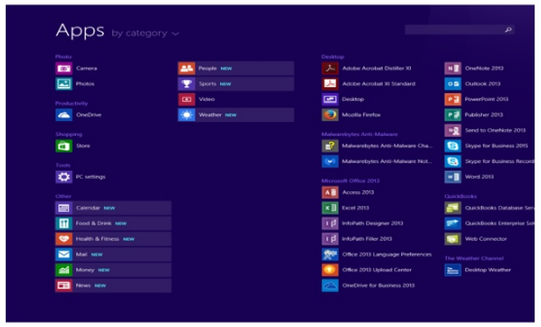


Figure 42: Screenshot of start menu Windows 8

To access the entire programs scroll to the right using either the scroll bar at the bottom or simply place your mouse to the right of the screen and the window will move to the right. Many of the new Windows 8 computers have touches screen capabilities. If your machine has a touchscreen, you can slide your finger across the screen to move it as well.

The search bar in the upper right corner can be useful until you get used to where all of the programs are located. Type the name of the program in the search bar as you type programs that match the text will appear in the start window.

7.3 Windows 8 Desktop

A computer desktop allows you to arrange the icons on the electronic desktop just as you arrange real objects on a real desktop by moving them around, putting one on top of another, reshuffling them, and throwing them away.

Many users put files and shortcuts to programs on their desktop so they can find them easily. I would like to show you some fun features of the Windows 8 Desktop. Start by right-clicking anywhere on the desktop you can to access the features menu.

Put your mouse over View.

Figure 43: Screenshot for Windows 8 Desktop

This will bring up another menu you can use to change the size of your icons by selecting, Large Icons, Medium Icons, or Icons. You can also automatically arrange your icons with Auto Arrange, or hide all icons on your desktop by clicking Show Desktop Icons to uncheck it.

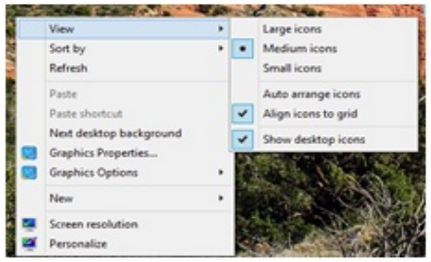


Figure 44: Screenshot Right-Click of Mouse on Desktop for Different Options

1) Sort: Right-click again anywhere on your desktop and put your mouse over Sort By to make a submenu will appear. When you click on Name it will sort all icons on your desktop alphabetically. This is a useful tool when you start getting several icons on your desktop.

2) Personalize: The Personalization Window is where you can change the look and feel of your desktop. Click on the Desktop Background link. Right, click anywhere on the desktop to bring up

the features menu, then click on Personalize and a window will come up that looks like the image below.

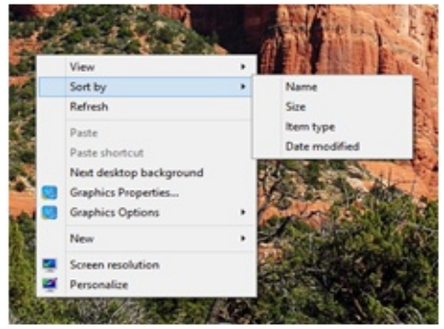


Figure 45: Screenshot Right-Click of Mouse on Desktop for Different Options

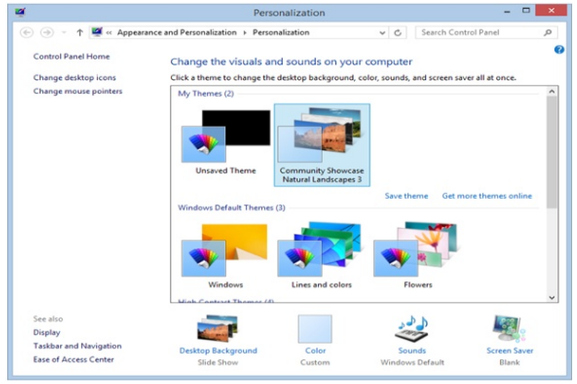


Figure 46: Screenshot of Personalize Window

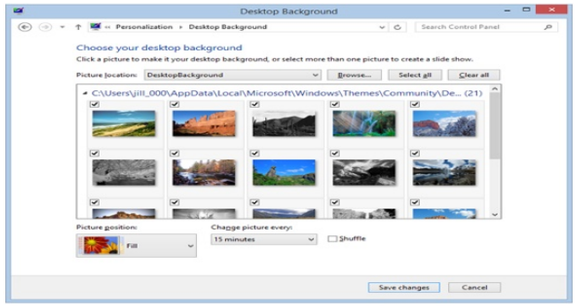


Figure 47: Screenshot of Different Desktop Pictures

When the desktop background window comes up, use the scroll bar on the right to scroll through the default pictures. Choose the picture you would like to have displayed on your desktop by clicking on it with your left mouse button. Any picture with a check mark will rotate through. The pictures will change based on the selected time in the drop-down menu Change picture every:

3) Picture Position: In this selection, you will have options on how the pictures you select will display on your desktop.

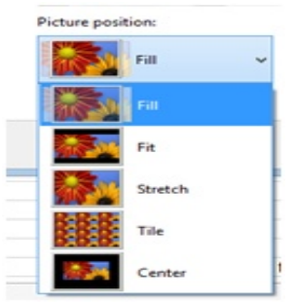


Figure 48: Screenshot of Picture Position

- Fill will have the image fill the entire screen.
- The fit will modify the image possibly adding a black background to the image to make it fill the screen if the picture isn't large enough.
- Stretch will enlarge the image to fit the screen. You need to be careful of this one. If the picture is not a high-quality image it may turn out blurry.

- The tile will take the same picture and display it multiple times on the screen just like the example.
- If your images are the lower quality center is a good option because it will center the picture on the screen and fill in the background with a color you select. This will not distort your image.

4) Picture Location: You can click the drop-down arrow next to Picture Location and choose Windows Wallpapers then scroll through the default items in the section below. Click on a picture you think you might like and it will let you preview it on your desktop.

I have found that many parents, grandparents, and pet owners like to have pictures of their loved ones on their desktop.

To insert a series of your own pictures click on Browse button next to Picture Location. A Window will open for you to find a folder.

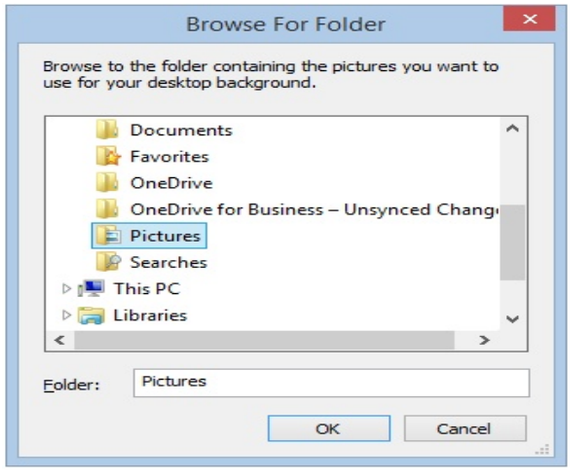


Figure 49: Screenshot for Browsing Picture of your own choice from Computer

Click on the folder and click OK. The pictures in the selected folder will appear in the preview section below Picture Location.

Place a checkmark next to the pictures you would like to scroll through on your desktop. Select the amount of time you would like each image to display and click Save Changes.

7.4 Windows 8 Screen Saver, Color, and Mouse Pointers Options

Personalization settings are a way to make your computer look and feel more like your own. You can customize the look, feel and actions of your computer to meet your needs and personality.

7.4.1 Screen Saver

1) Screen Saver: A screensaver is a program which displays either a completely black image or a constantly changing image on a computer monitor to prevent a stationary image from "burning" into the phosphor of the screen.

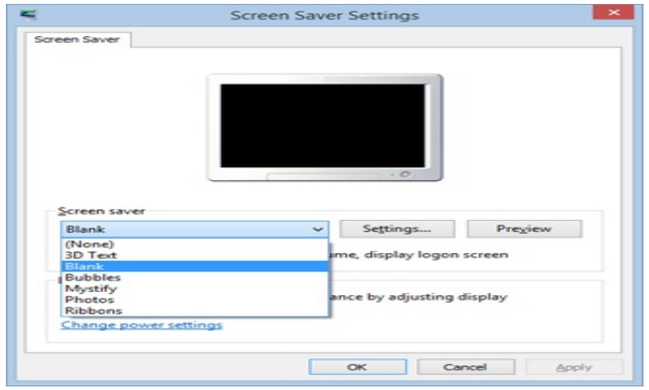


Figure 50: Screenshot of Screen Saver

Screensavers usually start automatically after the computer has had no user input for a preset time.

If you have exited out of the Personalization settings window go to your desktop, right click and select Personalize. Click the Screen Saver Link in the Personalization window.

You can see the many options for screensavers by clicking the drop-down menu in the screensaver section. By default, it will be set to blank. This will just show a black screen when no input is received.

2) 3D Text Setting: The first selection is 3D Text. Click on this selection then click the settings button. This will open 3D Test Settings window. In this window, you can customize the text that you would like to scroll across your screen when it has been left idle.

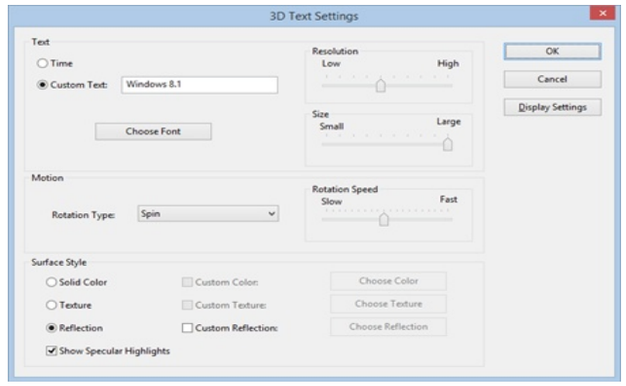


Figure 51: Screenshot of 3D Text Setting

Some will put a company name or an inspirational message. Type the text you would like to display in the Custom text field. You can change the resolution and size of the text by sliding the bar back and forth. To do this, click on the bar hold the mouse button down and move the mouse right or left to the setting you would like.

3) Font Setting: Click on Choose Font to personalize the font style. Scroll through the selections and click on your choice. You can preview what your text will look like in the Sample section as you click on the options. Once you have made your choice click OK to return to the 3D Test Settings window.

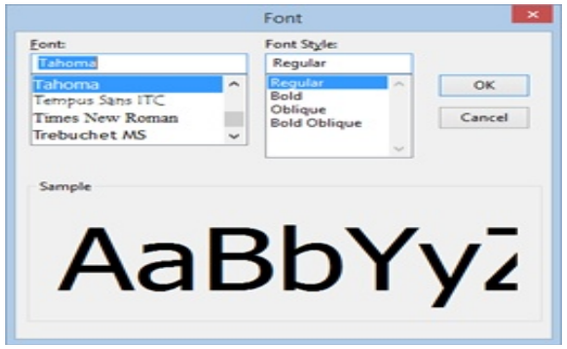


Figure 52: Screenshot of Font Window

4) Rotation of Text: Motion in the Rotation window will give you several options on how the text will move on your screen. Use the drop-down arrow in the Motion section to make your selection. To change the speed of the motion of the text slide the Rotation speed bar.

5) Surface Style: Surface Style is where you can change the color of the text or choose a texture or reflection. When you have made your selection it will darken the checkbox selections for you to customize it. Anything unselected will be left gray and unavailable for modification.

When you are finished editing, your text click OK to return to the Screen Saver Settings window.

6) Mystify and Ribbons: The Bubbles selection on the Screen Saver selections will just float bubbles over whatever screen you have open. Mystify and Ribbons will change the screen to color patterns that fill your screen.

7) Photos on Screen Saver Option: Just like the Desktop, many people like to have a slideshow of photos for their screen saver.

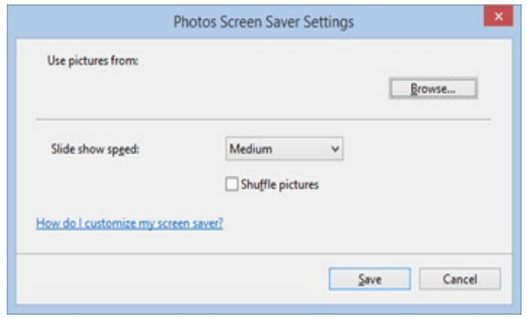


Figure 53: Screenshot of Picture Settings

To choose this selection click Photos from the drop-down menu then click the settings button.

In the Photos Screen Saver Settings window click Browse. Select the folder you would like to pull the pictures from. Choose the speed and I prefer to shuffle my pictures so check the box next to Shuffle pictures and click Save to return to the Screen Saver Settings window. Once you have made your selection click on it and click the Preview button. Your screen saver will appear on your screen until you move your mouse or press a button on your keyboard.

8) Timing Option for Screen Saver: The timing before your screen saver comes on can change where it says Wait under the screen saver drop down menu. You can change this by clicking on the up and down arrows with your left mouse button. You don't want the time to be too long because that defeats the purpose of the screen saver. Set the Wait time between 1 and 15 minutes.

9) Color & Appearance: Click OK when you are finished making your changes and you will return to the Personalization window.

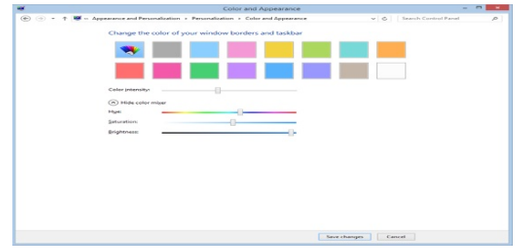


Figure 54: Screenshot of the color and Appearance Window

7.4.2 Mouse Pointers

1) Cursor: Once you are back to the Personalization window click on Change Mouse Pointers. The Mouse Pointers link is a great tool if you have trouble seeing the cursor or are.

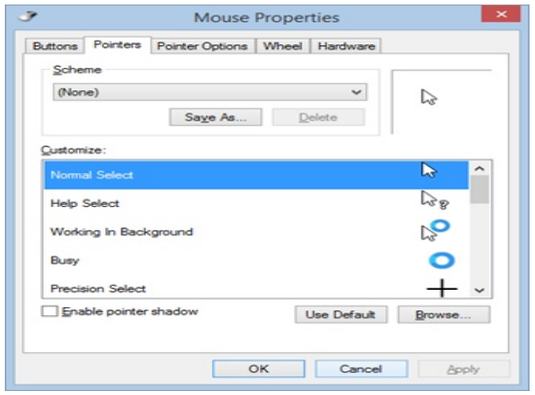


Figure 55: Screenshot of Mouse Properties Window

Left handed. In the Scheme section click the drop-down arrow and you can choose a style for your cursor

If you have trouble seeing, select one that has extra-large in parentheses. In the customize section you can change each individual cursor by clicking on it and clicking browse. Now click the Buttons

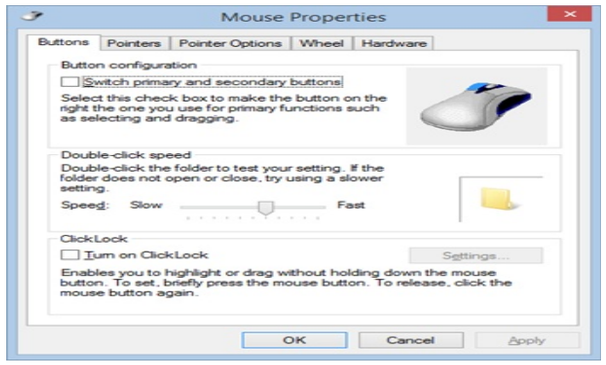


Figure 56: Screenshot of Mouse Properties Window

Tab in the Mouse Properties Window.

If you are left-handed, you can click the left-handed radio button in the Button Configuration section of the Button Tab.

2) Left-Right Mouse Buttons: This will reverse the function of the left and right buttons on your mouse so you can put your mouse on the left side of your computer.

3) Double Click Speed: If you have trouble with double clicking play with the slider in the Double Click Speed section of the Button Tab. Move the slider either faster or slower and then try double-clicking on the folder to the right of the slider until you feel comfortable with the speed.

Figure 57: Screenshot of Mouse Double Click Speed

If you have trouble holding the mouse button down due to carpal tunnel or arthritis the Click Lock section will help you.

Click lock allows you to highlight or drag objects without having to hold the mouse button down. If you would like to use this option check the box then click settings.

Choose how long you need to hold the mouse button down before locking the cursor in place so you can highlight. When you have made your selection, click OK to return to the Mouse Properties Button Tab.

4) Click Lock. Motion & Pointer Tab: To use the Click Lock function place your cursor or pointer over the object and hold the mouse button down just a little longer than a regular click. This will lock the pointer in that location and the pointer will move with the motion of your mouse without having to hold the mouse button down.

If you made any changes click Apply then Click the Pointer Options Tab. If no changes were made simply click the Pointer Tab.

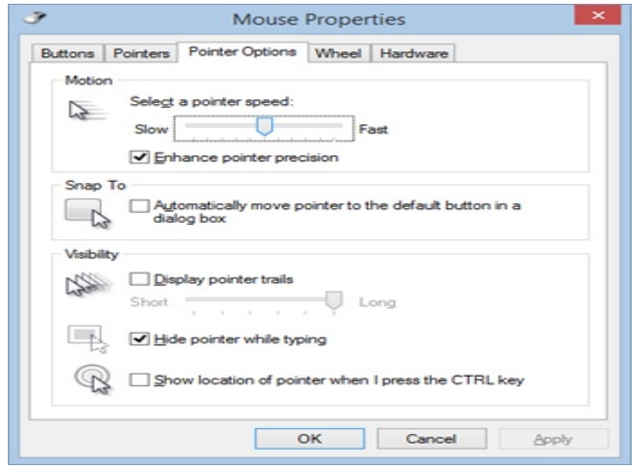


Figure 58: Screenshot of Mouse Properties Window

The first section is Motion. If you find that the mouse pointer moves to fast and you have trouble getting it to stop where you want to drag the slider toward slow to slow the mouse down. Play with the slider for a minute to see how it affects your mouse pointer.

In the last section of the Pointer Options tab, Visibility you will see checkboxes, the first checkbox puts a tail on your mouse pointer that will trail behind the pointer as you move it across the screen. The next checkbox will hide the mouse pointer when you are typing. Some people like this and some don't. If your pointer gets in the way of you reading while you are typing check this box. If not I would leave it unchecked.

The last button is useful if you are a person that has trouble finding the mouse pointer. When this button is checked you can press the CTRL key on your keyboard and a bull's eye will appear around your pointer to make it easier to find.

Click the OK button to return to the Personalization Window. Click the Red X in the upper right corner to close Personalization and complete this tutorial. That concludes this tutorial on personalizing your computer. Thank you for reading.

7.5 Control Panel Setting

We have covered only few of the basic features, in the Windows 8 Control Panel everything is controlled and full of tools to change the way Windows looks and behaves. This is where you will go if you need to make any modifications to user accounts, hardware or programs installed on your computer.

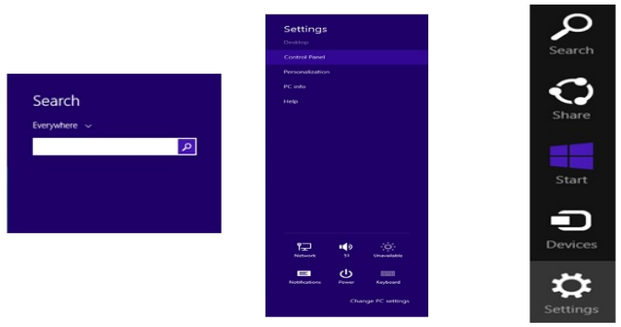


Figure 59: Screenshot of the path how to open control panel in Windows 8

1) User Account: We will cover the topics of User Accounts and Family Safety, Appearance and Personalization, and Printers and Keyboard. You can click on any of these topics to jump ahead.

Accessing the control panel in Windows 8 is a little different than previous versions of the window. If you have a touch screen slide your finger to the left across your screen to access the navigation panel on the right-hand side. If you have a mouse place your mouse cursor in the upper or lower right-hand corner of the screen and you will get the navigation panel.

Once this panel comes up click on Settings, then select the control panel.

The other way to open the control panel is to go to your start menu and in the upper right-hand corner click on the search button and type the word control panel.

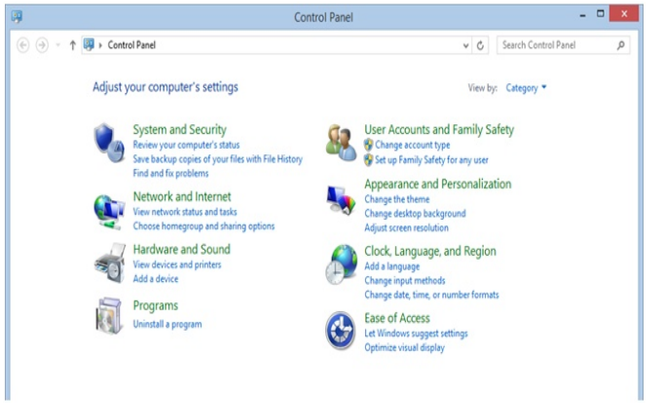


Figure 60: Screenshot of Control Panel View

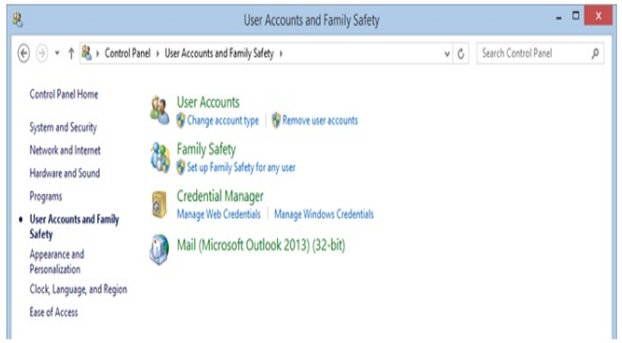


Figure 61: Screenshot of User Privacy Protection Window

Once you have your control panel open we are going to start with User Accounts

User Accounts & Family Safety is a place where you can add or delete users, change a password or password protect your user account, Change the picture by your name when you log on or change the way you log on and off or set parental controls.

User Accounts is a beneficial tool because it allows each user of the computer to have their own look and feel for the Windows Desktop, customize their own favorites on the web and have their own My Documents Folder. This is also great for Parents to monitor their children's computer usage.

All of the link options in the control panel are alphabetized. Click on the User Account and Family Safety link and we will get started.

When the user Account Window opens you will see the options. Now click on User Accounts. This will open the User Accounts window.

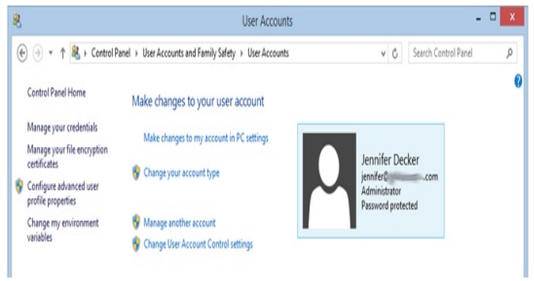


Figure 62: Screenshot for how to create user Password

We will start by having a little fun with the picture that appears by our name when we log on. Click on Make changes to my account in PC settings. This will open Accounts. Click on browse to select a picture on your computer that will show up when you log on. If you have a webcam you can take a picture of yourself to use as your profile picture.

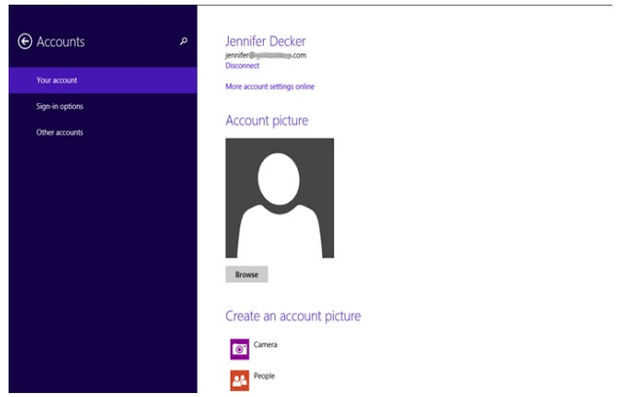


Figure 63: Browsing Any Picture

In this window you can change the picture that appears next to your name in the Start Menu and when you log on. Browse through the pictures and pick your favorite one then click on it. If you have a favorite picture that does not appear in the list of default pictures click on the Browse for more pictures link and a window will open for you to choose one of your personal pictures.

If you made any changes click on the Change Picture button. If no changes were made click on cancel and it will take you to the user account window.

2) Password: Now we will go through one by one to learn more about making changes to a user account. You do not have to make any changes to your computer but I would like you to get a feel for all of the windows in case you need to make changes in the future. Click on Change your password If your account is currently password protected and you would like to change the password you would enter the information in each text box and the Change Password button at the bottom.

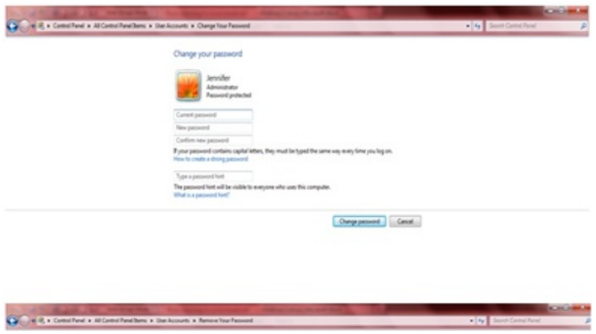


Figure 64: Changing and removing Password

Click Cancel if you have not made any changes and you will return to the Make changes to your user account window. Click on the the

Remove your password link. If your computer is currently password protected you can type your current password into the text box and click the

Remove Password button and you will no longer need a password to log into your computer.

Click Cancel if you did not make any changes to return to the Make changes to your user account window. Click on the Change your account name link

If you have a grandchild or child that no longer uses your computer or you purchased a used computer from someone you can put your name here or type the name of someone else that would use that account.

If you did not make any Changes click cancel to return to the User Accounts Window. Next click on the Change your account type link.

Figure 65: Changing Account Type from Administrator to User or Vice-Versa

3) Create New Account: As the administrator, you can access all programs and files and install programs on the computer. If you are set up as a Standard User you might not be able to install certain programs.

You will still be able to change your own password, picture and desktop settings.

You cannot change an account to a Standard user if they are set up as an administrator and there is only one administrator account.

You would need to create another administrator account before changing an administrator to a Standard user.

If you made any changes click the cancel button to return to the user accounts window.

To switch to another account on the computer and make the same changes or create a new account you would click the Manage Another Account link.

Click on the Create new account link. Enter the User's name and select what type of user you would like them to then click Create New Account.

If you did not create a new account click cancel to return to the Manage Accounts Window.

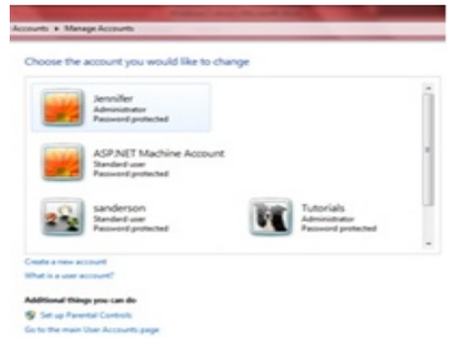


Figure 66: Screenshot of Create New Account

4) Parental Control: Parental Controls helps you to manage other user's computer usage, set limits on access to the web, the hours they can log on to the computer, and which games they can play. Click on the setup Parental controls link at the bottom of the window.

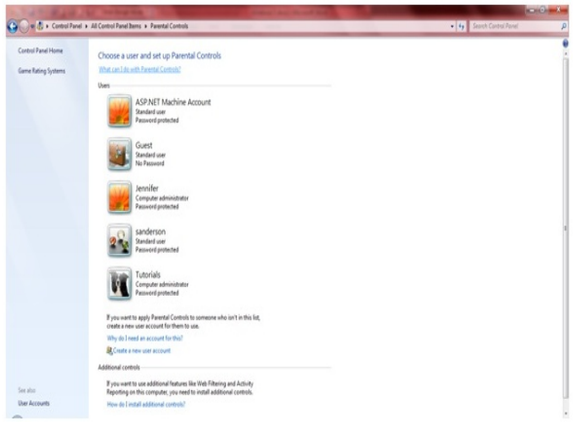


Figure 67: Screenshot of How many Accounts in your Windows 8

When the Parental Control Window Opens Click on a user that is not an administrator.

In the Parental Control, Setup Window clicks On, enforce current settings under Parental Controls.

This will allow changes to be made to the three options under Window Settings.

The links that are currently off in the sample will take you to the same location at the Windows Setting links. They are just to let you know what controls have been set.

Click on Time limits. In the time limit window, click on blocks of time in the grid to block the selected user from logging onto the computer during the set times.

Figure 68: Screenshot of User Control Window

Click OK to save the changes or cancel to discard and return to the parental control window.

Under Windows Settings click Games. Click the Set game rating link.

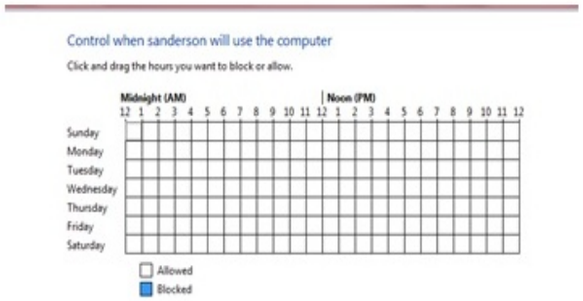


Figure 69: Screenshot of User Control Window

5) Block & Allow Options: If the user is allowed to play games but you want to control the rating click Set games ratings under Block (or allow) games by rating or content.

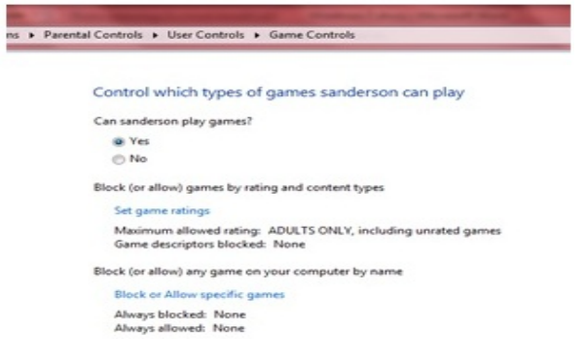


Figure 70: Screenshot of Blocking and Allowing a Specific User

The first selection you can make is to allow or block games that do not have a rating. Click either Allow games with no rating or Block games with no rating. Then read each rating under Which ratings are ok for (username) to play? Then choose the types of games the user will be allowed to play. The selection you choose and everything above it will be allowed. If the Rating is below what you selected that game will be blocked from play.

Figure 71: Screenshot of Rating Window for Games

Use the scroll bar to move down the window to see more options to block games containing certain content. Scroll down through the list and place a check mark on any content you would like to block.

Any game containing a marked content will be blocked regardless of the rating.

Click OK if you made any changes or Cancel to return to the Parental Control Game settings and OK again to return to the main Parental Control window.

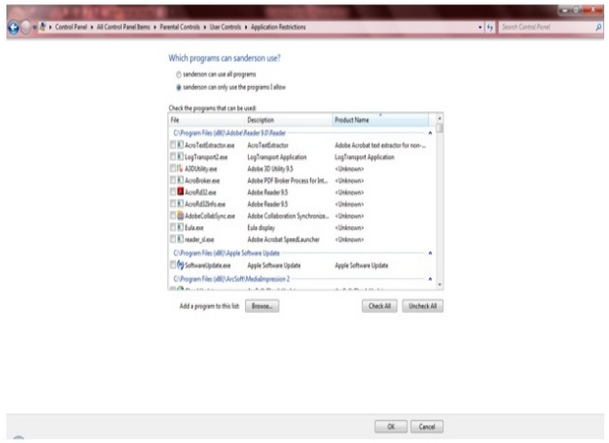


Figure 72: Screenshot of User Control over Programs

6) Allow and Block: The last option is "allowed and block" specific programs. Click on Block or Allow specific programs link. When the Block or allow specific programs window opens click on (username) can only use the programs I allow button. It will take a minute for all the programs to load in the box below.

When the program list is populated scroll through the list with the down arrow on the right of the box and check the box next to each program the user will be allowed to use. After you have finished checking the programs click OK to return to Parental Controls or if no changes were made click Cancel.

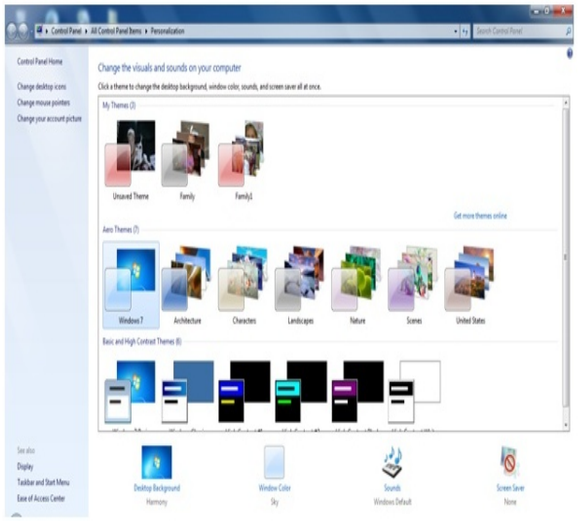


Figure 73: Screenshot of Personalization window

7.6 Appearance & Personalization Options

Now reopen the control panel. Click on the Personalization link. When you are finished exploring the Personalization window, click the back arrow in the upper left corner to return to the control panel.

7.7 View Devices & Printers

Click on the devices and printers link in the main control panel window. Printers have never been one of my favorite topics. There are so many different brands and types of printers, and they all install and work differently.

The best advice I can give you is to follow the instructions that came with your printer for easy installation.

1) Printers: The Printers Window will open. This window gives you all the information you need to know about the printers and devices you currently have installed on your computer. This window will provide a list of each device or printer. To get more information on any item in the list double click to open the properties window for that item.

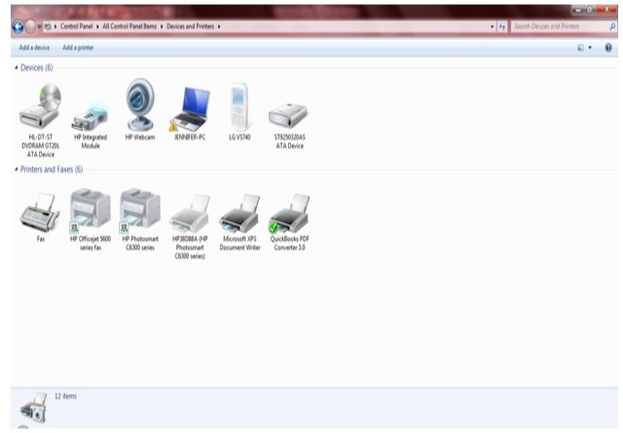


Figure 74: Screenshot of Showing all the devices installed in your Computer

The Printers Window will tell you the name of your printer. When you place your mouse over a printer if there is any number other than 0 in the documents column or under the printer name there are print jobs that are either in the process of being printed or are stuck in the print queue.

Double click on one of your printers to view the window with the list of print jobs and options to change print settings.

Figure 75: Screenshot of Printer Properties

If you are having printer trouble this is the window you need to be in to see what is going on. Most of the time you have a print job

stuck in the queue and it needs to be deleted before you can print another document or re-print the current document.

To delete a document out of the print queue click on to see what is printing then click the print job to select it and press the delete key on your keyboard. Sometimes you are able to restart the print job to make it work. To restart a print job you select the print job you want and click the document in the top toolbar. Then click Restart.

Click the x in the upper right corner to return to the Printers window.

2) Add Printer: The last topic on printers I want to cover is Add a printer. Click on the add a printer link in the top toolbar.

This will open the Add Printer wizard. You can follow this wizard to install a printer. I am not going to go into detail here because every printer is different. If you have specific questions you can email me and I will send you an individual tutorial specified toward the precise brand of printer you are installing.

Click the Cancel button to go back to the Printers window. Then click the upper left back arrow to return to the printer window.

Once you are back to the Control panel click on the Keyboard icon link.

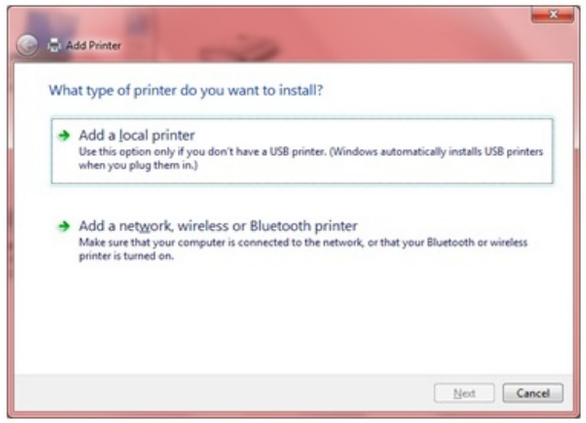


Figure 76: Screenshot of Add Printer Window

The settings in Character repeat are Repeat delay and Repeat rate. If you are typing and when you press a key the character types more than once.

Repeat delay is how long you need to hold a key down before it will type more than once. Repeat rate is the speed that the character will repeat if you hold the key down too long.

3) Keyboard Properties: Play with the sliders on both options and click in the test text box and hold down a key on the keyboard to see how the changes affect the keyboard.

The third option is how fast your cursor will blink when you are typing. You can play with the slider if you wish but the default usually works fine.

When you are finished, click the OK button to return to the main control panel window.

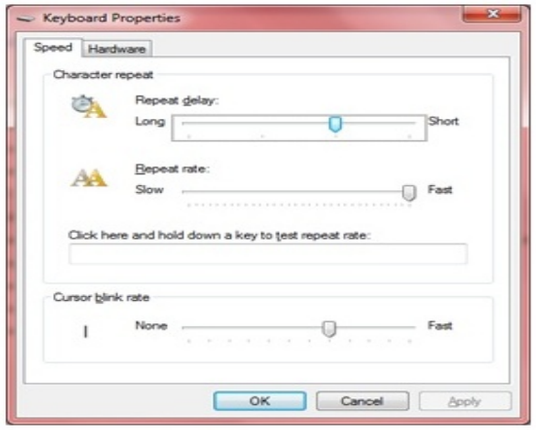


Figure 77: Screenshot of Keyboard Properties

08

MICROSOFT WORD 2010 TUTORIALS

MICROSOFT WORD 2010 TUTORIALS

8.1 Introduction

Most seniors and beginner computer users will use Word for typing a letter to a family member or friend, typing up a recipe or writing articles, research documents, and thesis etc.

When you open Word 2010 it starts you with a new document. All of your basic commands that you will use on most documents are located at the top of the screen by clicking on the

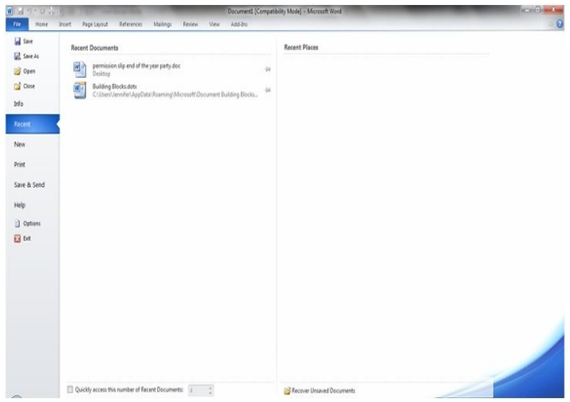


Figure 78: MS – Word Editor

8.2 File Menu

1) New Option: Click File in the upper left corner on the Microsoft Word 2010. Even though you already have a new document open, click on the New option. The New Document window will open and give you template options to choose from, Click on Sample Templates. This will give you a list of templates you can uses that are already installed on your computer and you do not have to download from the internet. These can be time savers if you are in a hurry to create a professional looking document. When the Sample template windows open, you can see a small preview

with the thumbnail images and a larger view to the right. When you have selected the template you would like to use click the create button on the right image. This will open the template in a new Word document.

Below the **Available Templates** is a list of MS – Office 2010 templates, you can download from **office.com Templates** whenever connected to the internet. These are also great time savers. It just takes a few extra clicks to download the document online from the Internet.

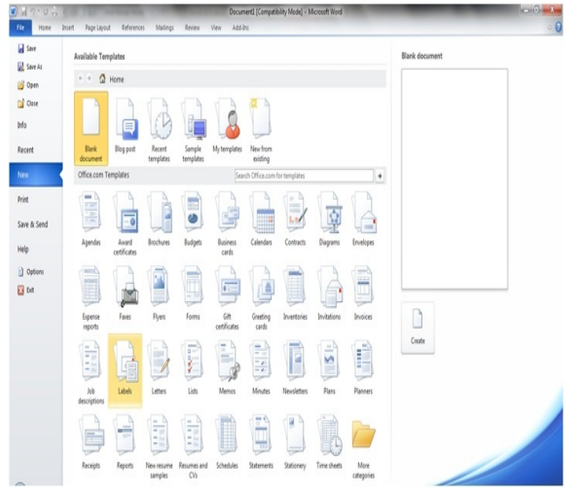


Figure 79: New Option View in the File Menu of MS – Word

Now click Cancel. To exit the templates or select one and click create.

Save As: The Save As will open the save as window. In this window, the top bar tells you the file location. Use either the top bar or the left navigation pane to browse to the folder you would like to save your document.

Usually, the file location defaults to My Documents. Click the Save as type drop-down menu. This will give you a list of file types you can save your document.

3) Open: Now that the document is saved let's close and reopen the document, Click on the File menu in the upper left corner and at the very bottom click Exit. There are 3 ways to reopen a document.

a. Double click on the My Documents folder from your desktop and then double click on the file you saved. This will automatically open Word 2010 and your saved document.

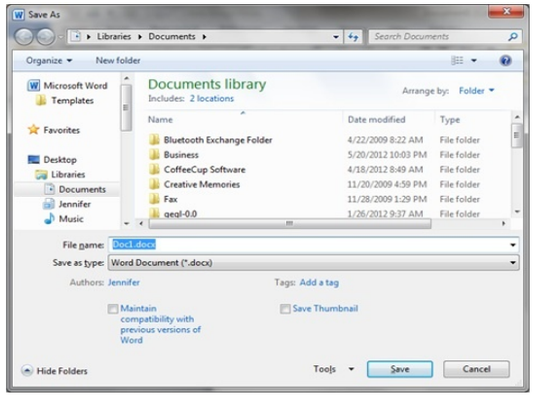


Figure 80: Save As Option and Browse to a Specific Location

b. Open Word 2010 and click on the File menu. The drop-down menu will appear and you can either click on the Open Icon and it will take you to your My Document folder where you can double-click the file you saved and open it or

c. Click **Recent** option which will give you a list of documents you have saved. Click on the document from the list and it will be opened.

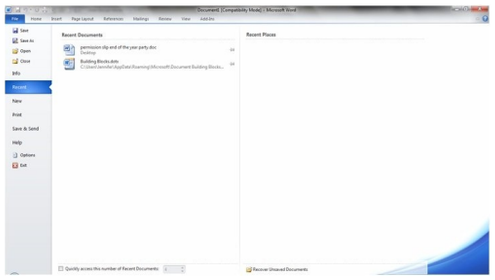


Figure 81: The Recent Option of MS – Word

4) Save: The save option in the File menu will save your file after it has already been given a file name. This options works without bringing up a window for you to title your document.

5) Close: The close feature will close just the document you are working on. This is different than exit.

6) Exit: Exit will close all Word 2010 documents. Close just close one.

7) Print: The print option in the file menu will open the print options to the right of the link. In this window, you can set all of your print options. At the top is the number of copies. You can either highlight or type the number of copies you would like or use the up and down arrows to change it.

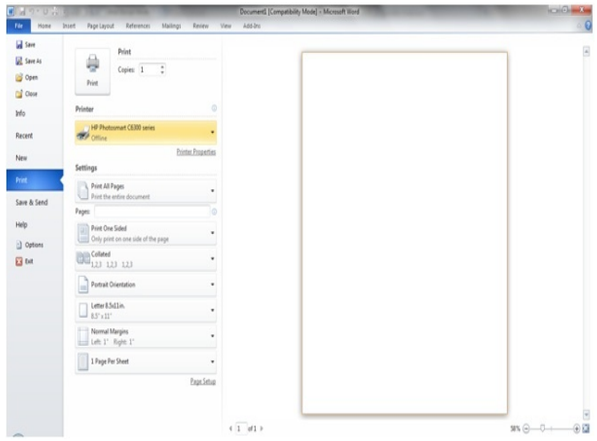


Figure 82: Print Option of MS – Word

Below the copies is the printer selection. If you have more than one printer set up on your computer use the drop-down arrow to select the printer. You can also print to a PDF file or OneNote using this selection tool.

By default print, all pages are selected. Click the down arrow to see options for selecting only the pages you want to print. If you highlight text in your document the Print Selection option will be available. This will only print the highlighted text. Print Current page will print the page your cursor is on.

Using the Custom print range you can type a range of pages for example 3-8, and it will only print the pages in that range. You can also just type one page number, or place commas between each page number. The print markup will print the notes and changes you have tracked in your document.

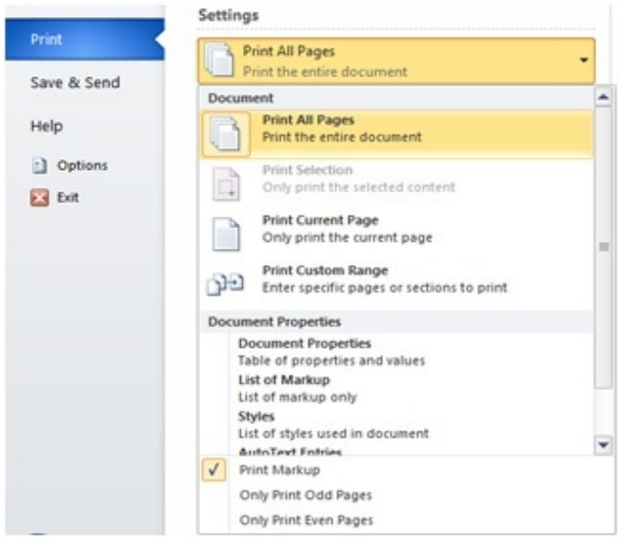


Figure 83: Another View of the Print Option of MS – Word

8) Save & Send: The Save and Send option gives you a list of ways you can change the format you are saving your document. Sending an email lets you change the format to a PDF file, XPS file, Fax, email as an attachment, or create an online document with an email link.

To save your document to the web you need to have windows live account. With this account, you can save it to your online documents.

a. Share Point is a server that allows you to share files. This will most likely have to be set up by an administrator for you to use it.

b. Publish as Blog Post will require you to register a blog account. There are several blogging services you can pick from. You will be prompted to register if you have not already done so.

To change the file type click the change File type option will give you a list of different Word formats to choose from.

c. The last option is Create PDF/XPS Document. This will create a read-only file for you to share with anyone you would not like to make changes to the document.

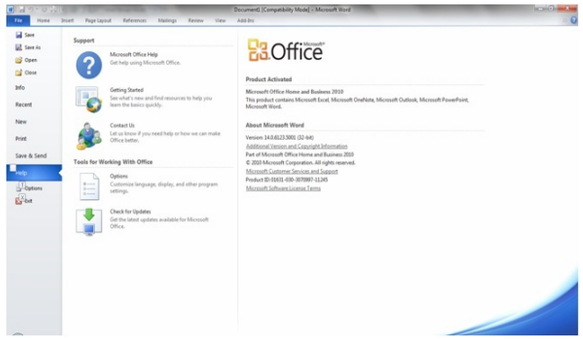


Figure 84: Save & Send Option of MS – Word

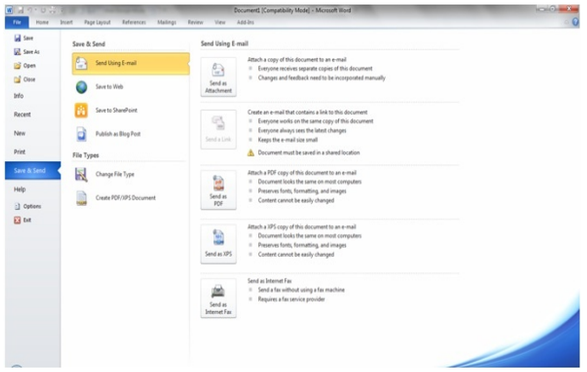


Figure 85: Share Point Option of MS – Word

9) Help: Help will show you all of the avenues of help provided by Microsoft. The default will give you an information page showing you what version of Office you are using and the updates that have been installed.

10) Options: Option is an advanced area of Microsoft Word 2010. This allows you to configure how Word 2010 works. Click the options link to open the Word Options window.

a. General: The General window is where you can pick basic toolbar options, color schemes, and your username.

b. Display: Display is used to modify how the document is displayed on the screen before printing.

c. Proofing: Proofing gives you options to change the way the proofreading features work and check your document as you are creating it.

d. Save: Save will let you customize how your documents are saved. You can set a time for the automatic save, the format of the save, and location.

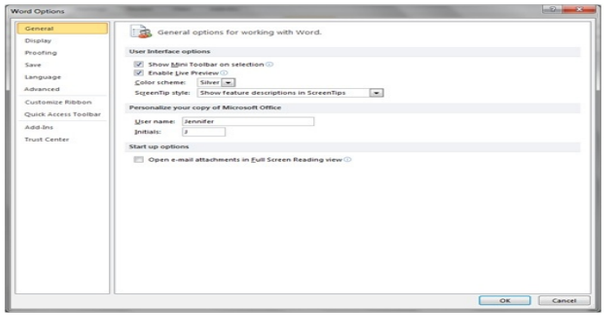


Figure 86: The Word Option View

e. Language: Language will let you change the default language installed, install new languages or add multiple languages.

f. Advanced: Advanced has a list of checkbox options for you to choose from. These options include editing options, cut, copy, paste, image size, document content, and display options.

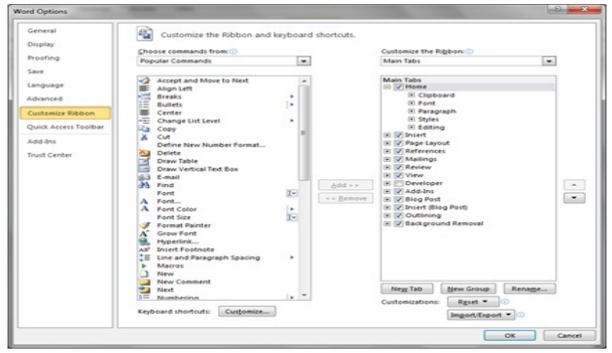


Figure 87: The Customized Ribbon View of Word Option

g. Customize Ribbon: Customize ribbon is the next navigation option. This brings up two columns for you to add or remove buttons from the ribbon tabs at the top of your working screen. The list on the left is all of the options available to place in the ribbon tabs. The list on the right is a list of what is currently in the ribbon tabs. To add another option click on the item you would like to add from the left column then the Add button will no longer be grayed out. Click the add button and the item will be moved to the ribbon tab.

The checkboxes can be added or removed in the right column. This will add or delete items from the ribbon tab. You can create new groups of buttons by clicking the New group button below the right-hand column then add additional buttons to the custom group.

To rearrange the order of the tabs click on a tab name then use the up and down arrows on the side to move the order of the tabs. Click the OK button to save any changes or Cancel to discard them.

h. Quick Access Toolbar: The quick access toolbar option from the Word Option navigation pane works the same as the Customize ribbon option. You will see two lists the left being for all of the options available to place in the quick access toolbar and the right for the options that are currently placed in the toolbar.

8.3 Font Section

The Word 2010 Font section in the Home tab gives you features to change the font face, size, color, and style.

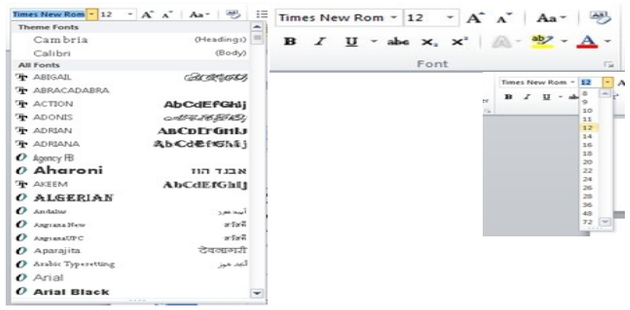


Figure 88: Font View of MS – Word, Figure 89: Text Size & Figure 90: Different Font

1) Theme Fonts: Now click the drop-down arrow next to Time New Roman to change the text to a different style. Scroll through the different fonts by clicking the down arrow in the bottom right corner. When you see a font you like click on it and your text will change. I choose Calibri Font.

2) Font Size: Now we are going to change the size of our text.

Highlight your text and click the drop-down arrow next to the number 12. Click on the font size 20.

You can also click on the large A with the up arrow next to it and increase the font one size at a time. The smaller A with the down arrow next to it will decrease the font one size at a time. This feature is useful if you are not sure how large or small you want your text to be or you don't know how large you can make text and still fit in the area you want.

3) Formatting Button: Moving on to the next button, the button with the Aa and an eraser. This button will undo all of the editing's you have done on text and return it to the Times New Roman font and a font size of 12.

Figure 91: This Clear Formatting Button

These 6 buttons are very useful and you will use them often.

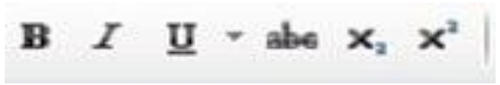


Figure 92: Bold, Italic, Underline, Strikethrough, Subscript and Superscript Buttons

Try these buttons on your Happy Birthday text just to see what happens and if you like any of them you can keep them. Or when you are finished you can always click the button again to undo it.

3) Bold: Starting with the bold button, it will make selected text bold. The keyboard command for this is hold down the ctrl button and press B.

4) Italic: The *I* button is italicize. Be careful with this one, with some fonts the italicize button makes it hard to read. The keyboard command for italicizing is hold down the ctrl button and press I.

5) Underline: The underline button can be used in 2 ways. If you just click the button or press Ctrl U you will get a simple one line underline. Now click on the drop-down arrow next to U. This will give you several options to choose from to get a fancier line.

6) Strikethrough: The ~~abc~~ button with the line through the letters is used to strike through text. This can be very useful when you are editing a document and don't want to lose your original thought.

7) Subscript & Superscript: The X_2 and X^2 buttons are subscript and superscript. These are used for fractions I use these frequently when making recipe cards. The subscript

and superscript will sometimes automatically change numbers into fractions while you are typing.

8) Change Case Button: The last button is the change case button. This button will let you change the case of your text. Highlight your text and click the Aa^ button. You are able to select Sentence case, lowercase, UPPERCASE, Capitalize each word or tOGGLE cASE. Click on UPPERCASE. I have found this tool very useful when I have accidentally hit the caps lock key and didn't realize it until I already had a sentence or two typed. Use this tool then you don't have to retype.

Figure 93: Change Case Button

9) Text Effect, Text Highlight Color and Font Color Buttons: Now we will finish up the Font section with the last three buttons; text effects, highlight, and font color. When you click the text effects button you will get a drop-down menu with a preview of the different styles for you to choose from.

The outline will bring up a submenu with a list of colors for you to select. Shadow, Reflection, and Glow will also give you a preview of the different styles to apply to text. Highlight button you will get a selection of colors to choose from. Select your color and you will get a cursor that looks like a highlighter marker. Click the left mouse button and drag it over the text you would like to highlight. It works just like a regular highlighter.

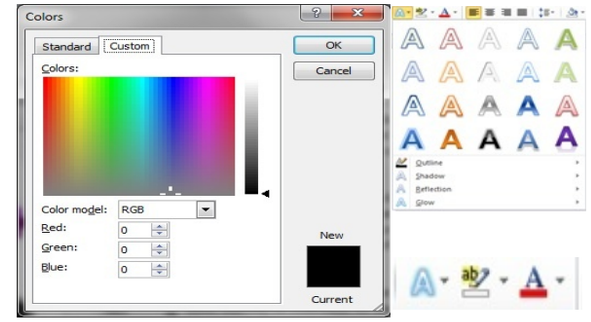


Figure 94: Text Effect, Figure 95: Text Highlight Colors & Figure 96: Font Colors

The font color button allows you to change the color of your text. Select the Happy Birthday Text and click on the Button. You will get a drop-down menu of colors with an option at the bottom More colors. If you select More colors you will get to create your own color using this window.

To create your own click the custom tab then click in the color box close to the color you would like and then drag the arrow next to the color line up or down to change the shade. Your new color will appear in the bottom right corner.

Once you have selected your color for your text click the OK button to apply the changes and return to your document.

8.4 Paragraph Section

The best way to describe the Paragraph section is to say it formats the location, color, or view of your text or objects on the page.

Figure 97: Paragraph Section of MS – Word

1) List Buttons: The first three buttons are list buttons. The 1st button is a bulleted list. Click on the drop-down menu to see your selections for your bullets.

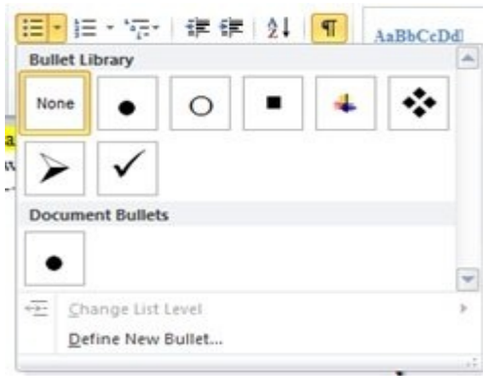


Figure 98: List Buttons of MS – Word

These are just a few of your options. This list will change as you create or use different styles. You can use the scroll bar on the right side to scroll up and down for more options. The list level in the indentations and change in bullet styles if you create a multi-level list. If you click on the Define New Bullet you have endless options to create your own look and feel.

When you click on the Define New Bullet a window pops up and you can create your own bullet by using the Symbol, Picture or font buttons. The Alignment drop-down menu lets you choose where on the page you would like your list to appear and the Preview section will let you know what your bullet will look like before you click OK and start your bulleted list. To create the bulleted list and return to your document click OK or click Cancel to discard any changes.

Once you select your bullet style it will automatically place a bullet in your document. Type your text after your bullet and hit enter to create the next item on your list.

If you are finished with your list hit enter twice and the bullets will be discontinued. To create the multi-level list, press tab to indent and use the new bullet style. Hold down shift and press tab again to bring the bullet back a level.

-The same rules apply to the numbered list. Click the drop-down menu on the numbered list button to get your options. You can choose numbers with a dot or a bracket, roman numerals, letters or define your own format.

-Change list level will be grayed out just like the bulleted list until you create a list in your document. You can use this option on the menu or the keyboard commands.

-When you click Define your own format, the above window will appears and you can customize your own format by using a predefined one.

-Just enter your customizations in each category, preview it in the preview pane until you are satisfied and click OK.

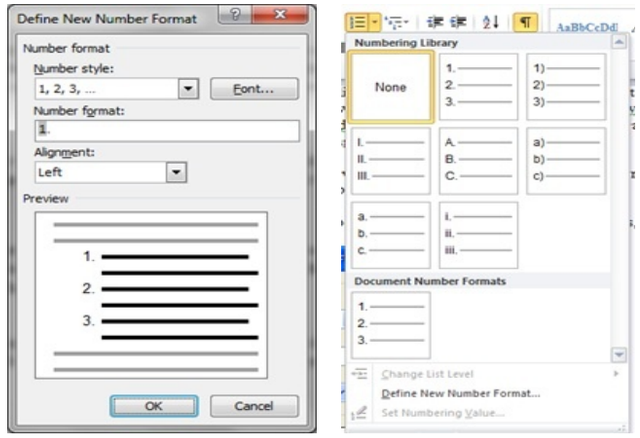


Figure 99: Define New Number Format and Bullets in MS – Word

-The numbers will work the same way as the bullets, after typing your text hit enter and the next number will appear. When your list is complete press enter twice and your numbered list will end.

2) Multilevel List: The last list button is the multilevel list. This is great for outlines. You can create a multi-level list by using the numbered or bulleted list options and the tab key but this button automatically sets up the multi-levels. It works the same as the bulleted and numbered lists with all of the option and customizations but it has one difference; to get

to the next level in the list press tab and your list item will tab over and change to the second level format. To discontinue the list simply hit enter twice and you can continue your document without continuing the list.

Figure 100: Outlines Options in MS – Word

3) Increase & Decrease Indent: The next two buttons are Increase and Decrease an Indent at the beginning of a paragraph. Notice the hourglass at the top left of your word document in the ruler.

Figure 101: Increase & Decrease Indent Buttons in MS – Word

Now click on the Increase Indent button. Each time you finish a paragraph and press tab on your keyboard the tab will move to the location of the hourglass. By clicking the Increase Indent button more than once the hourglass moves

further to the right. The Decrease Indent button will move the tab back.

4) Sort Button: The Sort button will alphabetize a list of words or sort numbers for you. To use this features simply select the text you would like to organize by clicking in front of the text you want to highlight and dragging the mouse to the end of the text then click the button. It will alphabetize the list of words for you.

Figure 102: Sort Buttons in MS – Word

5) Formatting Symbol Button: The next button I use all of the time to help me with my formatting. The button will give you formatting symbols on your document. It allows you to see if you have an extra space between words by the dots or an extra line break by the paragraph symbol. I usually keep mine on all of the time.

Figure 103: Formatting Symbols in MS – Word

6) Justify Buttons: These 4 buttons you will use to justify your text on the page. Either click the button before you start typing or highlight text that has already been typed and click the justification you want.

Figure 104: Text to Left, Centre, Right of Page or Justifying by pressing these Buttons

7) Paragraph Spacing Button: The Line and Paragraph spacing button are used to change the spacing between lines and paragraphs.

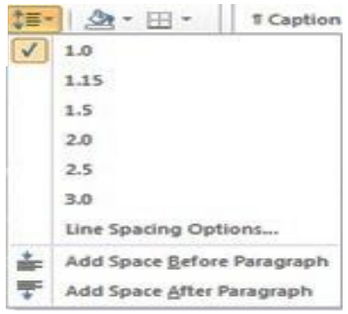


Figure 105: Giving Space to the Text lines in your Document

Either click on the drop-down menu and select your options or highlight your text then click and select. Most users will only need to select one of the default options listed. These options are the line spacing without pressing return to go to the next line.

If you are interested in other options besides the default line spacing, selections click on Line Spacing Options. This will open the Paragraph window. In this window, you can do the same things we have been using the buttons for.

You can use the arrows to increase or decrease the spacing before or after the text you have selected.

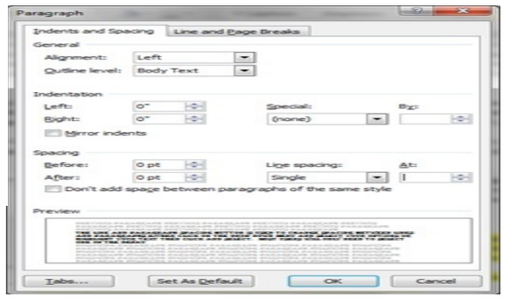


Figure 106: Line Spacing Options Window

The Line spacing option gives you have a drop-down menu where you can select from single, double, 1.5 lines, At Least, Exactly or Multiple. The At selection is where you can input your custom numerical settings by typing the number or using the up and down arrows.

The Preview section at the bottom will let you see what the spacing will look like in your document.

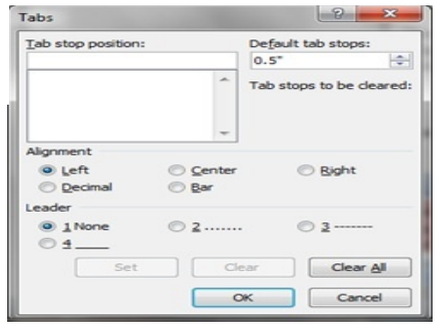


Figure 107: Line Spacing Buttons Different Options

8) Line Spacing Options: Click on the line and page breaks the tab. Under Pagination, there are a few checkbox options. Window/Orphan control is the last line of a paragraph printed by itself at the top of a page. An orphan is the first line of a paragraph printed by itself at the bottom of a page. To keep paragraphs together on a page or in a column check the Keep with next option. Keep the line of a paragraph together on a page or in a column is the keep lines together option.

To always force a page break before a paragraph select page break before. The textbox options will let you wrap text that surrounds the text box. You need to be clicked into the text box for this option to be available. The tabs button will open the tabs window. In this window, you can set multiple tabs using numerical settings instead of the ruler. The default tab stops are at .5" You can change this number by typing or using the up and down arrows. Choose a setting for the

alignment and the leader then click the set button. This will place the tab setting in the Tab stop position window.

Clear will be grayed out until you have a tab set. The Clear button will clear the last tab you set. Clear all will clear all set tabs. Click OK to return you to the paragraph window.

The Set Of Default button will keep all of the changes you made as the default settings for your line and page breaks Click the OK button to return to your document and make the changes.

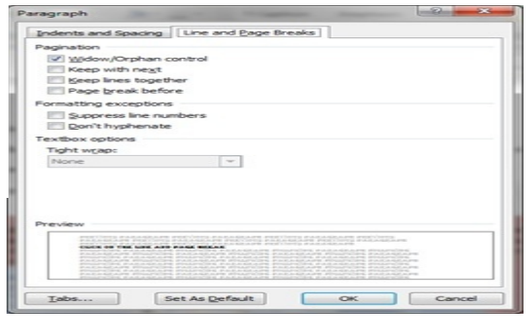


Figure 108: Line Spacing Options/Paragraph Spacing

9) Shading and Borders Buttons: The fill button and Borders button can be used on individual lines of text. If you would like to change the color of the background for an area of text in your document click the buttons before you start typing and choose a color from the drop-down menu. When you are finished typing click the fill button again and the background will go back to the original color or highlight the text you would like a different background and select a color from the drop-down menu and the background of selected text will change.

Figure 109: Shading and Borders Buttons

The Boarders Button works the same way as the background fill but will place a border around the text. Click the drop-down menu to see all of your options.

8.5 Styles Section

The Style section is used to quickly format an entire document. A style is a set of formatting characteristics such as font size, color, paragraph alignment, spacing, and shading.

Open one of your existing letters or document and select the entire document

Figure 110: Borders Button in MS – Word

.Scroll through the default styles with the up and down arrows to the right. Click on one of the default styles and it will change your documents if you already have one typed or start typing and see how Word 2010 is automatically making the changes to the style. If you don't like the looks of it simply make sure the entire documents is highlighted and click another style.

1) Change Styles: The next button is Change Styles. This button gives you the opportunity to customize the style you choose. Click the down arrow to see the options. The first selection is Style Set.

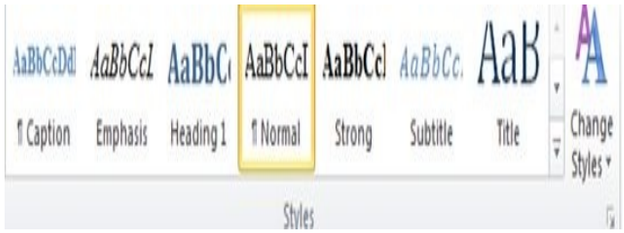


Figure 111: Styles Section of MS – Word

A style set is the combination of formatting changes you make to a document. Place your mouse over Style Set to see a list of options.

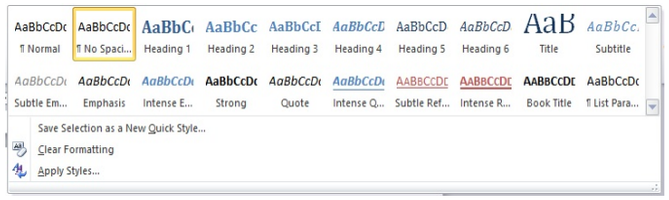


Figure 112: More Options in Text Styles

8.6 Change Styles Section

These options will change the style selections you can choose from. If you have made style changes to your document you can click the selections at the bottom of the list to Reset changes made to a template, reset the document to quick styles, or save your customized style as a Quick Style set.

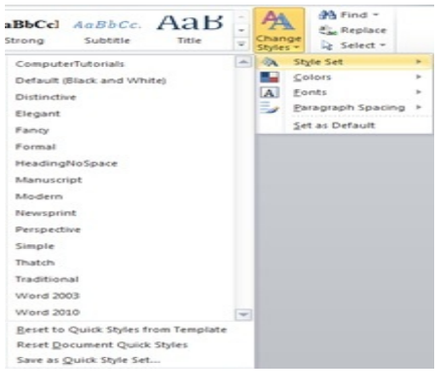


Figure 113: Different Text Styles Set Options in MS – Word

2) Colors: The next selection in the Change Styles button is Colors. Place your mouse over Colors. You will see a list of preselected color combinations.

These color combinations are of different text colors throughout your document. If you select the Create New Theme Color at the bottom of the menu you will see a list of the different types of text you can change the colors.

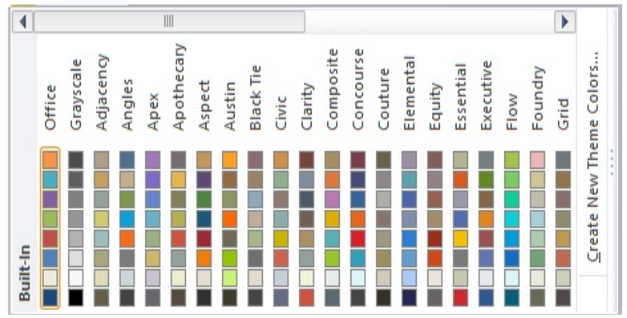


Figure 114: Colors Button in Change Styles Section

3) Fonts: Click on the Fonts selection and see a list of default combination of Fonts.

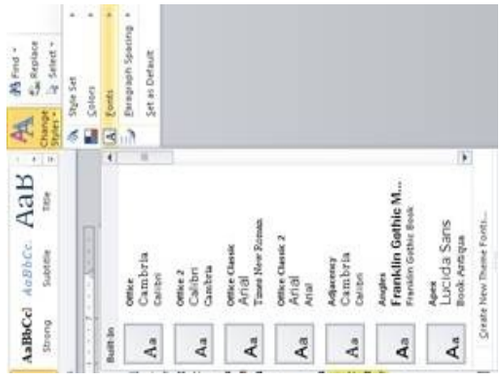


Figure 115: Fonts Button in Change Styles Section

The top is the Heading font and the bottom is the text for the body of the document. Use the arrow slide bar on the

right-hand side to scroll through the selections. At the bottom of the Fonts menu, you will see Create New Theme Fonts. Click on this option. The Create new Theme Fonts window will open.

In the Create new Theme Fonts window, you can customize a font theme. Simply use the down arrows to select a font for the Heading and or the Body. Name your font theme and click Save.

5) Default Button: The set as the default button will take the current theme of your document and set it to default so every time you start a new document the theme you have created will be used.

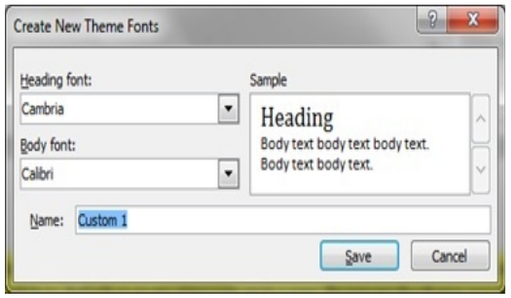


Figure 116: Set as default button in Change Styles

6) Paragraph Spacing: New to Word 2010 is the Paragraph Spacing option in the Change Styles button. The built-in options show different spacing choices to apply throughout the document.

You are also able to customize your paragraph spacing. Click on the Custom Paragraph Spacing option at the bottom of the built-in list.

Figure 117: Paragraph Spacing Button in Change Styles Section

This will open the Manage Styles window to the set Defaults tab. In this tab, you can set default font styles and font size. You can set tabs for paragraph indents by typing a number or using the up and down arrows in the Paragraph position section.

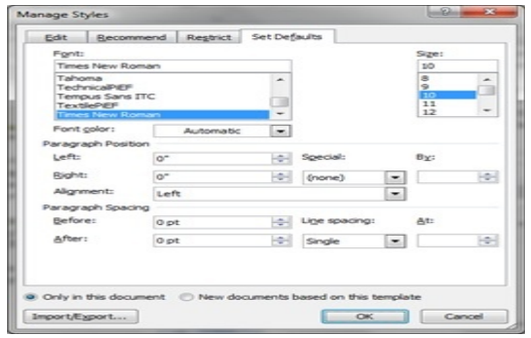


Figure 118: Manage Styles in Paragraph Spacing Option

When you are finished making your selections click the radio button to apply it to the working document only or all new documents based on the template you just set. Then click OK to return to your document and apply the changes you just made.

8.7 Editing Section

1) Find Button: If you need to look for a specific word or section of your document, click on the find button. When the

navigation pane opens type the word you are looking for in the search document.

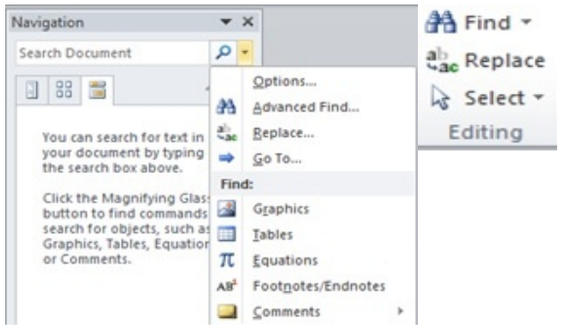


Figure 119: Editing Section & Figure 120: Find Button in Editing Section

When you are finished typing, Word 2010 will scan your document and highlight all of the keywords. The magnifying glass will change to an x to clear the key work. Click the down arrow on the magnifying glass to the right of the keyword you are searching for. This will give you a drop-down menu with a selection of options to customize your search.

Advanced Find and Replace are both options in the Editing section as well as this drop-down menu.

2) Go To: Click the Go To option, this will open the Find and Replace window to the Go tab. In this tab, you can select what you are looking for from the Go to what option box and the text box to the right will change with the selection you made. When you have your information entered click Next. This will scan your document and highlight the text in order using the next and previous buttons. Click Close when you are finished with your search.

3) Find & Replace: The options in the find section of the drop-down menu in the find navigation pane will go through your document and find only the selected item. For example, if you select graphics it will scan your document and find each graphic in your document.

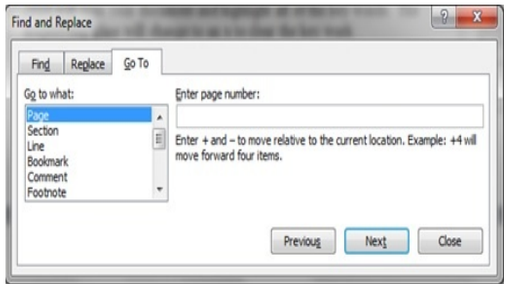


Figure 121: Go to Button in Editing Section

Now click on the Replace the button in the Editing section.

The Replace, Replace All and the Find Next buttons will no longer be grayed out.

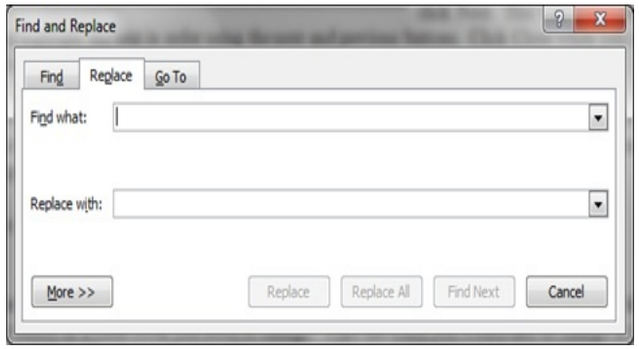


Figure 122: Find and Replace Buttons in Editing Section

If you would like to replace the words one at a time click Find Next and if it is a word you want replaced click Replace and continue that way through the document. If you know you want every word replaced click Replace All and each word in the document will be replaced.

Select Option: The last option in the Editing section is Select. Select All will highlight your entire document. Select Objects will select all objects, including tables, graphics, charts, etc. To use the Select Text with Similar Formatting highlight a section of text. For example, if you would like to change the style of all of your headings and you

have them all bold. By highlighting the bold text and selecting Select text with Similar Formatting Word 2010 will scan your document and select all text that is bold.

Figure 123: Select Option in Editing Section

Click the Selection Pane. This option will be grayed out if you are in compatibility mode. If you are able to click on this button the Selection and Visibility pane will open. If you have objects in your document they will be listed in this selection pane. By selecting the objects in the selection pane you can use the arrows at the bottom to move the objects up or down in order. By changing the order in the Selection Pane you will reorder the objects in your document. To close the Selection and Visibility pane clicks the small x in the upper right corner of the pane.

Figure 124: Selection and Visibility Options

09

MICROSOFT EXCEL 2010 TUTORIALS

MICROSOFT EXCEL 2010 TUTORIALS

9.1 Introduction

Open Excel 2007. We are going to create a monthly budget sheet just for practice using the features. We will start at the Far left and move through each section. Click the Microsoft Logo and click Save As. Type a name for your spreadsheet and click Save. Now Type Personal Monthly Budget in the cell Sheet1.

Figure 125: Worksheet Bar of MS – Excel

The opening of Microsoft Excel 2010 and Microsoft Word 2010 are same. Similarly, the remaining sub-menu of Excel and word are 100 equal. Follow MS – Word, if any difficulty were there. We will start it from the very beginning left to right.

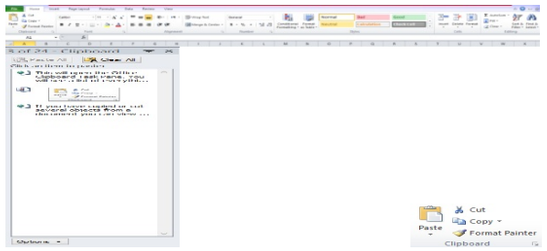


Figure 126: Clipboard Section of MS – Excel

9.2 Clipboard

The first section is the Clipboard. The Clipboard is a very useful tool to move text, pictures, and charts from one place to another on a page or from one document to another.

Cut, Copy, Paste and Format Painter sub-menu are working like it in MS – Word.

If you have copied or cut several objects from a document you can view and select them by viewing your entire clipboard. So, click on the little arrow icon in the bottom right corner of the Clipboard section.

This will open the Office Clipboard Task Pane. You will see a list of everything that had been copied or cut during your session in Microsoft Excel 2007. If you click on any of the items in the list it will paste them into the spreadsheet. Click the x in the upper right corner of the Clipboard Task pane to close it.

9.3 Font

The Font section of Excel works a lot like it does in Word. You can change the font style, size, bold, italic, underline, background color, or font color.

Figure 127: Font Section of MS – Excel 2010

The difference in Excel is how you select the text to make the changes. In Excel you can change one cell at a time, change just part of the text in a cell or change multiple cells.

To select a single sell click the cell, to select part of the text in a cell double click the cell and then click and drag the cursor over the section you would like to change, and to change multiple cells click and hold the mouse button down and drag it across the cells you want to change. You can also hold down the Ctrl button and select cells that are not close to each other.

Now that we know how to select open a spreadsheet you would like to play with or type a few cells so we can see what the font section does. I am going to start a monthly budget sheet.

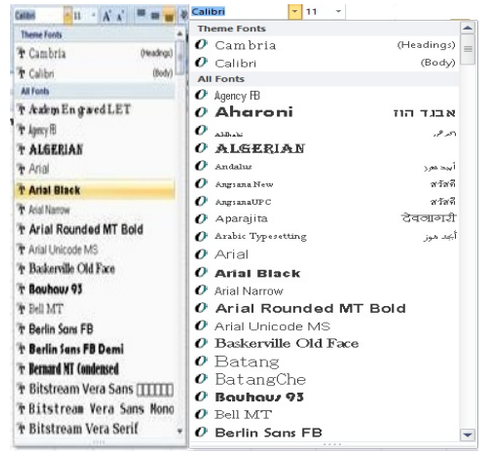


Figure 128: Font menu of MS – Excel

Select the cell with your heading and then click the down arrow for the font style and choose a new style for your heading. I chose Ariel Black.

Now we want the heading to be a little larger than the rest of the cells so click the drop-down arrow for the size. Select a new size for your heading.

Moving right along, the two next buttons (the large A and then small A) will increase or decrease the size of your font if you want to change the font size that way.

The bottom buttons are the **B** which will bold your text, the ***I*** which will italicize the font and the <u>U</u> which will underline the font.

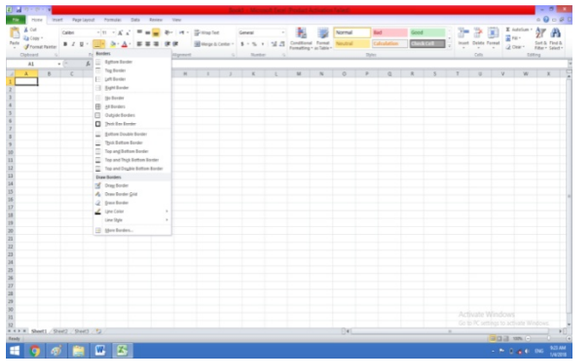


Figure 129: Main View of MS – Excel

Look at the different options and play with them a little to see what they do. You can also select multiple cells to place borders around. Try doing this also. If you decide you don't want a border you can always delete them by clicking the border button down arrow and selecting No Border.

The next button on is the bucket with the colored line under it. This button will fill in the background color of the cell. See if you can change the background color of your title cell.

The next button is the A with the colored line under it. This button will change the font color. If you would like to change all of the fonts in the cell just click the cell then select your color. If you would only like to change part of the font in the cell double click the cell then highlight the font you would like to change then select a color.

9.4 Alignment

The Orientation button will change the text in the cell so you can align text at an angle, vertical, up, down, or open the Format Cell Alignment window to do more in-depth modifications.

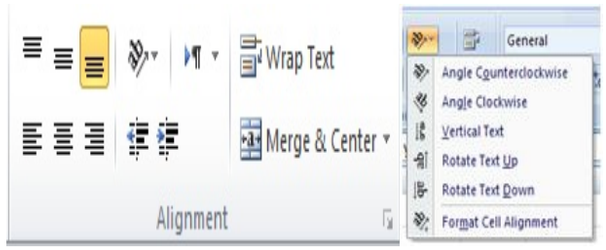


Figure 130: Alignment Options in MS – Excel

Play with these buttons so you can see what each one does. To undo a change click on the selection again and it will put your text back to the way it was.

a. Wrap Text: The Wrap Text button on the top next to the orientation button to wrap my text to make it fit.

b. Merge & Centre: This button can merge the text to different positions in the cell as shown in the figure

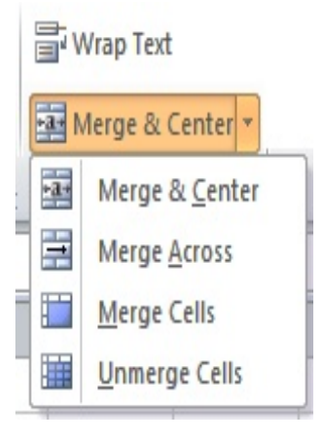


Figure 131: Merge & Centralized a Cell

9.5 Number

This section is Numbers. Notice how I didn't type a dollar sign or put decimals in my amounts. You can change the number format in any cell. You will especially need to do this if you are putting formulas or calculations into your spreadsheet.

Figure 132: Number Section View of MS – Excel

The 5 buttons shown above from left to right give you the following functions: The $ will place the currency mark in front of your numbers. If you click the down arrow you will have other currency options; The % will change the number into a percentage; the Comma(,) separate the thousand mark;

The next button will decrease the decimal places shown and the last button will increase the decimal places shown.

Highlight the cells you want to change the number format. Then click the down arrow where it says General.

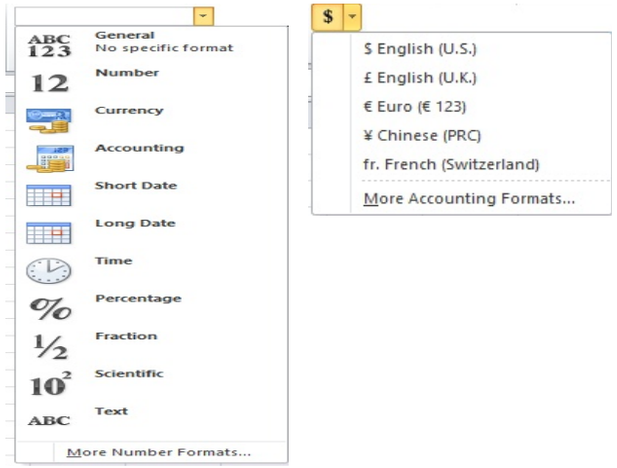


Figure 133: Options in Number Section of MS – Excel

It will make that selection and it will change my selected cells to have a $ and 2 decimal places.

9.6 Styles

The first button in Excel styles section is the Conditional Formatting. In this section, once you have place formulas in your spreadsheet you can send up red flags with this conditional formatting. Click the down arrow on the Conditional Formatting button to see the options.

With these options, you can change the color of a cell if it does not meet the criteria you set. I have set my budget to be highlighted red if I go over. To do this select the cells you want this formatting option, and then click the Highlight Cells Rules, then click Less Than, then input 0 and select the color and click OK.

You can put in multiple conditional formatting options. Notice the red, green, and yellow buttons next to the numbers these are done with the Icon Sets then selecting more rules.

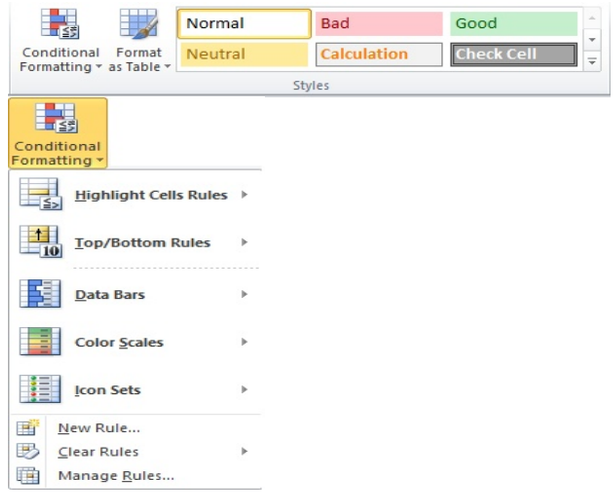


Figure 134: Styles View of MS – Excel

The next button in the Styles section is Format as Table. If you are creating a table You can start with this option and select one of the styles or you can highlight your table and then select the styles to change the look and feel of your table.

Now move to the next button Cell Styles. Click the down arrow on Cell Styles. This button will give you quick predefined styles for each cell. Or if you don't like any of these styles you can create your own style by selecting New Cell Style. This option will let you format a cell and Save it. Style 1 and Style 2 are styles I created for my spreadsheet. Now try and create your own cell style.

Figure 135: Given Different Style(s) to Cells in MS – Excel

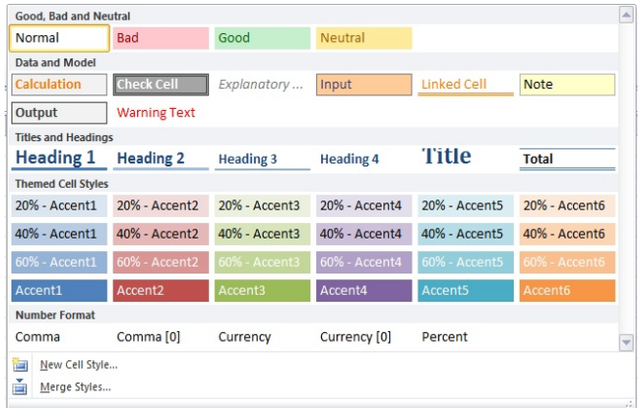


Figure 136: New Cell Style(s) View of MS – Excel

9.7 Cells

This section of the Home tab is Cells. In this section, you can add, delete or format cells. Click the down arrow on the Insert button.

To insert a cell click on a cell next to the one you would like to insert. Then click the Insert Cells button another window will come up asking you which direction you would like to shift the cells once you insert your new cells. The window also gives you the options to just shift the cells or shift the entire row or column.

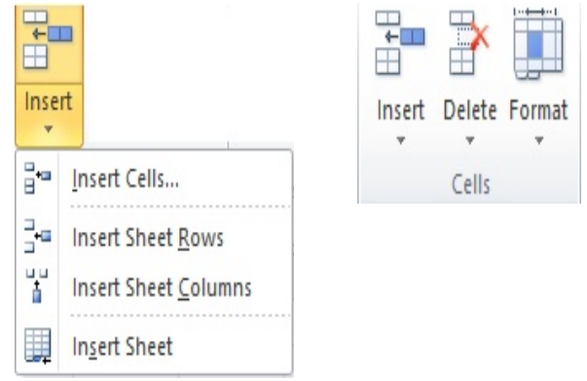


Figure 137: Cells View of MS – Excel & Figure 138: The Insert View in Cell Section

You can insert an entire row with the Insert Sheet Rows button or Insert a whole column with the Insert Sheet Columns button. The Insert Sheet option lets you add another sheet to your Excel 2007 document. The sheets end up at the bottom. You can see Excel automatically give you Sheet1, Sheet2, and Sheet3 by default.

The Delete down arrow gives you the same options that the Insert button gave. You can delete single cells with the Delete Cells option. The same window will appear asking what direction you would like to shift the cells after you delete the selected cell. The Delete Sheet Rows will Delete an entire row and the Delete Sheet Columns will delete a

whole column. Delete Sheet will remove the selected sheet from the bottom tabs.

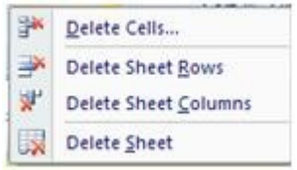


Figure 139: Different functions in Cell View

Click the down arrow on Format in the Cells section. The 1st selection is the Row Height. This button will open another window for you to type in a height number.

Figure 140: Cell Size (Self Explanatory)

The AutoFit Row height will do the same thing as it did when you double click in between the rows it will take the longest text and adjust the row to accommodate the text. It will also make the row smaller if the text is smaller.

Column Width will open the same window as the Row Height button did and let you type in a number for the column width.

AutoFit Column Width will take the longest text and adjust the column to fit the text. It will also make a column smaller if the text is smaller than the column.

If you have a large number of rows or columns you will find the Hide & Unhide feature useful. You can select a column or row by clicking on the row number or column letter then select hide row or hide the column. You can get your rows and columns back by highlighting the row or columns on either side and selecting unhide row or unhide column. You also have the option to hide an entire sheet.

9.8 Rename Sheet

The next selection is Rename Sheet. Click on this selection and notice at the bottom of your Excel document the Sheet 1 is highlighted. Type your new name for the sheet and press Enter. You can also do this by double-clicking the sheet name.

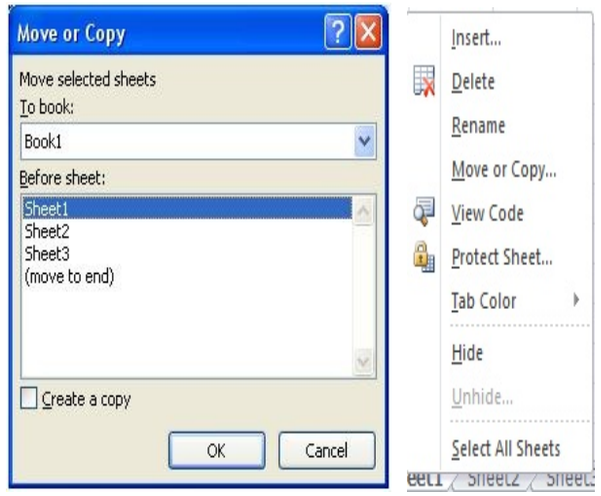


Figure 141: Renaming Function & Figure 142: Move and Copy

The tab color selection will let you organize your Excel sheets by color. Select the sheet you would like to change the tab color and then click the over arrow to select your color.

To change the order of the Excel sheets click the Move or Copy Sheet button.

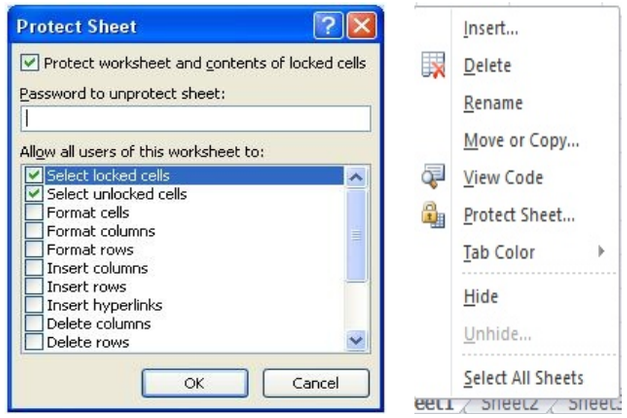


Figure 143: Protect Sheet in MS – Excel

This will bring up the Move or Copy window. The window gives you the option to move the sheet to another book with the drop down arrow or you can select the sheet you would like the sheet you are moving to appear before. By checking the box to Create a copy you will leave the sheet in the original place and move a copy of the sheet to the new location you selected.

The next option is Protect Sheet. Click this option to see the Protect Sheet window. If you have information in your spreadsheet that you don't want others to be able to change you can make it password protected.

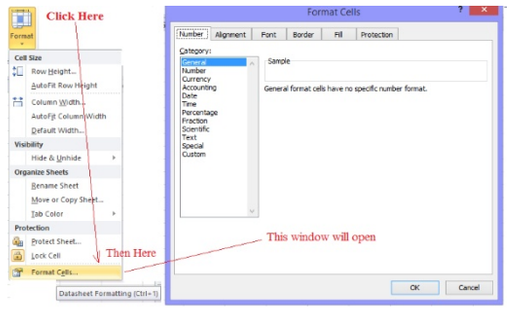


Figure 144: Format Cell Window

Then the only way the selected cells can be changes is if you enter the password. You can lock a cell completely or just check certain options that another person will not be able to change. Browse through the options if you don't want to password protect your spreadsheet click cancel.

To make the Lock Cell button work you need to have the Protect Sheet setup. Then you are able to lock cells in your spreadsheet as you create it. The last selection in the Format button is the Format cells button. This will open the window you see below which gives you all of the options we have already covered to format your cell. This is nice because all of the format options are in one spot.

9.9 Editing

This is the last section of the Excel. It consists of AutoSum, Fill, Clear, Sort & Filter and Find & Select buttons as shown in the figure below

The first button in the Editing tab is the sum symbol. Click the down arrow to see the options.

These different sub-options are used for the different mathematical operation. The name shows the type of operation.

Figure 145: Editing Section of MS – Excel

This will copy cells for you in any direction. The feature I like with this button is the Series selection. Just type the first 3 and highlight how far you want the dates to go then select Series. A window will come up and let you select the date unites you want to count by then select ok and the cells you selected will automatically be filled in with the dates.

Figure 146: AutoSum Options in Editing Portion

Figure 147: Options in Fill Portion

The next button in the Editing section is the Eraser. Click the down arrow to see the options. This feature lets you selectively erase parts of your spreadsheet.

You can Clear everything, Clear only the formatting, Clear the Contents of selected cells, or if you have comments (we have not learned about these yet) you can just clear those.

Figure 148: Different Options in Clear Button

The next button is the Sort button. This button will let you sort your data from highest to lowest depending on what type of data you have you can also alphabetize columns of data with the sort button. Notice in my budget spreadsheet I sorted my Household data from lowest to highest. You can also do this if you have created a table with the format table button it gives you the sort arrows above each column. If you have not created a table you will need to highlight the area you would like to sort.

Figure 149: Sort & Filter Buttons Action

You also have the option of doing a custom sort. This will open a new window for you to input your selections.

The filter button is what gives you the arrows above each column. If you have not used the table feature you might want to filter a row. Try filtering a row and looking at the options the arrows in the cells give you.

The last button is Find & Select. This button works like a search. It will find specific numbers or words in your workbook. Click the down arrow to see the options.

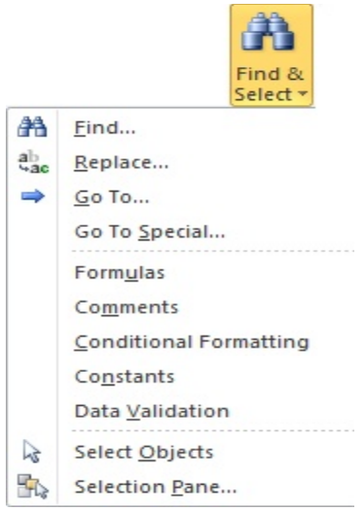


Figure 150: Find & Select Button Options

If you have large amounts of data this is a quick way to find what you are looking for. I also find the Replace feature very useful. The Replace button will open another window and let you type the text you are looking for then the text you want to replace it with. It will go through the entire document and replace all matching text.

10

MICROSOFT POWERPOINT 2010 TUTORIALS

MICROSOFT POWERPOINT 2010 TUTORIALS

10.1 Introduction

When you open PowerPoint 2010 you will be opening a new project. All of your basic commands are located in the upper left-hand corner of the screen in the File Tab.

10.2 File Menu

Let's start by clicking File in the left-hand corner so I can describe what all of these functions do.

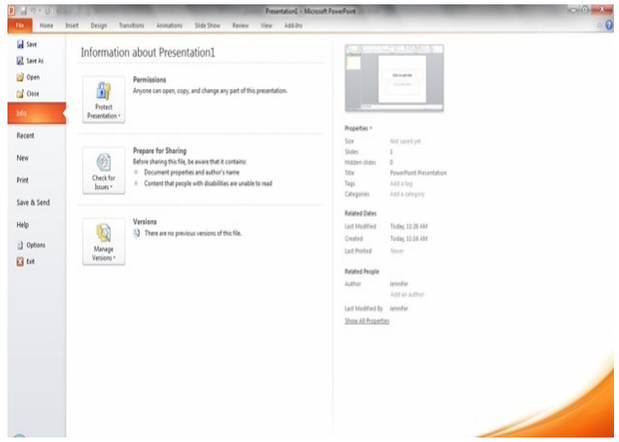


Figure 151: File Menu View of PowerPoint

Info is selected by default in the File tab. In this option, you will see three buttons. Protect Presentation is a feature you can use to lock down your presentation so only specific users can edit or open the presentation.

Click the down arrow to **Protect Presentation**. The first option is Mark as Final. Selecting this option will bring up a confirmation window.

Click OK and the presentation will be marked as final and be read-only. No changes can be made to the final copy.

The next option is Encrypt with Password. Click this option to open the Encrypt Document window. Type your password in the text box and click OK.

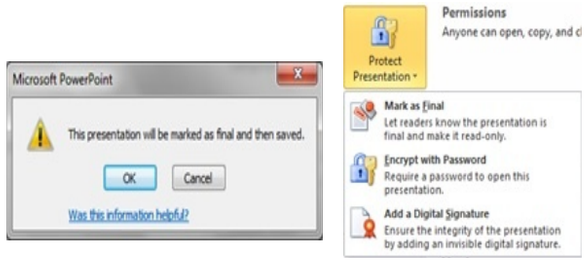


Figure 152: Different Privacy Options in PowerPoint

If your password encrypts your presentation you will have to enter the password each time you open the PowerPoint presentation. If you forget your password there is no way to recover the presentation so make sure you keep track of the passwords you use.

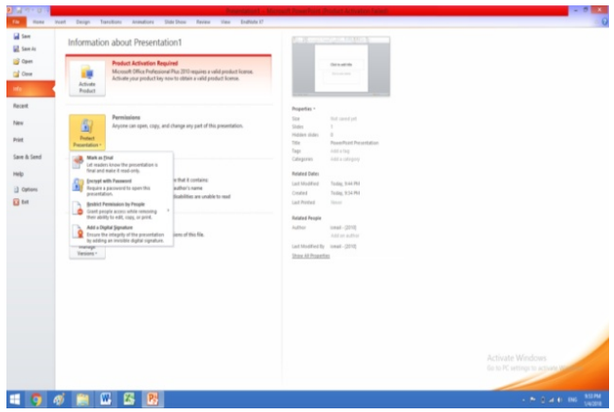


Figure 153: Info Submenu option

Figure 154: Password Protection Window

The last option is Add a digital signature. A digital signature is a way to make sure the documents you send electronically are authentic.

Click this option and you may receive a warning message about the legalities of digital signatures. Read and then click OK. The presentation needs to be saved before you can add a digital signature. If your presentation is not saved another window will come up asking you to save. Then the Sign window will come up. The default signature will be the name that was registered when you installed the program. Type the purpose of signing the presentation in the text box. If you would like the change the name of the person signing the presentation click the change button. When the changes have been made click sign apply the signature and return to the presentation.

Figure 155: Digital Signature for Protection

The next button is Check for Issues. Click the down arrow to see the three options.

The first option is Inspect Document. Inspect document is to check your presentation for personal information before you share it electronically. If you do not inspect your document you run the risk of your company information being revealed to anyone that has access to the presentation. Click this button to open the Document inspector window.

In the document inspector window check the boxes next to the items you would like check for personal information. Click Inspect after making your selections. You will get another window that will give you a report on the inspection and allow you to remove any information found to protect your privacy.

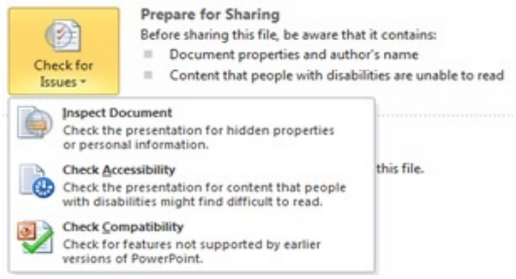


Figure 156: Document Inspect Options Window

If you wish to re-inspect the presentation after you have removed any privacy issues click the re-inspect button at the bottom of the window. Click Close to return to your presentation.

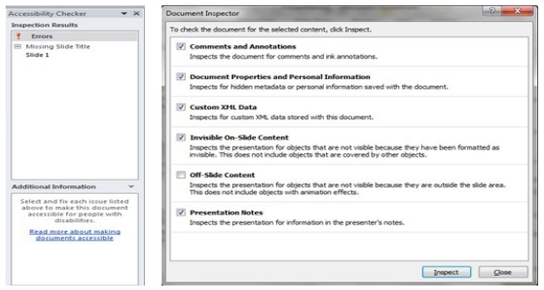


Figure 157: Accessibility Checker Window

The next option in the check for issues button is Accessibility Checker. The Accessibility Checker checks your file against a set of possible issues for people who have disabilities might experience in your file. Each issue is classified as an Error, Warning, or Tip.

Click on the Accessibility checker option. This will open a navigation pane in your presentation. If there are any errors in accessibility They will be listed in this navigation pane. If you click on the error listed additional information will be populated with the reason why it is important to fix the error and how to fix it.

Once you have corrected all of the errors you can click the small x in the upper right corner to close the accessibility checker navigation pane.

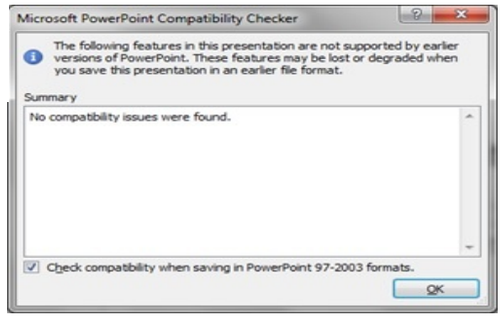


Figure 158: Compatibility Checker

The last option in the File menu, info option is compatibility checker. Click on the compatibility checker button. This will open the compatibility checker window. If there are any issues with your presentation that are not compatible with previous versions of PowerPoint they will be listed in this window. If you are sharing your presentation with someone that has an older version of PowerPoint you will want to correct any of the compatibility issues before sharing the presentation. Click OK to return to your presentation.

Click on the File menu again. The first four options are the basics for PowerPoint 2010. Save option will save your PowerPoint presentation without asking you for a file name

and location. The only time this will ask for a file name and location is the first time you save. Save As will open the windows browser each time you click this button. The windows browser will let you choose a location and file name for the presentation to be saved. This window will come up even if the presentation has been saved previously. Open will open the windows browser for you to navigate to files on your computer and open an existing PowerPoint presentation. The only files shown will be PowerPoint files. Close will close your presentation.

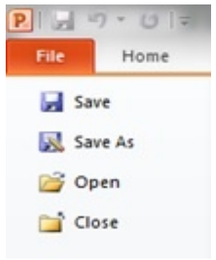


Figure 159: Different Options in File Menu

The Recent option in the file menu will show a list of presentations you have opened. You can make adjustments to what is shown in the window by checking the box at the bottom of the list. Checkbox in front of Quickly access this number of Recent Presentations lets you change the quantity of file listed using the up and down arrows in the text box.

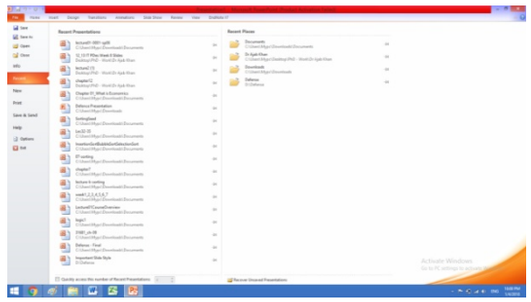


Figure 160: The Recent Option in File Menu

Recover unsaved presentation button will open the windows browser to the default temporary file folder. If you have not shut down your machine or depending on settings if you did not save a presentation you may still be able to access the file.

10.3 Home Menu

It consists of many sections like Clipboard, Font, Paragraph, Drawing, and Editing and already has been covered in both MS – Word and MS – Excel. The only different section is Slides, which consists of New Slide, Layout, Reset and Section.

If you click New Slide button, many options will appear, depends on your mode that which type of slide you are going to select for yourself. It consists of a slide having title, a slide having tile and contents in it, section header means that are you insert a header in your slide that appeared for the remaining all slides.

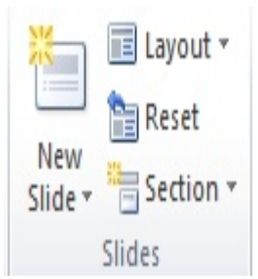


Figure 161: Home Menu in PowerPoint

Two contents slide also available because sometimes the presenter is shown his/her contents in two slides and sometimes compare it and so on. Different Layout for the already selected new slides is available in this part of the PowerPoint.

We can also reset the entire layout to its default one by clicking on the reset button.

If we want to add some extra section, don't worry just click on section button, go to Add Section, we can easily add an extra section(s) in our presentation. We can also give a different name to each section for different purposes by

simply clicking on the rename section. By clicking Remove Section button, a single section shall be removed and by clicking Remove All Sections means we will go back to the original slide layout. Collapse All option is for the division of and slide into parts while expanding means to place a duplicate of the existing slide in the same project.

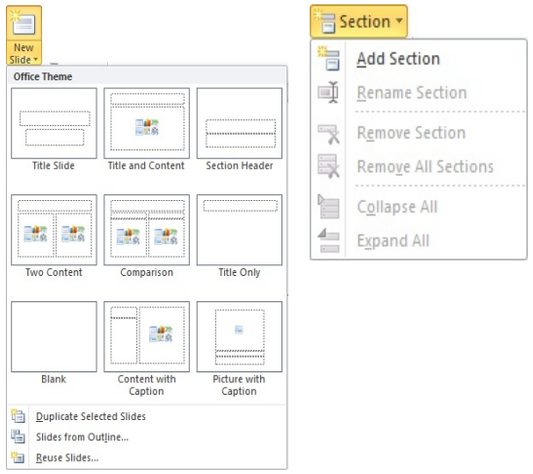


Figure 162: Slide Section Options & Figure 163: Different Themes

10.4 Insert Menu

The Images section in PowerPoint 2010 is going to be helpful when adding photos to your work. We will be learning from left to right, step by step about the Images section.

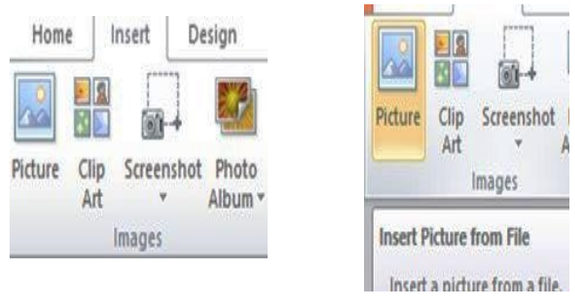


Figure 164: Insert Menu View in PowerPoint

Clicking on Picture will allow you to add photos that are saved to your computer, to the piece you are creating. By clicking on Picture, a small box will appear showing your options of photos. You can click on your photo of choice and then click on Insert, at the bottom of the box. The image should appear on your page and allow you to move and adjust the image accordingly.

Clip Art is going to help you search for images, drawings, sounds, etc.

Figure 165: Clip Art Option in Insert menu

This will allow you to illustrate a certain concept, which is nice when wanting to create a fun piece of work with effects to it.

By clicking on Clip Art, a long box will appear on the right-hand side of your screen.

This box will help you search for a sound image or video.

Type in your search where it says, "Search for:" Below it is going to say “Results should be:”

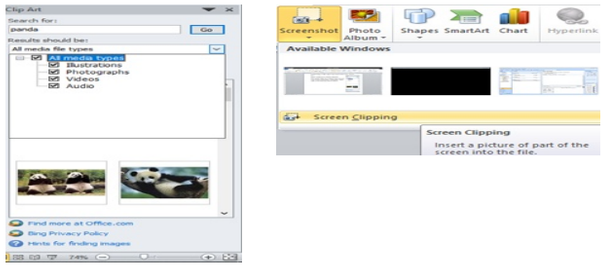


Figure 166: All Media Files Will be place here

This is going to allow you to choose if you want your search to pull up Illustrations, Photographs, Videos, Audio, or All media type (all of the above).

A screenshot is when you want to capture a photo of a part you screen. When you click on Screenshot, a small box will appear, showing you available windows you may have open that you can screenshot. Or, you can click on Screen Clipping at the bottom of the box. When using this, make sure the window you want to screen clip is the last window you opened, because that will be the window PowerPoint 2010 will pull up for you to Screen clip.

When you click on Screen Clipping, the window you want will appear with a fogged out screen. You will be given what looks like a larger “+” to screen clip what part of the screen you want.

When you are done selecting what you want, it will appear as an image in PowerPoint 2010, and you should be able to adjust it to your liking.

Figure 167: Create New Album for Your Pictures

Photo Album Is your own virtual photo album. You can put photos of your choice, in the order you want, with or without text, black and white or in color. After clicking on Photo Album, you may choose to create a new album or edit one you already made. In this portion of the tutorial, we'll discuss how to create one.

After clicking "New photo album" a small box will appear. It will allow you to add images by clicking on "File/Disk…”. From here you can choose your photo(s) of choice. Below is "New text box" when you can a box to insert a text you want.

You will be able to type in the text once the photo album is made. At the bottom, you can choose Picture layouts, the shape you want your photos to be, and search for a theme. When you are done you may click "Create".

The PowerPoint 2010 Text section of the Insert tab allows the user to insert and edit Text, Word Art, date and time and add slide numbers to their PowerPoint presentation.

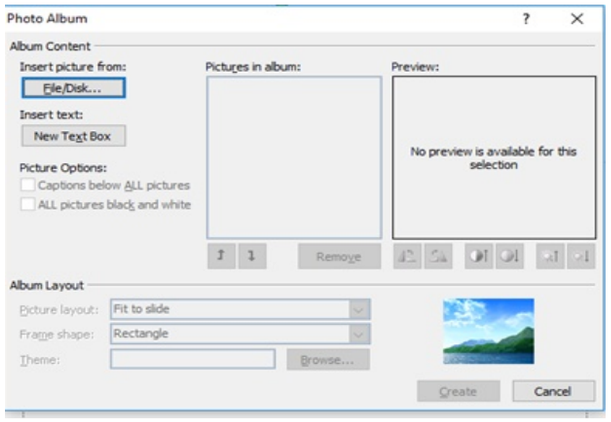


Figure 168: Different Options for your Photo Album

The first icon in the text section of the insert tab is Text Box.

Figure 169: Text Box for Writing in Slide

This allows you to insert text and move it around the page. When the button is clicked on move the mouse cursor onto the page the normal cursor should look like an upside-down T. Now click and hold the left mouse button then drag the cursor until the box it the size you want. The box will only be adjustable by width as height is automatically set. From here the text box can be moved and changed like any other box by right-clicking or normally typed in. To move a text box simply drag it to the desired position.

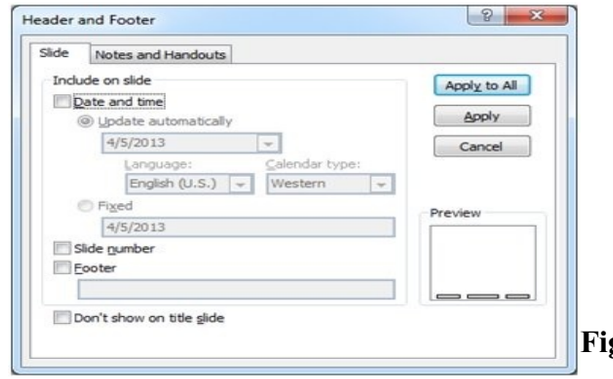


Figure 170: Header and Footed for Slide

To resize it click the box and move the dots that are on the dotted lines. The green dot rotates the box.

The second icon says Header & Footer. Once you click the icon this menu will pop up.

In the slide tab of the Header & Footer menu there are four selectable boxes, Date and Time,

Slide Number, Footer, and don't show on the title slide.

Checking the Date and Time box will display the date in the lower left corner of the page. The gray text on under this becomes black and gives two options. Selecting Update automatically the date will change every day to match, however, if you select the Fixed bar and type, the desired date this will be permanently displayed and not change.

Figure 171: Footer of a Slide

Selecting Slide number will display which slide you are during the presentation on the lower right-hand side of the page.

Selecting Footer will allow you to add text to the bottom of the page by typing in the box directly below Footer.

If you select Don't show on title slide any of the above will be seen on the title slide this is only relevant if you select Apply to All.

All of these options can be used on a single slide by clicking apply while on the desired slide or applied to all by clicking Apply to All.

This is an example displaying all three options used.

Click on the Notes and Handouts tab. This tab in the Header and Footer window is very similar to the Slide tab of the Header and Footer icon. This, however, adds the option of a header which is displayed across the top of the page. These options only affect the Handout Master and Notes Master in the View bar.

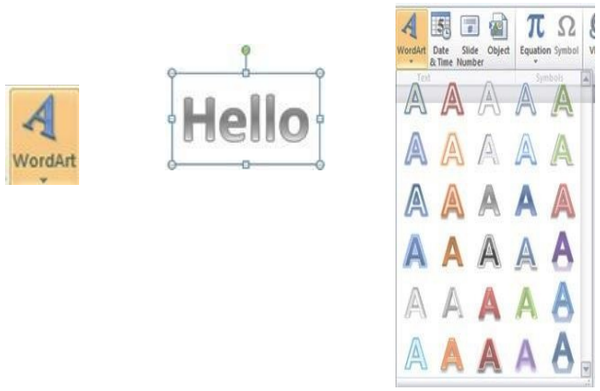


Figure 172: Word Art Options

Click Apply to All to save your changes in this section or Cancel button to discard changes and return to your slides. The next icon under the insert tab is the WordArt icon. This allows you do enter decorative font to a slide.

First click the word art icon. You will get a drop-down menu that looks like this. Click a style you like and you will get a new text box that says "Your text here" in it with the style you choose. Simply triple click the text and then type what you want to add. To the left is my finished product.

More options appear above but that will be covered in the format section.

The next icon is Date & Time. However, this brings up the Header & Footer menu which is explained in the Header & Footer section.

After the Date & Time icon is the slide number icon. This is also explained in the Header & Footer section. As it bring up the same menu.

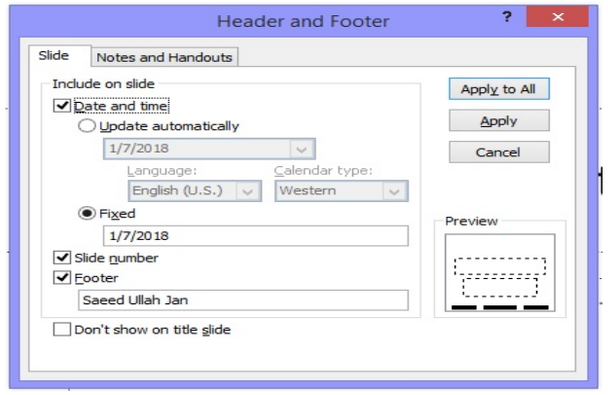


Figure 173: Header and Footer Fixing Window

Figure 174: Header & Footer View

The Object icon inserts an embedded object into your documents such as a media clip or an excel document.

Click on the Object button. This will open the Object window. In this window, you can select the type of object you would like to insert from a list of programs.

Figure 175: Date & Time, Slider Number and Object Selection Buttons

If I want to add a graph from a Microsoft Excel worksheet I would click the appropriate object type which in this case would be the "Microsoft Excel 97-2003 Worksheet" then clicking ok. An Excel document will appear on the slide and could be used just like normal excel to show a graph or a table. Click the next arrow to continue to the symbols section of the insert tab.

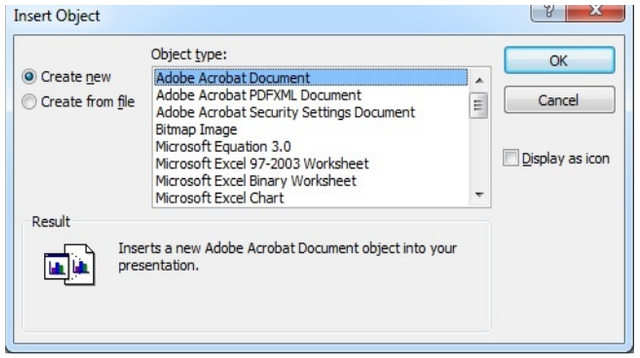


Figure 176: Insert Option Window

The symbols section of the Insert tab allows you to add mathematical equations and characters that are not on your keyboard into your presentation.

The first icon is the equation icon. Clicking it will add an empty text box and bring you to the Equation Tools tab which is explained here

This can be complicated if you want a standard equation. For a list of equations click the down arrow on the equation

icon. This bar will drop down with multiple equation options. I want to add the equation area of the circle so I will click it

The equation will pop up on the page in a text box. If for some reason you want to add something else just edit like a normal text box. In this case, you may want to add a symbol use the next icon, the symbol icon.

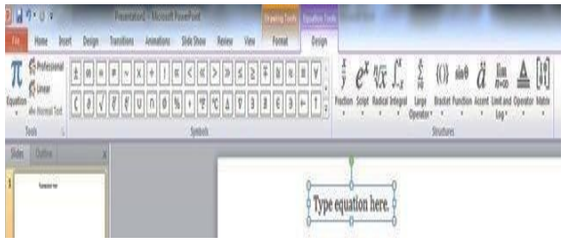


Figure 177: Symbols, Mathematical Equations and Characters Insertion Menu

You will notice the box may appear gray and be unusable. To make this icon light up simply click on the text box where you would like to add the symbol. Then click the symbol icon and this menu will appear. Pick the symbol you want and add it to the equation. Repeat the process as needed for additional symbols.

The PowerPoint 2010 media tab allows you to insert a video or audio piece onto your slide.

This can be useful to add an explanation or visuals to the presentation. There are two icons in the insert tab media section.

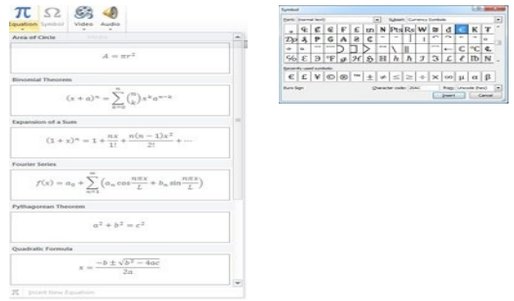


Figure 178: More Characters & Symbols & Figure 179: Equation Types View

The first button is the video icon. Clicking the video icon opens the option to insert a video from another file on your computer.

Clicking the down arrow on the video icon brings up these options.

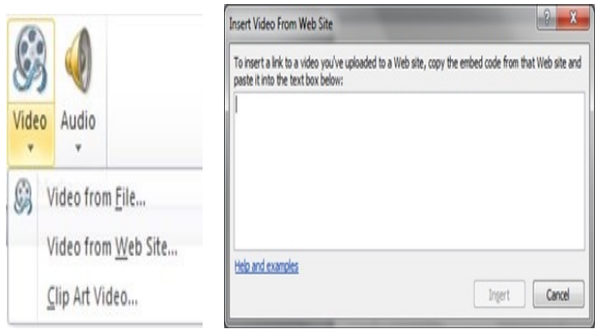


Figure 180: Insert Audio/Video for your Slide from here

The first options, video from a file, bring up the windows explorer window that opens if you just click the icon. From this window, you can browse to a video file on your computer to insert into your presentation.

The next option, Video from Web sites, opens a window that displays a space to paste the URL from web site video. Once an URL (ex. www.jankp.com) is entered click the insert button and the video will be inserted into your presentation.

Figure 181: Clip Art Menu

The final option is to upload a Clip Art video. Click this option and the clip art bar opens. In this bar which appears on

the right search for the type of animation you want and picks from the list. Double click the one you have decided on and it will appear on the slide.

The last icon is the audio icon. The first two options, Audio from File and Clip Art Audio, are exactly the same and do the same thing as inserting a video except they insert audio clips instead The last option in the Audio drop-down menu gives you have the ability to record audio. To do this clicks the record audio button. To do this you must have a microphone plugged into your computer

The Record Sound window will pop up. Clicking the red circle button, record button will start the recording.

The blue square stops the recording when you're done. To listen to the recording press the arrow and if it sounds good to enter the name and press ok to insert your audio recording into your presentation.

Figure 182: Recorded Sound/Audio from here

10.5 Design Menu

The design tab is the third tab on PowerPoint. Clicking it will bring up the design bar. In the design bar, you can change how the slide background looks and how the page is sized and oriented. Changing the size and orientation of a slide is controlled in the first section, Page Setup.

Figure 183: Design Menu View in PowerPoint

There are two options that appear in the page setup section, "Page Setup" and "Slide Orientation". If you click the "Page setup" icon this window will appear.

This is where the entire page sizing is controlled. The first option is, Slides sized for, this option allows you to change the screen ratio so that a slide could fit full or widescreen. These are selected in the drop-down menu. Click the down arrow under Slides sized for: to see the options. These options can be changed to fit any standard display or page size. Slide size can also be manually entered by adjusting the width and height options below this.

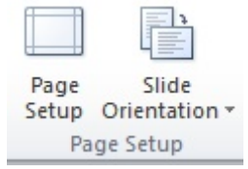


Figure 184: Page Setup and Slide Orientation Buttons

"Number slides from" is the next option and it just changes the slide number. On the right are the orientation options. You can pick if the slide should be portrait or landscape as well as the notes and handouts. When you click OK all of the changes will automatically be applied to the slide. Click cancel will keep the settings as they were before.

The next icon is the slide orientation and is a drop menu that you can use to select if the slides should be portrait or landscape without having to go into page setup.

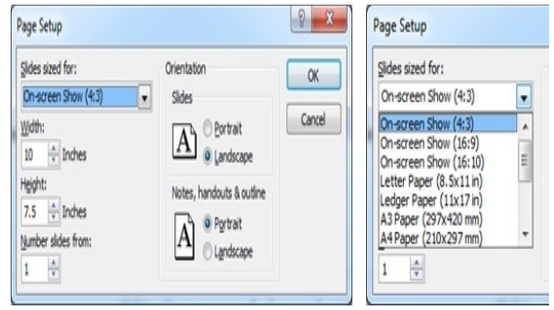
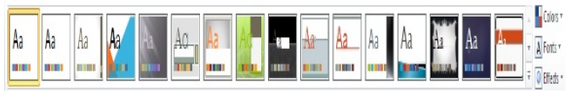


Figure 185: Page Setup Options in PowerPoint

The next section of the Design tab is the themes it is very user-friendly. This is a very interesting feature of PowerPoint.

You will notice the first box is highlighted already and this is the automatic or default font and background. Clicking the other options along the bar will change the style of a slide.



Different Themes in PowerPoint

Clicking the arrows on the right side of the slide options will scroll down or bring up this drop menu which shows all of the themes. Simply click one and it will automatically apply it to your presentation.

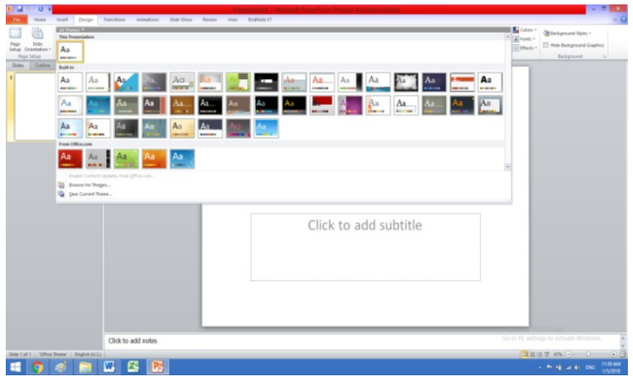


Figure 186: More Themes in PowerPoint

If you don't like the colors or fonts available in the theme you can manually select the colors and fonts that you want. Just click the drop bars that are on the right of the theme selection like you did for the themes. In here you may choose the options that you like in the theme. Colors change the background as do effects while font changes the font on every slide. By changing these you can totally customize the theme of these your presentation.

The background section under the design tab is the best way to create custom backgrounds for a slideshow. Clicking the Background styles icon drops a menu with some basic options Clicking on any of the default backgrounds will place it on your slide. I will show you how to create a custom one.

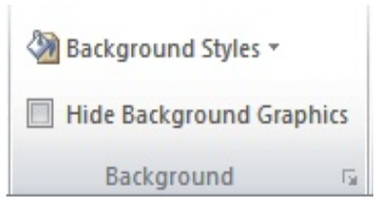


Figure 187: Background Section of Design Menu in PowerPoint

At the bottom of the drop-down menu is the option to format background. Click this and the format background window will appear.

The first option in the navigation bar is the "fill" option. The "fill" bar is where colored backgrounds are created. Click the radio button on the option you want.

Figure 188: More Background Themes

Solid fill makes the background one color. Each selection will give you a different set of options. Gradient fill is where you can select more than one color and have them transition through the page.

Picture or texture fill gives you more options to customize your background selection. You can browse your computer for pictures. The patterns allow you to add a pattern to the page and you can change the color of a pattern.

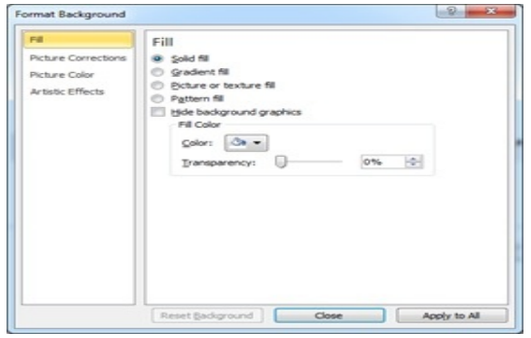


Figure 189: Format background Window

10.6 Transition Menu

Slide transitions are motion effects that occur in Slide Show view when you move from one slide to the next during a presentation. You can control the speed, add sound, and even customize the properties of transition effects. Transitions are optional and if you will not use them your presentation will move from slide to slide with a click of the left mouse button, by pressing Enter or the right arrow key on the keyboard. You must set slide transitions if you want the presentation to play on your own.

a. Preview: You can see what you created so far, your transition in action.

b. Transition to the slides: Most commonly used transitions appear here. To see more transition options, click the down arrow on the right of this section.

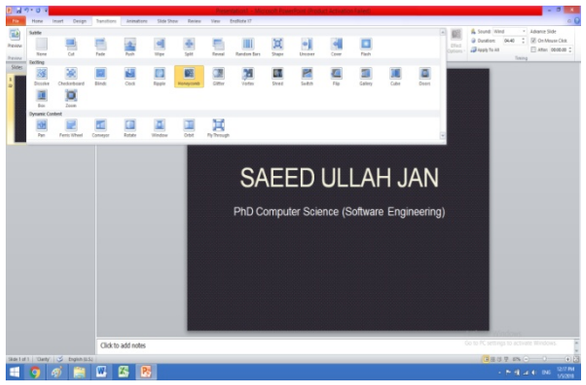


Figure 190: Different Transitions for your Slide in PowerPoint

c. Timing: In this section, set the sound for your slide, given time threshold and then click on Apply to All button, so that your own choice should be fixed to your all slides. OR By clicking Apply To All you can set current transition to be a transition between all slides of your presentation.

10.7 Animations Menu

While SLIDE TRANSITIONS are motion effects that occur in SLIDESHOW view when you move from one slide to the next during a presentation, ANIMATIONS can be applied to individual objects (or groups of objects) of the slide.

Let's review sections of ANIMATION tab first (left to right)

Figure 191: Animation Menu View in PowerPoint

Notice that most items are not active (greyed)

To make them active we need to select an object on our slide, so we need to create a simple slide and select something.

In the Preview section of the Animations tab, you can see what you created so far, your animation in action.

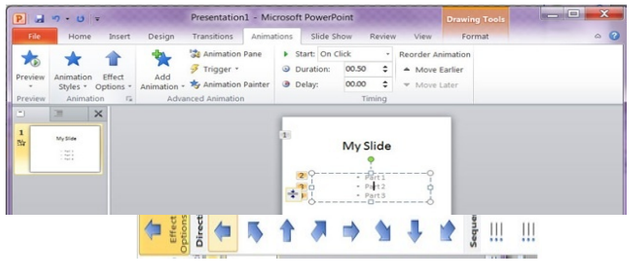


Figure 192: Different Preview/Directions for Slides in Animation View

Animation Styles. Choose from a variety of ways your object enters the slide (fly in, zoom, bounce…) or exits (disappear, fly out, fade…) slide, or be EMPHASIZED (pulse, spin…). You may even define the motion path of your object within your slide.

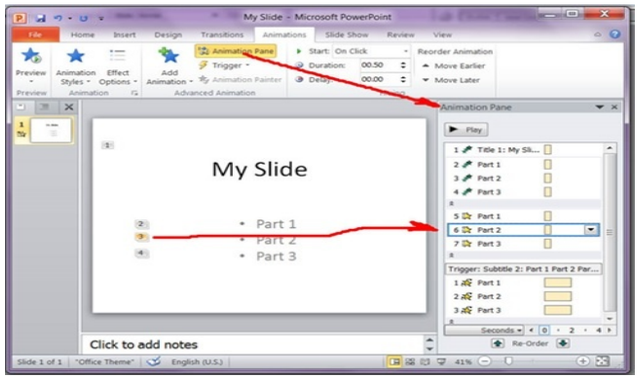


Figure 193: Animation Pane View

Effect Options. Every animation has certain ways that it works. Options may be different for different animations.

If you are using FLY IN animation your available options will be: from left, right, top, bottom etc. Also, you may define here if you want to move all selected objects as one, at once or by paragraph. You can apply several animations to one object. For example, after your object uses the fly in the option you can make the object start to blink or spin.

In the Advanced Animation section of the Animations tab is the Animation Pane. When you click this button, the Animation Pane appears on the right side of the screen.

Every "move" of our animation will be listed there with number, icon, time frame etc. You can change consequence of events directly using Pane (move any part up or down by clicking green Re-Order arrows in the bottom of pane), adjust time frame (by moving sides of "time frame" rectangles manually or choosing trigger events from drop down menu appearing when you click little arrow on right side of

highlighted animation). Or maybe you will like to control events from the panel on the bar by clicking the Play button on top of the pane you can see how your animation works step by step.

10.8 Slide Show Menu

You have created all slides for your presentation and ready to show your work. Where will we start? Let's review the Slideshow Tab.

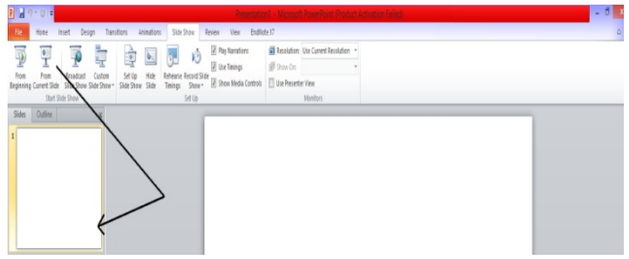


Figure 194: Slide Show View in PowerPoint

Start Slide Show section of Slide Show tab ribbon:

One of the slides on the left is highlighted with yellow. This is the current slide, the one you see in the main portion of your window.

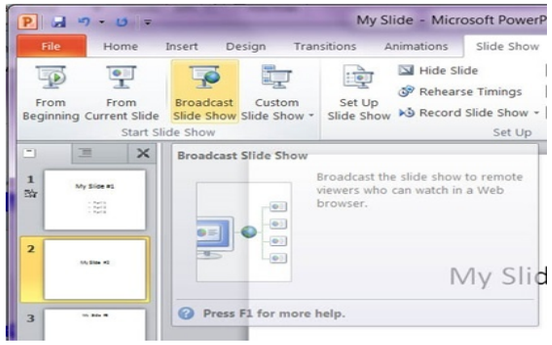
We can watch our entire Slide Show from the first slide (From Beginning) or From Current Slide. How to move from one slide to another we described in Transitions section of this tutorial.

Broadcast Slide Show - you can broadcast a PowerPoint 2010 presentation to remote users who can watch it via the browser! Send a link via email to the people with whom you would like to share the presentation and they can all enjoy the show at the same time!

To broadcast presentation, you have to use a broadcast service. Share point is one of the options if you and your audience have access to the Share point broadcast site. But we can use the PowerPoint Broadcast Service. Anyone can get a free Windows Live ID and then use it to broadcast their PowerPoint presentation.

When setting up your PowerPoint for broadcast, consider this:

a. All of the audience members must be able to use Internet Explorer, Firefox, or Safari for Mac browsers to connect to the Internet



b. Some of your transitions, audio, and video may need to be adjusted. All transitions will have a Fade effect during the broadcast. You might need to upload the video to a separate site to be able to show it to anyone watching your presentation.

So, let's click Broadcast Slide Show button.

New window will open

Figure 195: Broadcast Slide Show

To use the PowerPoint Broadcast Service, click Start Broadcast in the Broadcast Slide Show dialog box. If you are using another Share point service, then you will need to click Change Broadcast Service. You will then need to select the service you would like to use to broadcast your show. If you cannot see the service you would like to use, then you will need to select "Add a new service".

Login with your Windows Live ID. If you do not have a Windows Live ID you can sign up from here by using the sign-up link on the bottom left of the window.

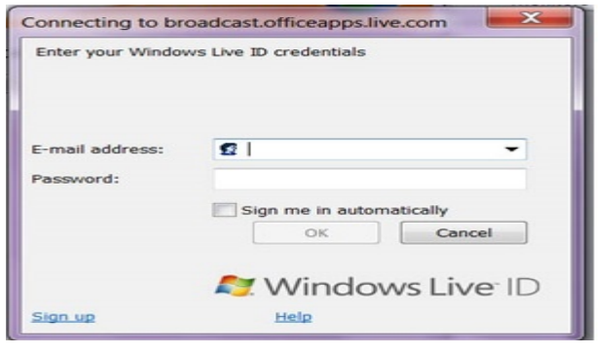


Figure 196: Send your Slides to an Email

A web address (URL) will be created for you. You can send it out via email by copying and pasting the link into the body of your email. Each of the participants in your broadcast will then be able to click on the unique web address in the email and see the presentation after you have selected Start Slide Show. During your presentation broadcast, you will have a Broadcast tab that will appear with options for you during the presentation. You can end the show by hitting the ESC key to end your PowerPoint show and then click End Broadcast.

Custom Slide Show - here you can create several variations of your presentation for different audiences and durations. To Define Custom Show, name new version, add any set of slides from left (all slides) to right (custom set). You can even change sequence of slides in custom show by

moving any slide up or down (use arrows on right) or from here as shown in the following figure.

11

CONCLUSION

CONCLUSION

As you can see, a computer is more than that box sitting on the side of your desk. In fact it is a very complex machine comprised of numerous parts, cables, and devices that all need to properly work together in order for the computer to operate correctly. Having this basic understanding of the parts of your computer is important for any computer user. Whether you need to purchase a new one, upgrade an existing one, or repair a broken one, you now have the knowledge to understand what you are looking at.

Computer networks have had a profound effect on the way we communicate with each other. The first computer network was invented to allow for a distributed communications network that lets a person do automatic rerouting. The original job of this type of system was to allow government, researchers and military leaders to continue monitoring the possibility of danger from the enemy. The majorities of communications that occur over the Internet, except video calling, are text based, and therefore lack certain aspects of human communication such as facial expressions and body language. The fact that we can remain anonymous over the Internet has caused some people to blame the Internet for a rise in anti-social behavior.

A database in computer systems strengthens the majority of the achieved data and is store in the computer systems. In this introductory book we have considered database fundamental definitions which are mandatory for all. It will motivate all the learners for knowing about how to develop and maintain databases that meet user requirements.

Windows 8 is the recent release of the Windows operating system, produced by Microsoft for use on personal computers, including home and business desktops, laptops, tablets, and home theater PCs. This platform allows you to develop using the language and design tool of your choice, implements complex interfaces in a simple way, and creates

unprecedented interoperability between different applications.

Microsoft Word, Excel and PowerPoint are brilliant tools with many applications that are helpful to students and teachers in education. In this introductory Book, different screenshots are taken and presented for learners to enhance their practical skill, so that they can use each and every feature efficiently and effectively. The lessons were designed to help you understand and use Microsoft Word, Excel and PowerPoint to the fullest potential of the program.

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