B.A. Mass Communication

(1st Semester)

BAMC-103

COMPUTER APPLICATIONS

Directorate of Distance Education

Guru Jambheshwar University of Science & Technology, HISAR-125001

CONTENTS

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	ORIGIN AND GROWTH OF COMPUTER
LESSON NO.: 1	

STRUCTURE

1.0 OBJECTIVES

The computer is a major component of Information Technology. Computer's influence every aspect of life today from small businesses or even satellite launchings. Computers are playing very important functions. So, it is important that we become familiar with the growth of computers. In this lesson we shall try to trace the history and growth of computers

The objectives of this lesson are:

o To Know About the computer's history

o To Understand the Evolution of Computers

o To Know About the timeline of growth of computers

1.2 INTRODUCTION

A computer is basically an intelligent machine. When given proper instructions a computer can understand what to do with given data and process this data and give accurate result. A computer helps generate data. It can store large amount of data within a small sized hard disk. It can process data. In addition, a computer helps in retrieval and transmission of data also.

So it is necessary to know and understand the history and growth of computers The most powerful computer is called super computer today, but it does not even have 10% capacity of thinking compared to human beings. It means human mind is more powerful than 10 supercomputers together.

The difference between computers and human mind is that the computer cannot think rationally. Human mind can think without any boundaries. But a computer can do only what it has been instructed to do. The computer can perform a job that is tedious and mundane without errors, but the brain behind the computer is that of a human. As the popular saying goes, the computer is a GIGO (Garbage In garbage Out) machine. If you feed the computer with the garbage, you can only expect the garbage out of it. The human mind can make sense out of nonsense, but the computer can make sense out of sense only.

COMPUTER DEFINED:

The modern computer can be defined as:

An electronic machine that is designed to accept data and instructions, store the data and instructions, process the data according to instructions to produce or store desired results.

1.3 PRESENTATION OF THE CONTENT

The Content of this lesson shall be presented as follows:

- History of Computers
- Evolution of Computers

1.4 HISTORY OF COMPUTERS

Early 19th-century designs were crude compared to the machines that would revolutionise our world in the 20th century.

Over two centuries have passed since the first computer was built. During the nineteenth century, mechanical calculating machines were developed to address the growing difficulty of numerical computation, a problem that had previously been theorised by mathematicians and businessmen. By the early 20th century, technological advancements allowed for increasingly complex computers, and as a result, computers grew in size and power.

Modern computers have come a long way since their 19th century forerunners like Charles Babbage's Analytical Engine and even 20th century forerunners like the Electronic Numerical Integrator and Calculator, which took up entire rooms.

From their early days crunching numbers, computers have come a long way to become the powerful tools we use today to access the web, play games, and consume media.

EXPLORING THE WORLD OF THE 19TH CENTURY

In **1801**, French businessman and inventor Joseph Marie Jacquard creates a loom that can automatically weave fabric patterns from punched wooden cards. Similar punch cards were used in early computers.

In **1821**, English mathematician Charles Babbage comes up with the idea of a steam-powered calculating machine that could calculate numerical tables. According to research conducted at the University of Minnesota, despite receiving funding from the British government, the "Difference Engine" project ultimately failed due to the limitations of available technology

Ada Lovelace, the daughter of the poet Lord Byron and an English mathematician, created the first computer programme in 1848. Professor of theoretical mathematics at the University of Münster in Germany, Anna Siffert, claims that while translating a paper on Babbage's Analytical Engine from French into English, Lovelace wrote the first programme. "She adds her own thoughts to the text as well. Her notes, which she prefers to refer to as "notes," end up being three times as long as the actual transcript "In an article for the Max Planck Society, Siffert argued (opens in new tab). Lovelace "adds also a step-by-step description for computation of Bernoulli numbers with Babbage's machine — basically an algorithm"; this effectively makes her the first computer programmer. In mathematics, the Bernoulli numbers are a popular sequence of rational numbers.

The first printing calculator was created by Per Georg Scheutz and his son Edvard in Sweden in **1853**. According to Uta C. Merzbach's book "Georg Scheutz and the First Printing Calculator (opens in new tab)," this device was the first to "compute tabular differences and print the results" (Smithsonian Institution Press, 1977).

Herman Hollerith creates a punch card system to facilitate the tally of the 1890 United States Census. According to Columbia University, the machine will save the government several years of calculation time and the American taxpayer around $5 million (opens in new tab) In the future, Hollerith founds what would become IBM, or International Business Machines (IBM).

CENSUS XX

According to Stanford University, in **1931** Vannevar Bush created the first large-scale automatic general-purpose mechanical analogue computer at the Massachusetts Institute of Technology (MIT) with his Differential Analyzer

According to Chris Bernhardt's book "Turing's Vision" (opens in new tab), the concept of the Turing machine was first proposed by British scientist and mathematician Alan Turing in his 1936 paper "On Computable Numbers." (The MIT Press, 2017). Everything that can be computed by computers can be computed by a Turing machine. His theories form the foundation of today's computing machines. According to the UK's National Museum of Computing, Turing later collaborated on the creation of the Turing-Welchman Bombe, an electromechanical device intended to decipher Nazi codes during World War II

In **1937**, Iowa State University physics and mathematics professor John Vincent Atanasoff submitted a grant proposal to create the first electric-only computer. This machine would have no moving parts whatsoever, including no gears, cams, belts, or shafts.

Together with Bill Hewlett, David Packard established the Hewlett Packard Company in Palo Alto in **1939**. According to MIT, Hewlett and Packard choose their company's name with a coin toss and set up shop in Packard's garage.

According to Gerard O'Regan's book "A Brief History of Computing (opens in new tab)," German inventor and engineer Konrad Zuse completes his Z3 machine, the world's earliest digital computer, in

1941. (Springer, 2021). The machine was blown to bits in a World War II bombing raid on Berlin. O'Regan claims that after Nazi Germany's defeat, Zuse escaped to London, where he developed the Z4, the first commercial digital computer.

In **1941**, Atanasoff and his graduate student Clifford Berry created the Atanasoff-Berry Computer, the first digital electronic computer in the United States (ABC). According to the book "Birthing the Computer" (opens in new tab), this is the first time a computer has the ability to store information on its main memory and can complete one operation every 15 seconds (Cambridge Scholars Publishing, 2016)

In **1945**, John Mauchly and J. Presper Eckert, two professors at the University of Pennsylvania, created the Electronic Numerical Integrator and Calculator (ENIAC). Based on the definition given by Edwin D. Reilly in his book "Milestones in Computer Science and Information Technology," this device can be considered the first "automatic, general-purpose, electronic, decimal, digital computer" (Greenwood Press, 2003).

Following their departure from Penn in **1946**, Mauchly and Presper received funding from the U.S. Census Bureau to develop the UNIVAC, the first commercial computer for use in commercial and government settings.

The transistor was invented by Bell Labs employees William Shockley, John Bardeen, and Walter Brattain in **1947**. By trial and error, they figure out how to create a vacuum-free electric switch using solid materials.

The Electronic Delay Storage Automatic Calculator (EDSAC) was created in **1949** by a group of researchers at the University of Cambridge. In May 1949, EDSAC's first programme calculated a table of squares and a list of prime numbers, as described by O'Regan. Australia's first digital computer, the Council for Scientific and Industrial Research Automatic Computer, was constructed by CSIR scientists in November 1949. (CSIRAC). In O'Regan's opinion, CSIRAC is the first digital computer to ever produce musical sounds.

POST-INTERNET AGE

According to the National Museum of American History, in **1953** Grace Hopper created the first computer language, which would go on to be known as COBOL (an acronym for "Common, Business-

Oriented Language") (opens in new tab). In her posthumous citation for the Presidential Medal of Freedom, Hopper is referred to as the "First Lady of Software." The son of IBM's CEO, Thomas Johnson Watson Sr., Thomas Johnson Watson Jr., comes up with the idea for the IBM 701 EDPM to aid the United Nations in monitoring Korea during the war.

According to MIT, in **1954**, John Backus and his team of IBM programmers published a paper describing the FORTRAN programming language.

In **1958**, Jack Kilby and Robert Noyce introduced the world to the integrated circuit, or computer chip. A few years after his discovery, Kilby receives the Nobel Prize in Physics.

Douglas Engelbart unveils the first modern computer at the Fall Joint Computer Conference in San Francisco in 1968. His presentation, called "A Research Center for Augmenting Human Intellect" includes a live demonstration of his computer, including a mouse and a graphical user interface (GUI), according to the Doug Engelbart Institute. This marks the development of the computer from a specialised machine for academics to a technology that is more accessible to the general public.

1969: Ken Thompson, Dennis Ritchie and a group of other developers at Bell Labs produce UNIX, an operating system that made "large-scale networking of diverse computing systems — and the internet — practical," according to Bell Labs (opens in new tab.The team behind UNIX continued to develop the operating system using the C programming language, which they also optimised.

1970: The newly formed Intel unveils the Intel 1103, the first Dynamic Access Memory (DRAM) chip.

The "floppy disc," which allows data to be shared among different computers, was invented in **1971** by a team of IBM engineers led by Alan Shugart.

The Computer Museum of America claims that the first home video game console was released in September **1972** by German American engineer Ralph Baer under the brand name Magnavox Odyssey (opens in new tab). Pong, developed by entrepreneur Nolan Bushnell and engineer Al Alcorn at Atari, became the first commercially successful video game a few months later.

In **1973**, Xerox researcher Robert Metcalfe creates Ethernet, a network protocol that allows multiple devices (such as computers) to communicate with one another.

In **1977**, Commodore introduced the Personal Electronic Transactor (PET), a home computer powered by a MOS Technology 8-bit 6502 microprocessor that managed the device's display, input devices, and cassette player. O'Regan claims that the PET's greatest success has been in the classroom.

The Altair 8080 is featured as the "world's first minicomputer kit to rival commercial models" on the cover of the January 1975 issue of "Popular Electronics." Paul Allen and Bill Gates, two self-described "computer geeks," respond to the magazine issue by offering to create BASIC-based software for the Altair. Success with this initial venture inspires the two childhood friends to launch their own software company, Microsoft, on April 4.

On April 1st, **1976**, Steve Jobs and Steve Wozniak create Apple Computer. The MIT Technology Review claims that the Apple I is the first computer to use a single circuit board and ROM (Read Only Memory).

The National Museum of American History reports that in **1977**, Radio Shack began manufacturing 3,000 TRS-80 Model 1 computers, also known as the "Trash 80," at a price of $599 each. The book "How TRS-80 Enthusiasts Helped Spark the PC Revolution (opens in new tab)" claims that within a year, the company received 250,000 orders for the computer (The Seeker Books, 2007).

In **1977**, San Francisco played host to the inaugural West Coast Computer Faire. At the Faire, Jobs and Wozniak unveil the Apple II, a personal computer with colour graphics and an audio cassette drive for data storage.

An early example of a computerised spreadsheet, VisiCalc, was released in 1978.

In 1979, software engineer Seymour Rubenstein launched MicroPro International and released WordStar, the first commercially successful word processor. According to "Track Changes: A Literary History of Word Processing" by Matthew G. Kirschenbaum (opens in new tab), WordStar was written by Rob Barnaby and consists of 137,000 lines of code (Harvard University Press, 2016).

According to IBM, the first personal computer, named "Acorn," was released in 1981 at a price of $1,565. Window's MS-DOS is what Acorn runs on. A monitor, printer, two floppy drives, additional memory, a game adapter, and more are all available as add-ons.

IBM's first PC, the Acorn, ran on the MS-DOS operating system.

According to the National Museum of American History (NMAH), the first personal computer to feature a graphical user interface (GUI) was the Apple Lisa in 1983. Lisa stands for "Local Integrated Software Architecture" but is also the name of Steve Jobs' daughter. A pull-down menu and graphical icons are also available on the device. This year also sees the introduction of the Gavilan SC, the world's first flip-form portable computer commercially available for purchase under the "laptop" moniker.

Super Bowl commercial airing in 1984 introduces the world to the Apple Macintosh. At its release, the Macintosh cost $2,500, as reported by the National Museum of American History.

According to The Guardian, Microsoft released Windows in November 1985 as a direct response to the Apple Lisa's graphical user interface (opens in new tab). Commodore, meanwhile, unveils the Amiga 1000.

In 1989, British scientist Tim Berners-Lee submitted a proposal (opens in new tab) to the European Organization for Nuclear Research (CERN) that would eventually become the World Wide Web. His paper describes his plans for the Web's foundational language, Hyper Text Mark-up Language (HTML).

With the introduction of the Pentium microprocessor in 1993, multimedia capabilities on personal computers were greatly expanded.

In 1996, while attending Stanford University, Sergey Brin and Larry Page came up with the idea for the Google search engine.

When Apple was having financial difficulties in 1997, Microsoft put $150 million into the company.

This investment closes a case in which Apple accused Microsoft of ripping off its operating system.

Wired reported in 1999 that "wireless fidelity," an abbreviation for "wireless," was developed and could initially cover a distance of up to 300 feet (91 metres) (opens in new tab).

THE 21st CENTURY

In 2001, Apple introduced Mac OS X, which would eventually be rebranded as OS X and ultimately shortened to macOS. According to TechRadar, OS X has gone through 16 different versions, all of

which begin with the number "10," with the first version being codenamed "Cheetah" after the spotted big cat. (Link opens in new window/tab)

In 2003, Advanced Micro Devices (AMD) released the Athlon 64, the first 64-bit processor for desktop computers.

Mozilla Firefox 1.0 was released in 2004 by the Mozilla Corporation. Among the first serious competitors to Microsoft's Internet Explorer is this browser. According to the Web Design Museum, more than a billion copies of Firefox were downloaded in the browser's first five years

Google acquires Android, a Linux-based mobile phone operating system, in 2005.

Apple's MacBook Pro was released to the public in 2006. As the first dual-core mobile computer from the company, the Pro is powered by Intel.

Release date for Windows 7 by Microsoft is July 22, 2009. According to TechRadar, the new OS allows users to pin apps to the taskbar, scatter windows by shaking another window, access jumplists quickly, preview tiles with greater ease, and much more)

Apple introduces the iPad, its flagship portable tablet computer, in 2010.

To coincide with the launch of Google Chrome OS in 2011, Google also released the Chromebook.

The Apple Watch is set to debut in 2015. Windows 10 is unveiled by Microsoft.

In 2016, scientists successfully built the first quantum computer that can be updated with new code. "Up until this point, no quantum-computing platform has allowed users to add custom algorithms. Typically, they are designed to target specific algorithms "University of Maryland, College Park quantum physicist and optical engineer Shantanu Debnath was quoted as saying.

In 2017, DARPA, the Department of Defense's Advanced Research Projects Agency, is creating a new programme called "Molecular Informatics," which treats molecules like computers. "Chemistry offers a rich set of properties that we may be able to harness for rapid, scalable information storage and processing," said Anne Fischer, programme manager in DARPA's Défense Sciences Office. "There are millions of different molecules, each with its own distinct three-dimensional atomic structure and other distinguishing features. Because of this abundance, designers have a lot of room to play with different

approaches to encoding and processing data beyond the binary digits used in conventional digital architectures."

EVOLUTION OF COMPUTERS:

The computer we use today is the result of man's long search for a device to help in

performing computations. The search dates back to the 17th century. A series of scientific breakthroughs by many persons have contributed to produce this electronic machine called computer.

The word computer is derived from the word "compute", which means, "to calculate". If we look back to the history of the computers, it can be traced back to

3000 B.C. the Stone Age man used small round stones for counting cattle. Later, the Chinese developed a device called Abacus. This is supposed to be the first mechanical computing device.

In 1617, John Napier, a Scottish mathematician developed a device called Napier's bones. With the help of this device, multiplication and addition were possible.

In 1642, Blaise Pascal, a French mathematician invented the first mechanical calculator.

In 1673, Gottfried Wilhelm Leibniz, a German invented the Leibniz calculator which was used for addition, subtraction and multiplication.

A French weaver's son named Joseph Marie Jacquard made the next significant contribution in 1804. After observing his father making different weaving patterns on the loom, he thought of storing these patterns for future use. So, he developed a plate with multiple holes to control the weaving patterns, not knowing that one day his idea of storing the weaving patterns would be used to store data and would be called the Punch card.

A Punch Card is a thin rectangular card divided into 80 columns and 12 rows in which the various characters could be represented by punching holes in different rows and columns. On one card it is possible to punch 80 characters – one character per column, thus it is possible to store 80 characters of data.

Around 1822, Charles Babbage a professor of Mathematics at the Cambridge University devised an automatic calculating machine called Difference Engine.

The next significant invention came from Dr. Herman Hollerith, an American.

Hollerith built a computer to analyze the Census data of the United States of America in 1890. This computer was electro-mechanical and was named the Census

machine or Hollerith Statistical Tabulator.

Using this machine Hollerith announced the results of the Census in 2 ½

years as compared to 7 ½ years when the processing was done manually. Herman

Hollerith founded a company named "The Computing Tabulating recording

Company" which today is the IBM Corporation.

Howard Aiken built the first fully electromechanical computer named MARK-1.

In 1945, John Von Neumann, a Frenchman working in IBM, made a

significant contribution. He designed the basic structure of the computer to include

the capacity to:

(i) Perform logic functions.

(ii) Perform repetitive functions.

(iii) Store data and instructions.

In 1945, the fully electronic computer named ENIAC was built by Presper Eckert and

John W Mauchly. ENIAC stands for Electronic Numerical Integrator and calculator.

The computer has built-in LOGIC, the capacity to make a selection. Logic means some rational thinking, like, 2 is bigger than 1. The computer is capable of REITERATION or REPETITION. The data and instruction can be stored and retrieved using the computer.

1.6 SUMMARY

- A computer is a machine endowed with intelligence. It understands instructions

and performs a variety of functions. A computer helps generate data. It can store

large amount of data within a small sized hard disk. It can process data. In addition, a computer helps in retrieval and transmission of data also.

- The human mind can think without any boundaries while a computer can do only what it has been instructed to do. The computer can perform a job that is tedious and mundane without errors, but the brain behind the computer is that of a human. The human mind can make sense out of nonsense, but the computer can make sense out of sense only.
- According to the National Museum of American History (NMAH), the first personal computer to feature a graphical user interface (GUI) was the Apple Lisa in 1983. Lisa stands for "Local Integrated Software Architecture" but is also the name of Steve Jobs' daughter. A pull-down menu and graphical icons are also available on the device. This year also sees the introduction of the Gavilan SC, the world's first flip-form portable computer commercially available for purchase under the "laptop" moniker.
- In 1945, John Von Neumann, a Frenchman working in IBM, made a significant contribution. He designed the basic structure of the computer to include the capacity to:

(i) Perform logic functions.

(ii) Perform repetitive functions.

(iii) Store data and instructions.

1.7 SELF ASSESSMENT QUESTIONS (SAQs)

1.Write a detailed note on the history and evolution of computers.

2. Discuss the development of computers in new age era.

3. Discuss the development take place in reference to the computers in the 18^{th} century.

1.8 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

How the Web was Born: The Story of the World Wide Web; Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-101	COMPUTER'S CLASSIFICATION AND PARTS OF COMPUTERS
LESSON NO.: 2	

LESSON STRUCTURE

In this lesson we shall discus about the classification of computers. First, we shall focus on how computers are classified on the basis of computational methods. We shall also briefly discuss classification of computers based on size and capability. Next, we shall discuss about the components of computers. The lesson structure shall be as follows:

2.0 OBJECTIVES

The objectives of this lesson are:

o To Know About the Classification of Computers

o To Understand the Classification of on Computational Methods

o To Understand the Classification of Computers on Size and Capability

o To Know About the Various Components of Computers

2.1 INTRODUCTION

Computers are intelligent machines. We give relevant instructions to a computer, and a computer will do what it is instructed to do. A computer helps us generate data. It has the capacity to store vast amounts of data within a small sized hard disk. Computers process data. Also, computers help in retrieval and transmission of data. Computers are classified according to size, make, processing power, etc. In this lesson, we shall discuss about the classification of computers.

2.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Classification of Computers

o Classification of on Computational Methods

o Components of Computers

o Generations of Computers

2.2.1 CLASSIFICATION OF COMPUTERS

Human mind can think without any boundaries. Human minds think rationally. But a computer can do only what it has been instructed to do. The computer can perform a job that is tedious and mundane without errors, but the brain behind the computer is that of a human.

However, computers have emerged as very efficient and powerful tool that perform a wide variety of functions. A wide variety of computers are available in the market. These computers perform different functions. There are big computers. There are small computers. The most powerful computer is the supercomputer. Then there are mainframe computers. There are minicomputers also. Earlier there were

analogue computers. The computers we have these days are digital computers. Let us now discuss about these classifications of computers in detail.

Computers can be classified in following manner:

o Computational Method

o Sizes and Capability

2.2.2 CLASSIFICATION OF COMPUTERS ON COMPUTATIONAL METHOD

On the basis of computations computer can be classified in to three types as follows:

o Digital Computers

o Analog Computers

o Hybrid Computers

DIGITAL COMPUTERS:

A digital computer can count and accept numbers and letters through various input devices. The input devices convert the data into electronic pulses and perform arithmetic operations on numbers in discrete form. In addition to performing arithmetic operations, they are also capable of:

o Storing data for processing

o Performing logical operations

o Editing and deleting the input data

One of the main advantages in the use of digital computer is that any desired level of

accuracy can be achieved. The main disadvantage is their higher cost.

ANALOG COMPUTERS:

Analog computers process data input in a continuous form. Data are represented in

the computer as a continuous, unbroken flow of information, as in engineering and scientific applications. The main disadvantages of an analog computer are the accuracy factor and limited storage capacity. Hence it is not suitable for processing business data.

HYBRID COMPUTERS:

Computer can also be built using some parts employing digital computations and some parts based on analog principles. Such computers are called hybrid computers.

2.2.3 CLASSIFICATION OF COMPUTERS ON SIZE AND CAPABILITY

Computers are also classified on the basis of size and capability. Computers,

particularly digital computers, are classified as:

o Super Computers

o Mainframe Computers

o Mini Computers

o Micro Computers

SUPER COMPUTERS:

These are largest and fastest computers available. Super Computers are typically not used for commercial data processing. Instead they are used in specialized areas such as in **defense, aircraft design, computer generated movies, weather research** etc.

The first Super Computer was ILLIAC IV made by Bur Roughs. Other manufacturers of Supercomputer are **CRAY, CDC and NEC,** etc.

Super Computers can process 64 bits or more at a time. Their processing speed ranges from 10,000 million instructions per second (MIPS) to 1.2 billion instructions per sec. They can support 10,000 terminals at a time. They have huge numbers of storage and other devices connected to them.

MAINFRAME COMPUTERS:

Mainframe computers are less powerful and cheaper than Super Computers. However, they are very large in size. These are general-purpose computers capable of handling all types of scientific and business applications. Mainframe computers can process several million instructions per second. A Mainframe computer can handle more than 1,000 remote terminals. Mainframe computers have vast on-line secondary storage capacity.

A number of different types of peripheral devices like magnetic tape drives, hard disk drives, etc. can be attached with Mainframe computers.

MINI COMPUTERS:

Minicomputers perform data processing activities in the same way as the mainframe computers but on a smaller scale. The costs of Mini computers are lower. A Minicomputer is smaller than that of Mainframe computers.

A minicomputer can support 10 to 12 terminals. The most popular mini computers are Nova, Dec, PDP_II and IBM series of computers.

MICRO COMPUTERS:

These are the smallest category of computers, consisting of a microprocessor and associated storage and input/output devices. These are also called as Personal Computer Systems.

Microcomputers were first available in 1970's, when it became possible to put the entire circuitry of computer into a small silicon chip.

The first PC introduced was IBM-PC.

2.2.4 COMPONENTS OF COMPUTERS

We can broadly classify hardware components of computers into following two types:

o Central Processing Unit (CPU)

o Peripheral Devices connected to and controlled by the CPU

CENTRAL PROCESSING UNIT (CPU):

A Central Processing Unit controls the execution of programmes and performs the calculations. The CPU is also called as the brain of the computer. This is because

the CPU controls execution of any task by a computer. A CPU consists of of the

following units:

o Arithmetic Logic Unit

o Control Unit

o Memory Units

Arithmetic Logic Unit (ALU):

Arithmetic Logic Unit does the operations on the data stored in the memory. This part of CPU contains a large number of electronic circuits used to carry out Arithmetic and logical computations. These computations are carried out with the help of special purpose storage locations, called the registers. There are basically three types of registers in an ALU

o Storage Registers

o Accumulator

o Arithmetic and Logical Operation Unit

Storage Registers:

It temporarily holds data during execution of the programs. These are helpful in getting work done by a computer. For example, suppose data stored in two locations are to be interchanged. Then a third entity is required to hold the data temporarily. If the two locations are named x and y, then one can temporarily fetch x and keep it inz. Then y may be fetched and transferred to x. in the third step, z may be copied to y this third entity z may be a third location or a storage register.

Accumulators:

An accumulator holds the result of the calculations until needed later on. Operations are mostly carried out in two operands like we say, add x to y. Here x and y are operands. If in a computer instruction, always two operands are provided, then there will be requirement of a greater number of bits to express two operands. Computers are normally provided with a register called accumulator, so that in all operands this accumulator is assumed by the ALU as a default location for one of the operands.

Arithmetic and Logic Operation Unit (ALU):

It receives the data from two or more sources, performs the Arithmetic and logic operation unit and transfers the result to the accumulator. The Adder is an important component in ALU. In any case a computer performs all operations (subtraction, multiplication and division) through additions.

CONTROL UNIT:

The Control Unit contains that portion of the CPU, which controls each operation while a program is being executed. You must have noticed that many times you keep a book open with your eyes fixed on it. But you don't read a single word. This is because the control unit of your brain was not allowing your eyes to give any input at that time. Possibly control unit of your brain was processing something else. Control Unit synchronizes operations of the CPU for ensuring correct execution of programs. Control Unit has a special register called the program counter, which contains the address of the next instruction to be fetched from the primary memory. In order to sequence the instructions, the control unit goes through the following

sequence of steps:

o Retrieve the instruction from the processor memory addressed by the

program counter.

o Increment the program counter

o Determine what action is being requested by the instruction.

o Retrieve the appropriate data from the processor memory.

o Direct the CPU components to perform the operations indicated by the

instruction.

o Determine if the operation was carried out properly, if not, flag the error

message to the user, through the output device.

o Else, store the result in the CPU memory, for further processing.

o Determine the location of the next instruction to be retrieved.

MEMORY UNITS:

Primary storage section, also called as main memory, is that portion of the computer where data and instructions get stored when a program is being executed. The main memory is used to:

o Hold data received from input devices and keep them ready for processing.

o Hold data being processed, and intermediate results being generated therein.

o Hold the finished results of processing until released to the output devices.

o Hold the system software and application software in use.

Main Memory is broadly classified into two types:

o Random Access Memory (RAM)

o Read Only Memory (ROM)

Random Access Memory (RAM):

The memory where both reading and writing can take place is called Random Access Memory (RAM). By Technology RAM may be of two types:

o Static RAM

o Dynamic RAM

Static RAM: Static RAM elements, once set to their values, do not lose them if the

power supply does not go off. Once some value is stored, it will remain in the main

memory till the power is on. These elements are costly and have a fast access.

Dynamic RAM: In dynamic RAM the memory elements have less retention period and loose its value unless it is refreshed. Refreshing is a process where the RAM is read and rewritten. This kind of RAM requires extra circuits for refreshing. These are relatively slow but less costly compared to the Static RAMs. This kind of memory is therefore, used in mass scale. Both of these are volatile i.e., the moment power goes off all contents of RAM are lost.

Read Only Memory (ROM):

There are portions in the computer memory where no writing is allowed. The contents are pre-written and can only be read. Such memories are called Read Only Memory (ROM). It is used for micro programs not available to normal programmers.

The term read only means that the storage cannot be altered by regular program instructions. The information from the memory may be read out but fresh information cannot be written into it. The micro programs in Read Only Memory (ROM) may be used for a variety of purposes, but a common use is to hold a set of instructions that are needed frequently, for executing small, extremely basic operations, which are not otherwise available in computer circuitry.

ROM can be classified technologically into 2 types:

o Programmable ROM

o Erasable Programmable ROM

Programmable ROM or PROM:

Are those in which the user can insert the contents of choice only once? Once the PROM is written, it can only be read and never be re-written. Erasable Programmable ROM or EPROM:

As the name suggests, it can be written many times by a special process. These are very useful for design and development.

PERIPHERAL DEVICES ATTACHED TO COMPUTERS:

There are quite a few peripheral devices connected to a computer and controlled by the CPU. There is several input and output devices, which are connected to CPU and are, controlled by the CPU. These are:

o Input Devices, and

o Output Devices

INPUT DEVICES:

The input devices are used to input data and instruction. Data and instructions must be entered into the memory of the computer to perform computations. Input devices carry out this task. Data read by input devices are of different forms, depending upon the form of input entity.

Function of Input Devices:

o Accept the data from outside world.

o Convert the data into the corresponding ASCII code or binary form.

o Send data in binary form to the computer for further processing.

Input Devices include the following:

o Keyboard

o Pointing Device

o Mouse

o Joystick and Tracker Ball

o Scanner

Keyboard: A keyboard is the most common input device. It is used to input data manually by typing. The computer keyboard is like a typewriter keyboard with some extra special keys called function keys and controls keys, which can be programmed by the user according to his needs. This means that if you write a program, you might tell the computer to perform a specific action when a function/ control key is pressed.

The keyboard is connected with the main system through cable. When a key is pressed or released, unique scan code is sent from the keyboard electronics to the system. The keyboard interface electronics generates the corresponding ASCII code for the key depressed.

Mouse: Mouse is basically a pointing device. This is also an input device, but instead of sending characters, it sends the coordinates of the point on the screen on which the associated cursor is placed. A cursor is specially illuminated character on screen, which shows the place of selection for data entry or menu selection or a similar kind of thing.

The mouse is placed on a flat surface and is moved by the user on this surface. It has a roller underneath, which when moved, sends signals to the interface electronics to move the cursor the same

way as the mouse is moved. There may be two or three buttons on the mouse. By pressing a button, the user can point the selection to the system. The right mouse button is normally used for displaying and selecting pop-up menus.

The mouse may be used to draw diagrams on the screen, to select one from a group of choices, or to place the cursor at any specific point on the screen. It cannot be used to enter data, the way it can be done using a keyboard. A mouse is a must in a graphical user interface, namely Windows. A mouse is must in these days as it speeds up the navigation in Graphical User Interface (GUI) packages and most packages today are GUI based.

Joystick and Tracker Ball: Both of these are pointing devices and are used for the same purpose as a mouse. In joystick, a stick can be moved right, left, forward or backward. The electronics in the joystick measures the movement of the stick from its central position and sends the information for processing. The joystick is normally used for gaming programs. The tracker ball has a ball that can be rotated by hand in any direction. The cursor moves accordingly. It is normally used in medical computers like brain and body scanners etc.

Scanner: The scanner captures the entire information of an image directly from the source and stores it in graphic format for displaying back on the screen. A scanner first illuminates the page into an optical image, which is then converted into a digital format, for storage by the computer. The graphic image can then be processed using suitable software. For example: if an image is stored as bitmap (BMP) file, it can be

modified using MS-paint.

OUTPUT DEVICES:

The job of an output device is to bring out the result of computation to the outside World. As you know result in the computer is in the form of Binary. So, the binary values are converted to human acceptable forms, with the help of output devices. The following functions may be attributed to the output device:

o Accept data in binary form from the computer, which are normally not

understandable by the human beings.

o Convert coded data to human acceptable form.

o Output the converted result to the outside World.

Some of the commonly used output devices are

o Video Display Unit

o Printer

o Plotter

Video Display Unit /Visual Display Unit: You must, have noticed a TV-like screen connected to the computer. This is called Video or Visual Display Unit (VDU) or

Monitor. It works on similar principles as a TV and displays graphics and characters on its screen. The screen consists of several tiny points called picture points or pixels, which can be illuminated by highly focused electron beam. Output on screen is called soft copy.

Printers: Printers are popular output devices. The output information is in a permanent readable form and is called the hard copy. Printers may be classified as:

o Character Printers

o Line Printers

o Page Printers

A character Printer prints one character at a time. E.g.: Dot Matrix Printer. Line Printer would print one line of text at a time. E.g.: Chain or Drum Printer. A Page Printer would print a complete page at a time. E.g.: Laser Printer.

Printers are also classified as:

o Impact Printers

o Non-Impact Printers

Impact Printers use electromechanical mechanism to cause hammers or pin stud, to strike against a ribbon and paper arrangement. Dot Matrix, Chain, Drum Printer are examples of Impact Printers. The Non-Impact Printers do not have any mechanism to strike. It uses the chemical, thermal, electrostatic,

laser beam or inkjet technology for printing. Non-impact types are normally faster than the impact printers.

Plotters: These are output devices and are used to produce high-resolution graphics and drawings by computers. The plotters use ink pen to draw. Colour pens are also utilized.

HARDWARE:

The devices, which are tangible, are called hardware devices. These include CPU (Central Processing Unit), Keyboard, Mouse, and VDU, etc.

SOFTWARE:

These are those components, which are non-tangible. Software can be classified into following categories:

o System Software

o Application Software

o Utilities

System Software: It is collection of programs designed to operate, control and extend the processing capability of the computer system itself. System software consists of low-level language that interacts with the computer at a very basic level. System software comes along with the computer system. These programs are used for starting the computer, controlling and managing its resources, converting high level language to machine level language or for some specific purpose. A system software can be classified into:

o Operating System (Unix, MS-DOS, Windows 95/98/NT)

o Translator (C, Cobol, Fortran)

o System utilities (Virus scanning and cleaning software)

Application Software: Application software is software, which has been developed to computerize an activity. We can say application software sits on the top of the system software because it is unable to run without operating system and system utilities.

Application software can be developed using a computer language. Generally, these are developed in high-level languages such as COBOL, C and VISUAL TOOLS etc. Examples include: Financial accounting, Payroll Accounting and Banking etc.

Utilities Programmes: Utilities are programs, which perform a specific function. Often utilities are part of system programmes. These are generally provided by the computer manufacturer and also available for call up by operating system. These programs help the user to do common jobs, like, copying a file, comparing a file etc.

2.3 SUMMARY

o Computers are intelligent machines. We give relevant instructions to a computer, and a computer will do what it is instructed to do. A computer helps us generate data. Computers process data. Also, computers help in storage, retrieval and transmission of data. Computers are classified according to size, make, processing power, etc.

o Computers are very efficient and powerful tool that perform a wide variety of functions. A wide variety of computers are available in the market. These computers perform different functions. There are big computers. There are small computers. The most powerful computer is the supercomputer. Then there are mainframe computers. There are minicomputers also. Earlier there were analogue computers. The computers we have these days are digital

computers.

o A digital computer can count and accept numbers and letters through various input devices. The input devices convert the data into electronic pulses and perform arithmetic operations on numbers in discrete form.

o One of the main advantages in the use of digital computer is that any desired level of accuracy can be achieved. The main disadvantage is their higher cost.

o Analog computers process data input in a continuous form. Data are represented in the computer as a continuous, unbroken flow of information, as in engineering and scientific applications. The main disadvantages of an analog computer are the accuracy factor and limited storage capacity. Hence it is not suitable for processing business data.

o Computer can also be built using some parts employing digital computations and some parts based on analog principles. Such computers are called hybrid computers.

o These are largest and fastest computers available. Super Computers are typically not used for commercial data processing. Instead they are used in specialized areas such as in defense, aircraft design, computer generated movies, weather research etc.

o Mainframe computers are less powerful and cheaper than Super Computers. However, they are very large in size. These are general-purpose computers capable of handling all types of scientific and business applications.

o Minicomputers perform data processing activities in the same way as the mainframe computers but on a smaller scale. The costs of Minicomputers are lower. A Minicomputer is smaller than that of Mainframe computers.

o Micro Computers are the smallest category of computers, consisting of a microprocessor and associated storage and input/output devices. These are also called as Personal Computer Systems.

2.4 KEY WORDS

Computers: Computers are intelligent machines. We give relevant instructions to a

computer, and a computer will do what it is instructed to do. A computer helps us generate data. It has the capacity to store vast amounts of data within a small sized hard disk. Computers process data. Also, computers help in retrieval and transmission of data. Computers are classified according to size, make, processing

power, etc.

Classification of Computers: On the basis of computations computer can be classified in to three types as follows: digital computers, analog computers, and hybrid computers.

Digital Computers: A digital computer can count and accept numbers and letters through various input devices. The input devices convert the data into electronic pulses and perform arithmetic operations on numbers in discrete form. In addition to performing arithmetic operations, they are also capable of: storing data for processing, performing logical operations, and editing and deleting the input data.

One of the main advantages in the use of digital computer is that any desired level of accuracy can be achieved. The main disadvantage is their higher cost.

Analog Computers: Analog computers process data input in a continuous form. Data are represented in the computer as a continuous, unbroken flow of information, as in engineering and scientific applications. The main disadvantages of an analog computer are the accuracy factor and limited storage capacity. Hence it is not suitable for processing business data.

Hybrid Computers: Computer can also be built using some parts employing digital

computations and some parts based on analog principles. Such computers are called hybrid computers.

Super Computers: These are largest and fastest computers available. Super Computers are typically not used for commercial data processing. Super Computers

can process 64 bits or more at a time. Their processing speed ranges from 10,000 million instructions per second (MIPS) to 1.2 billion instructions per sec. They can support 10,000 terminals at a time. They have huge numbers of storage and other devices connected to them.

Mainframe Computers: Mainframe computers are less powerful and cheaper than

Super Computers. However, they are very large in size. These are general-purpose computers capable of handling all types of scientific and business applications. Mainframe computers can process several million instructions per second. A

Mainframe computer can handle more than 1,000 remote terminals. Mainframe

computers have vast on-line secondary storage capacity.

Minicomputers: Mini computers perform data processing activities in the same way as the mainframe computers but on a smaller scale. The costs of Minicomputers are lower. A Minicomputer is smaller than that of Mainframe computers. A minicomputer can support 10 to 12 terminals. The most popular minicomputers are Nova, Dec, PDP_II and IBM series of computers.

Micro Computers: These are the smallest category of computers, consisting of a

microprocessor and associated storage and input/output devices. These are also called as Personal Computer Systems. Microcomputers were first available in 1970's, when it became possible to put the entire circuitry of computer into a small

silicon chip.

2.5 SELF-ASSESSMENT QUESTIONS (SAQs)

1. Discuss the various bases on which computers are classified.

2. Discuss how computers are classified in the basis of computational methods.

3. Discuss how computers are classified in the basis of size and computing

capacities.

4. Write a detailed note on the various components of computers.

2.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	**GENERATIONS OF COMPUTER**
LESSON NO.: 3	

LESSON STRUCTURE

3.0 OBJECTIVES

The computer is a major component of Information Technology. Computer's influence every aspect of life today from small businesses or even satellite launchings. Computers are playing very important functions. So, it is important that we become familiar with the various aspects of computers. In this lesson we shall try to cover some introductory aspects of computers.

The objectives of this lesson are:

o To Know About the Components of Computers

o To Understand the Evolution of Computers

o To Know About the various Generations of Computers

3.1 INTRODUCTION

A computer is basically an intelligent machine. When given proper instructions a computer can understand what to do with given data and process this data and give

accurate result. A computer helps generate data. It can store large amount of data within a small sized hard disk. It can process data. In addition, a computer helps in retrieval and transmission of data also.

The most powerful computer is called supercomputer today, but it does not even have 10% capacity of thinking compared to human beings. It means human mind is more powerful than 10 supercomputers together.

The difference between computers and human mind is that the computer cannot think rationally. Human mind can think without any boundaries. But a computer can do only what it has been instructed to do. The computer can perform a job that is tedious and mundane without errors, but the brain behind the computer is that of a human. As the popular saying goes, the computer is a GIGO (Garbage In garbage Out) machine. If you feed the computer with the garbage you can onlyexpect the garbage out of it. The human mind can make sense out of nonsense, but the computer can make sense out of sense only.

COMPUTER DEFINED:

The modern computer can be defined as:

An electronic machine that is designed to accept data and instructions, store

the data and instructions, process the data according to instructions to

produce or store desired results.

1.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Components of Computers

o Evolution of Computers

o Generations of Computers

3.2.1 COMPONENTS OF COMPUTERS

A computer performs various functions with the help of the following devices:

INPUT DEVICES:

The input of human brain is through organs like eyes, ears or nose. Similarly, input to the computer is through certain devices like keyboard, mouse, scanner and light pen.

These devices, which are used to input data and instructions, are called input devices.

Function of Input Devices: The input devices help us to communicate with computer by converting human understandable signals and numbers into appropriate electric signals.

Examples of Input devices: Keyboard, Mouse, Light pen, Optical Character Reader

(OCR), Magnetic Ink Character Reader (MICR), etc.

OUTPUT DEVICES:

Human beings communicate with each other by talking, writing or drawing, etc. A computer communicates through devices like monitor (VDU – Visual Display Unit) and printer. These devices, which are used for communication of data and information from machine to man, are called output devices.

Function of Output Devices: The output devices help the computer to communicate with us by converting electric signals to human understandable signals.

Examples of Output devices: VDU – Visual Display Unit, Printer, Plotter. The output on VDU is called soft copy output whereas output on paper, which is produced by printers and plotters are referred to as hard copy output.

CPU (CENTRAL PROCESSING UNIT):

Now, the human brain has two parts. One, which controls all our actions, and the other which stores all the things that are to be remembered. The control center of the brain controls our memory capacity. Similarly, the control unit of the computer controls the data and instructions, which are to be stored or

retrieved from its memory unit. The human brain also has a logical slot wherein all mental calculations are done. Similarly, a computer has an Arithmetic Logic Unit (ALU), which does all the calculations and logical functions.

Central Processing Unit (CPU) has three parts named as control unit, arithmetic logical unit and memory unit. Control unit tells to ALU what type of action is to be taken on given data or instructions. As well as it controls the data and instructions to be stored in memory part and what is to be retrieved from it.

The memory unit of computer is further divided into Random Access Memory (RAM), Read Only Memory (ROM) and Cache Memory. Random Access Memory (RAM) is used to store the data and instructions that are currently being processed.

This memory can be randomly accessed and is also called as Immediate Access Memory. The RAM is volatile, i.e. the memory is erased when the power supply is cut off. As the name reflects ROM is Read Only Memory and it is written on the time of manufacturing of computer. The various types of ROM are EROM, PROM and EPROM, etc.

FUNCTIONS OF CPU: Following are the functions of central processing unit:

o To store data and instructions

o To control the sequence of operations

o To carry out data processing and show results

The CPU fetches the instructions from the memory, decodes the instruction and executes the instructions by communicating with the input/output devices and the memory units.

3.2.2 EVOLUTION OF COMPUTERS

The computer we use today is the result of man's long search for a device to help in performing computations. The search dates back to the 17th century. A series of scientific breakthroughs by many persons have contributed to produce this electronic machine called computer.

The word computer is derived from the word "compute", which means, "to calculate". If we look back to the history of the computers, it can be traced back to 3000 B.C. the Stone Age man used small round

stones for counting cattle. Later, the Chinese developed a device called Abacus. This is supposed to be the first mechanical computing device.

In 1617, John Napier, a Scottish mathematician developed a device called Napier's bones. With the help of this device, multiplication and addition were possible.

In 1642, Blaise Pascal, a French mathematician invented the first mechanical calculator.

In 1673, Gottfried Wilhelm Leibniz, a German invented the Leibniz calculator which was used for addition, subtraction and multiplication.

A French weaver's son named Joseph Marie Jacquard made the next significant contribution in 1804. After observing his father making different weaving patterns on the loom, he thought of storing these patterns for future use. So, he developed a plate with multiple holes to control the weaving patterns, not knowing that one day his idea of storing the weaving patterns would be used to store data and would be called the Punch card.

A Punch Card is a thin rectangular card divided into 80 columns and 12 rows in which the various characters could be represented by punching holes in different rows and columns. On one card it is possible to punch 80 characters – one character per column, thus it is possible to store 80 characters of data.

Around 1822, Charles Babbage a professor of Mathematics at the Cambridge University devised an automatic calculating machine called Difference Engine. The next significant invention came from Dr. Herman Hollerith, an American. Hollerith built a computer to analyze the Census data of the United States of America in 1890. This computer was electro-mechanical and was named the Census machine or Hollerith Statistical Tabulator.

Using this machine Hollerith announced the results of the Census in 2 ½ years as compared to 7 ½ years when the processing was done manually. Herman

Hollerith founded a company named "The Computing Tabulating recording Company" which today is the IBM Corporation.

Howard Aiken built the first fully electromechanical computer named MARK-1.

In 1945, John Von Neumann, a Frenchman working in IBM, made a significant contribution. He designed the basic structure of the computer to include the capacity to:

(i) Perform logic functions.

(ii) Perform repetitive functions.

(iii) Store data and instructions.

In 1945, the fully electronic computer named ENIAC was built by Presper Eckert and John W Mauchly. ENIAC stands for Electronic Numerical Integrator and calculator.

The computer has built-in LOGIC, the capacity to make a selection. Logic means some rational thinking, like, 2 is bigger than 1. The computer is capable of

REITERATION or REPETITION. The data and instruction can be stored and retrieved using the computer.

3.2.3 GENERATIONS OF COMPUTERS

Now, in order to have these three features i.e. to perform logical functions, perform repetitive functions and store data and instructions in a computer, certain components were made use of, which made a lot of difference in the capacity of the computer. So, depending on the Technology in use the computers are said to belong to different generations.

FIRST GENERATION COMPUTERS (1945-1955):

In first generation computers the main component in the use was the vacuum tubes (like those in the old radios, which warmed up after a minute or so, and glowed red). The vacuum tubes were also called as valves. The first computer used 17000 vacuum tubes, weighed 30 tons and occupied an area of a big hall. Vacuum tubes took ages to warm up and consumed massive amounts of electricity. Some of the computers of this generation are ENIAC, UNIVAC-1.

Advantages:

1. Vacuum tube technology made possible the advent of electronic digital computers.

2. These computers were the fastest calculating devices of their time. They could perform computations in milliseconds.

Disadvantages:

1. Too bulky in size

2. Unreliable

3. Thousands of vacuum tubes that were used emitted large amount of heat and burnt out frequently

4. Air conditioning required

5. Prone to frequent hardware failures

6. Constant maintenance required

7. Non-portable

8. Manual assembly of individual components into functioning unit required

9. Commercial production was difficult and costly

10. Limited commercial use

SECOND GENERATION COMPUTERS (1955 - 1965):

The real breakthrough in computers started with the discovery of the transistor.

Transistor is a tiny semi – conductor device, the size is about 1/50th of a vacuum tube, which can perform the same function as that of a large vacuum tube. Transistors replaced valves in computers. Some of the computers of this generation are: IBM 7000 SERIES, IBM 1620, IBM 1401.

Advantages:

1. Smaller in size as compared to I Generation Computers.

2. More reliable

3. Less heat generated

4. These computers were able to reduce computational time from milliseconds to

microseconds

5. Less prone to hardware failures

6. Better portability

7. Wider commercial use

Disadvantages:

1. Air-conditioning required

2. Frequent maintenance required

3. Manual assembly of individual components into functioning unit was required

4. Commercial production was difficult and costly

THIRD GENERATION COMPUTERS (1965 -1970):

As the next step, functions of several transistors were put together on a single chip (wafer) of silicon. These chips are called Integrated circuit (IC) chips. A small chip, the size of a fingernail could have equivalent of 200 to 2000 transistors. The chip is a small silicon wafer with very minute transistors, which can do logical comparisons and calculations. Some chips have been developed for the purpose of data storage. These constitute the memory chips. The use of chip technology reduced the size of computers. Some of the computers of these generations are:

IBM 360, IBM 370.

Advantages:

1. Smaller in size as compared to previous generation computers

2. Even more reliable than second-generation computers.

3. Even lower heat generated than second generation computers

4. These computers were able to reduce computational time from microseconds

to nanoseconds.

5. Maintenance cost is low because hardware failures are rare

6. Easily portable

7. Totally general purpose. Widely used for various commercial applications all

over the world

8. Less power requirement than previous generation computers

9. Manual assembly of individual components into functioning unit was not

required

10. Commercial production was easier and cheaper

Disadvantages:

1. Air-conditioning required in many cases

2. Highly sophisticated technology required for the manufacturing of IC chips.

FOURTH GENERATION COMPUTERS (1970 ONWARDS):

From 1970 onwards we are in the era of IV generation computers, in which the electronic component was further miniaturized through Large Scale Integration (LSI) of circuits on the silicon chip. Now the advancement of chip technology has come to be known as Very Large-Scale Integration (VLSI), where millions of transistors are packed in a single chip. The VLSI chips are refined every day. The size of the chip is shrinking and the components, which are packed in a chip, are multiplying. As a result, the size of a computer is decreasing day by day. What used to be a room sized computer at one time is now available as desktop computer or Laptop

computer or palmtop computer with much more computational power.

Advantages:

o Smallest in size because of high component density

o Very reliable

o Heat generated is negligible

o No Air- conditioning required in most cases

o Much faster in computation than previous generations

o Hardware failure is negligible and hence minimum maintenance required

o Easily portable because of its small size

o Totally general purpose

o Minimal labor and cost involved at assembly stage

o Cheapest among all generations

Disadvantages:

o Highly sophisticated technology required for the manufacturing of VLSI chips.

FIFTH GENERATION COMPUTERS:

From 1982 onwards research is on to develop a fifth generation computer that will

have the thinking power just like that of human brain. These computers, which are based on Artificial Intelligence (AI), are designed to be "Thinking" computers capable of storing large amount of data to be retrieved as and when required to solve a problem.

3.3 SUMMARY

o A computer is a machine endowed with intelligence. It understands instructions and performs a variety of functions. A computer helps generate data. It can store large amount of data within a small sized hard disk. It can process data. In addition, a computer helps in retrieval and transmission of data also.

o The human mind can think without any boundaries while a computer can do only what it has been instructed to do. The computer can perform a job that is tedious and mundane without errors, but the brain behind the computer is that of a human. The human mind can make sense out of nonsense, but the computer can make sense out of sense only.

o The devices in computers, which are used to input data and instructions, are called input devices. The input devices help us to communicate with computer by converting human understandable signals and numbers into appropriate electric signals. Examples of Input devices are: Keyboard, Mouse, Light pen, Optical

Character Reader (OCR), Magnetic Ink Character Reader (MICR), etc.

o A computer communicates through devices like monitor (VDU – Visual Display Unit) and printer. These devices, which are used for communication of data and information from machine to man, are called output devices. The output devices help the computer to communicate with us by converting electric signals to human understandable signals. Examples of Output devices are VDU – Visual Display Unit, Printer, Plotter. The output on VDU is called soft copy output whereas output on paper, which is produced by printers and plotters are referred to as hard copy output.

o the control unit of the computer controls the data and instructions, which are to be stored or retrieved from its memory unit. Computer have an Arithmetic Logic Unit (ALU), which does all the calculations and logical functions.

o A Central Processing Unit (CPU) has three parts named as control unit, arithmetic logical unit and memory unit. Control unit tells to ALU what type of action is to be taken on given data or instructions. As well as it controls the data and instructions to be stored in memory part and what is to be retrieved from it.

o The memory unit of computer is further divided into Random Access Memory

(RAM), Read Only Memory (ROM) and Cache Memory. Random Access Memory

(RAM) is used to store the data and instructions that are currently being processed. This memory can be randomly accessed and is also called as Immediate Access Memory. ROM is Read Only Memory and it is written on the time of manufacturing of computer. The various types of ROM are EROM, PROM and EPROM, etc.

o The first generation computers used vacuum tubes as the main component. The first computer used 17000 vacuum tubes, weighed 30 tons and occupied an area of a big hall. Vacuum tubes took ages to warm up and consumed massive amounts of electricity. Some of the computers of this generation are ENIAC, UNIVAC-1.

o Second generation computers used transistors - tiny semiconductor devices,

which could perform the same function as that of a large vacuum tube. Some of the computers of this generation are IBM 7000 SERIES, IBM 1620, IBM 1401.

o These computers used silicon chips, called Integrated circuit (IC) chips. A small chip, the size of a fingernail could have equivalent of 200 to 2000 transistors. The

chip is a small silicon wafer with very minute transistors, which can do logical comparisons and calculations. Some of the computers of these generations are IBM 360, IBM 370.

o The fourth generation computers have highly miniaturized electronic component

on silicon chips. Now through advancements in chip technology known as Very large-Scale Integration (VLSI), millions of transistors are packed in a single chip. The VLSI chips are refined every day. As a result, the size of a computer is decreasing day by day. What used to be a room sized computer at one time is now available as deskTop computer or Laptop computer or palmtop computer with much more computational power.

o The fifth generation computers will have the thinking power just like that of human brain. These computers are based on Artificial Intelligence (AI). These are

designed to be "thinking computers".

3.4 KEY WORDS

Computers: A computer is basically an intelligent machine. When given proper instructions a computer can understand what to do with given data and process this data and give accurate result. A computer helps generate data. It can store large amount of data within a small sized hard disk. It can process data. In addition, a computer helps in retrieval and transmission of data also.

Computer Defined: A computer is an electronic machine designed to accept data and instructions, store the data and instructions, process the data according to instructions to produce or store desired results.

Input Devices: The input of human brain is through organs like eyes, ears or nose. Similarly, input to the computer is through certain devices like Keyboard, Mouse, Light pen, Optical Character Reader (OCR), Magnetic Ink Character Reader (MICR), etc. The input devices help us to communicate with computer by converting human understandable signals and numbers into appropriate electric signals.

Output Devices: Human beings communicate with each other by talking, writing or drawing, etc. A computer communicates through devices like monitor (VDU – Visual Display Unit) and printer. These devices, which are used for communication of data

and information from machine to man, are called output devices. The output devices help the computer to communicate with us by converting electric signals to human understandable signals.

Central Processing Unit: The Central Processing Unit (CPU) of a computer controls

the data and instructions, which are to be stored or retrieved from its memory unit.

The Central Processing Unit (CPU) has three parts named as control unit, arithmetic

logical unit and memory unit. Control unit tells to ALU what type of action is to be

taken on given data or instructions. As well as it controls the data and instructions to be stored in memory part and what is to be retrieved from it.

Memory Units: The memory unit of computer is further divided into Random Access

Memory (RAM), Read Only Memory (ROM) and Cache Memory. Random Access Memory (RAM) is used to store the data and instructions that are currently being processed. This memory can be randomly accessed and is also called as Immediate

Access Memory. ROM is Read Only Memory and the various types of ROM are

EROM, PROM and EPROM, etc.

First Generation Computers: In first generation computers, the main component in

the use was the vacuum. The first computer used 17000 vacuum tubes, weighed 30 tons and occupied an area of a big hall. Vacuum tubes took ages to warm up and consumed massive amounts of electricity. Some of the computers of this generation are ENIAC, UNIVAC-1.

Second Generation Computers: In second generation computers, the main component in the use was the transistor. Transistor is a tiny semi–conductor device, the size is about 1/50th of a vacuum tube, which can perform the same function as that of a large vacuum tube. Transistors replaced valves in computers. Some of the computers of this generation are IBM 7000 SERIES, IBM 1620, IBM 1401.

Third Generation Computers: These computers used silicon chips, called Integrated circuit (IC) chips. A small chip, the size of a fingernail could have equivalent of 200 to 2000 transistors. The chip is a small silicon wafer with very minute transistors, which can do logical comparisons and calculations. Some chips have been developed for the purpose of data storage. These constitute the memory chips. The use of chip technology reduced the size of computers. Some of the computers of these generations are IBM 360, IBM 370.

Fourth Generation Computers: The fourth-generation computers have highly

miniaturized electronic component on silicon chips. Now through advancements in chip technology known as Very Large-Scale Integration (VLSI), millions of transistors

are packed in a single chip. The VLSI chips are refined every day. As a result, the size of a computer is decreasing day by day. From room sized computers, now we have Desk Top Computers to LapTop Computers or PalmTop Computers with much more computational power.

Fifth Generation Computers: The fifth-generation computers will have the thinking power just like that of human brain. These computers are based on Artificial Intelligence (AI). These are designed to be "thinking computers".

3.5 SELF-ASSESSMENT QUESTIONS (SAQs)

1. What are the the various components of a computer? Discuss in detail.

2. Discuss the functions of the central processing unit in detail.

3. Write a detailed note on the history and evolution of computers.

4. Discuss in detail the major changes in the different generations of computers.

3.6 REFERENCES / SUGGESTED READING:

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau & James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	MS-WORD
LESSON NO.: 4	

LESSON STRUCTURE

4.0 OBJECTIVES

The objectives of this lesson are:

o To Get an Introduction to Word Processor

o To Get an Introduction to MS-Word

o To Understand how to Work with MS-Word

4.1 INTRODUCTION

Writers write. What writers write is then edited. Editing often involves correcting and improving write-ups grammatically, factually, and many related ways. The next step is composing the text. Proofreading follows it. All these steps form part of what is generally known as word processing.

In this lesson, we shall try to cover some aspects of MS-Word, a major word processing application package.

4.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Word Processing- An Introduction

o MS-Word-An Introduction

o Working With MS-Word

4.2.1 WORD PROCESSOR- AN INTRODUCTION

A Word Processor is an application or programme for manipulating text-based documents. A Word Processor is the electronic equivalent of paper, pen, typewriter, eraser, dictionary, and thesaurus. Word processors range from simple through to complex. But word processors make the tasks associated with editing documents (deleting, inserting, rewording, and so on) very easy. Depending on the programme and the equipment in use, word processors can

display documents in different modes. The display could be in the text mode, using highlighting, underlining, or colour to represent italics, boldfacing, and other such formatting. Or the display could be in the WYSIWYG mode, where formatting and a variety of fonts appear on the screen, as they will on the printed page. All word processors offer facilities for document formatting, such as font changes, page layout, paragraph indention, and the like. Many word processors can also check spelling, find synonyms, incorporate graphics created with another programme, correctly align mathematical formulas, create and print standard

letters, perform calculations, display documents in multiple on-screen windows, etc.

4.2.2 MS - WORD- AN INTRODUCTION

Microsoft Word (MS Word) is a word processor developed by Microsoft Corporation.

In this software the user can create, edit and print the documents according to one's requirements. Auto correct, spelling and grammar checking text formatting, mail merge, graphics, table etc. are some of the features of MS Word.

SYSTEM REQUIREMENTS:

o Any IBM compatible computer with 80486 or higher processor

o 1 Floppy Disk Drive 1.44 MB (3.5 inch)

o 1 Hard Disk Drive with minimum of 100 MB

o Operating system Windows XP or Windows 2000

o Minimum 16 MB RAM

o VGA Monitor

o Pointing device—Mouse or track ball

4.2.3 WORKING WITH MS-WORD:

To start Word, first boot the computer with Windows 95 and select, **Select**

Programs\Microsoft Word. Word opens an empty document after displaying the

logo.

ICONS ON THE MONITOR:

Title Bar: The first line at the top of the screen. It displays the active application and the name of the document. It can be used to move the Word window on the screen.

Minimize Button: It is used to minimize the Word window.

Restore Button: It is used to store the window to its previous size, if the window is maximized.

Maximize Button: It is used to maximize the window. It is on top right corner of **screen.**

Close Button: It is used to close (exit) MS-Word.

Menu Bar: It is displayed below the Title Bar. It contains the menu options.

Toolbar: A set of icons to perform different tasks and displayed as a set is called a toolbar. Standard toolbar and formatting toolbars are displayed at the top of the screen below the menu bar. In Word 97, drawing toolbar is displayed at the bottom of the screen.

Ruler Line: It displays the margins, indents; tap positions on a numbers scale.

Horizontal ruler line will be on the top and vertical ruler line is to the left of the screen.

View Bar: View Bar is displayed below the workspace containing 4 icons in it. It can be used to display the document in Normal View, Online Layout View, Page Layout View or Outline View.

Status Bar: The Status Bar is displayed at the bottom of MS-Word window (above the taskbar). It displays the information about the active document such as page number, section number, number of pages, insertion point position etc.

CREATING A DOCUMENT:

When MS Word is loaded, a blank window will be displayed with the name Document1. To create a document, start typing the text in the window.

TYPING TIPS:

1. While typing the text, when the right margin is encountered, the insertion point will automatically return to the next line. This feature is called **Word Wrap.**

Therefore, do not press Enter at the end of every line unless you require a

paragraph break.

2. To change the paragraphs, press **Enter**.

3. To start a new line without considering it as a new paragraph, press **Shift +**

Enter.

4. In case of mistakes, to delete backwards, press backspace. To delete the

character at the cursor (Insertion point) position, press **Delete** Key.

ADDITIONAL TYPING TIPS:

o The text can be typed or deleted at the position of insertion pointer.

o Therefore, to type a word in the middle of a sentence, to edit (delete or correct) a word, the insertion point must be moved to the word. Clicking on the left mouse button in appropriate position of the word can move the insertion pointer to that place.

o You can press appropriate keys in the keyboard to move the insertion pointer. The sequence is given in the following table.

KEY SEQUENCE INSERTION POINT MOVEMENT:

o Arrow Keys: Up, down, left or right by one line or one character.

o Page Up/Page Down: Up or down by one screen

o Ctrl right /Ctrl left: Right or left by one word

o Ctrl Up/ Ctrl Down key: Up or down by one paragraph

o Home Beginning of line

o End: End of line

o Ctrl Home: Beginning of document

o Ctrl End: End of document

o Ctrl Alt Page Up: Previous page

o Ctrl Alt Page Down: Next page

FILE OPERATIONS:

In this screen, file operations like opening a file, saving a file and creating a new file

are discussed.

Saving the File:

After typing the text it has to be saved for future use. To save the file, you can follow

any one of the following three methods.

o Select **File\Save**

o Press **Ctrl\S**

o Click on **Save** icon in the standard toolbar.

The **Save As** dialog will be displayed on your screen. Here you can type any name that you wish to give to your file and click on **Save.** If the file is to be saved in a different folder (directory), select the folder name after typing the file name and then click on **Save** The file will be saved with the extension.

Creating a New File:

To create a new file, save the current file and use any one of the following methods.

o Select **File\New** and Select Blank Document in General category and click on

OK.

o Press **Ctrl + N**

o Press on **New icon** In the standard toolbar. The screen will be cleared and a

new file will be created.

Opening A File:

To open the file, which is already created, use any one of the following four methods.

o Select **File\Open**

o Press **Ctrl + O**

o Click on **Open icon** in the standard toolbar.

o Click on the name at the end of the File menu, if the file name is visible there.

o **Closing a File**

o To close the open file, choose **File\Close**

EDITING TEXT:

The process of changing the appearance of the text, deleting a portion of the text, duplicating or moving a part of the text, is called editing. To make these changes you must first select the portion of text,

which needs the change. To select portion of the text is called a Block. When the text is blocked, it will be highlighted.

You will find below some of the methods to block or select a portion of the

text.

o **Click and Drag:** Click in the place from where the text is to be selected and

drag to the place at the end of selection and release the mouse button

o **Click and Shift + Click:** Click in the place from where the text is to be

selected and Shift + click in the place where the selection has to end

o **Double Click** on the word to block a word

o **Click** on the selection area (space at the left side of the screen — after the

ruler but before the text) of line to block a line

o **Ctrl + Click** anywhere on the sentence to block a sentence

o **Double Click** in the selection area of any line to block a paragraph

o **Ctrl + Click** in the selection area of any line to block entire document

o Keeping **Alt key** pressed, **click and drag** to lock the text column wise

FORMATTING TEXT:

The text-formatting feature includes — font, font size, bold, italic, underline, text colour, and background and text border.

To format the text, you have to block the text (select the text) and click on the appropriate icon in the formatting toolbar. For e.g. to change the font size, block the text to be formatted, click on the drop-down list box displayed after the font size and click on the desired font size number (8 to 72). If you want to remove boldface, underline from your document, block the text again and click on the appropriate icon in the formatting toolbar.

Text Color:

In Word 97, to color a portion of your text, or to highlight a portion of your text, first block the text and click on the arrow mark pointing downwards, in formatting toolbar and click on the desired color.

Text Border:

Text Border is used to put a border to the selected portion of the text **Microsoft**

Word. For example to put the text border, you can block the text and click on the Border list box and select the border.

Advanced Formatting:

The text advanced formatting features include — different types of underlines, subscript, superscript, spacing between characters and animation:

To use the advanced text formatting features,

o Block the text.

o Select **Format Font.** Font dialog will be displayed on the screen.

o Select the desired font type, font size, font style, type of underline (single, double, dashed, thick, dot, thick, dot dash, wave etc.), font effects (subscript,

superscript) etc. and click on OK.

Subscript: The text that is written below the original line is a subscript.

E.g., **H2O,** here is **2** is the subscript. To create a subscript, block the text, which is to be printed below the original line (in the above case **2**), select **Format Font**, select

Subscript check box and click on **OK.**

Superscript: The text that is written above the original line is called superscript. For example, **H3 + B3.** Here **3** is the superscript. To create a superscript, block the text, which is to be printed above the original line (in the above case **3**), select **Format**

Font, select **Superscript** check box and click on **OK.**

Adjusting spacing between characters:

The character Spacing tab of the Font dialog box provides options for changing the distance between characters (Normal, Expanded or condensed), the position of characters (Raised or Lowered) and Kerning (the precise amount of space between characters).

Scaling is used to specify the character size. But it is better to change the character size using formatting toolbar. Spacing is used to control the distance that appears between the characters. Word allows you to increase or reduce the gap between the characters. To increase the space between characters, block the text, select/ block the word Expanded and specify the measurement in points. Similarly, to reduce the space between characters, select/block the Word Condensed.

Positioning the characters:

By default, the characters are positioned normally (on the line). If the text is to be printed slightly above or below the line, use the features **Raised** and **Lowered** respectively. Here the text is Raised by 4pt.

Changing Case:

This feature is used to convert the text, which is already written in upper case, lower case, toggle case etc. To change the case, block the text, select **Format Change Case,** select the appropriate option and clik on **OK.**

Moving the Text:

Steps to move the text (generally the paragraphs)

o Block the text to be moved.

o Select **Edit\Cut** or (press **Ctrl + X**)

Copying Text:

Steps to copy or duplicate the text,

o Block the text to be copied.

o Select **Edit\Copy** (or press **Ctrl +C**)

o Click in a new place where the blocked text should be copied.

o Select **Edit\Paste** (or press **Ctrl +V**)

UNDO AND REDO:

o To undo the previous work select **Edit\Undo** or press **Ctrl + Z**

o To redo the previous action, select **Edit\Repeat** or press **Ctrl + Y**

PARAGRAPH OPTIONS:

In Word, a paragraph is text, graphics or other items that is followed by a paragraph mark. Paragraph mark is not displayed unless the **show/hide** icon in standard tool bar is selected. This paragraph mark is inserted every time the Enter key is pressed.

To make changes to a selected paragraph, use **Format Paragraph** option. From paragraph dialog you can align paragraphs, create line spacing, indent the paragraphs and specify line and page breaks.

Paragraph Alignment:

The text in the paragraph is by default Aligned, i.e. the text written will be properly adjusted in the left side. The text can be cantered, right aligned or justified.

To change the paragraph alignment:

o Click anywhere on the paragraph that has to be aligned

o Click on appropriate icon in the Formatting Toolbar

The available icons are:

o Center Icon To centre align selected paragraphs

o Align left icon To left align selected paragraphs

o Align right icon To right align selected paragraphs

o Justify icon To justify the paragraph at both left and right side

Line Spacing:

Line spacing is the amount of gap in between the lines in the paragraph.

The different line spacing available are; Single, 1.5 lines, Double, At Least, Exactly

and multiple.

To select the line spacing:

o Click on the paragraph that needs the change.

o Select **Format Paragraph**

o Select the desired line spacing from the Line Spacing drop-down box and click

on **OK.**

Paragraph Indents:

When you type a letter or circular and you would like to draw the attention of the reader to a particular paragraph, you may wish to keep some space to the left or to the right. Or you may just want the first line of the paragraph to start after some space. These extra spaces are called **Indents.**

There are four types of indents.

Left: Leaves a gap at the left side of a paragraph.

Right: Leaves a gap at the right side of a paragraph.

First Line: Leaves a gap at the beginning of first line of a paragraph.

Hanging: Leaves a gap at the left side of paragraph except for the first line in the

paragraph.

BORDERS AND SHADINGS:

You can specify the borders for paragraphs and pages. You can also specify

shading for paragraphs to emphasize the text.

Paragraph Borders:

o Paragraph borders are used to emphasize a particular portion of the text.

o Various borders can be applied to a single paragraph or a group of

paragraphs.

o Different styles of borders, like - thin or thick line, double or dotted line borders

can be applied in different colors. Shadow can also be selected for right side

or left side of the paragraph.

To apply borders to a paragraph:

1. Click on the paragraph,

2. Select **Format\Borders and Shading.**

3. In borders tab, from Setting select **Box, Shadow, 3-D or Custom.**

4. Select the line style of border.

5. Select the line color of border.

6. Select the width of line and click on OK.

This sentence is an example for single line border.

This line is an example for double line border with shadow.

Page Border:

You have seen in previous sessions that borders are applicable to paragraphs, the border can be set to pages also. In case of page border, the selected type of border will be applied to the full page.

Paragraph Shading:

Paragraph shading is also used to emphasize the text written in the paragraph. The shading can be done for one paragraph or selected paragraphs using different colours.

BULLETS AND NUMBERING:

This feature is used to create a bulleted or numbered list from a selected list of items by including some symbol or serial numbers to the left side of the text. The icons for bullets and numbering available in Formatting toolbar are:

To apply bullets and numbering:

o Block the text,

o Select **Format Bullets and Numbering**

o Select the style of bullet from bulleted tab or the type of numbers from

Numbered tab and click on **OK.**

To change the type of bullet symbol, click on any one bullet, click on **Customize...**

button, and click on **Bullet,** select the required symbol by choosing the appropriate font.

To remove bullets and numbering, block the text, select **Format Bullets and**

Numbering and select the bullet type **None** and click on **OK.**

TAB STOP:

Tabs are used to type the text in columns. MS Word has tab stops set to every 0.5 inch by default. These tab stops can be identified by the gray thick marks that appear at the bottom of the ruler. To type the text in different columns, tab stops can be set.

There are five types of tabs. They are left, center, right, decimal and bar (thin vertical bar will appear to separate the columns). The text that is typed will be aligned on the basis of the type of the tab set at that position.

To set the tab stops:

1. Select **Format Tabs** to open the tabs dialog box.

2. Type the tab stop position number in inches.

3. Select how the text must be aligned from the available alignments.

4. Select the type of leader, if required.

5. Click on Set.

6. Repeat the steps 2 to 5 to set other tab positions.

7. To remove a tab position, click on the tab stop number, which is already set

(appearing inside the box) and click on Clear. To clear the entire tab stops that are

set click on Clear All.

8. Click on OK to come out.

FIND, REPLACE, GO TO:

You can find a particular word or phrase in the document, replace some words,

which are already typed or go to a specific page, section, or line in the document. This is very useful when you want to change only certain names in a lengthy

document (e.g. a Lawyers notice, in which all the legal terms are the same but the names of the parties are different).

Find:

o Select **Edit\Find....** or press **Ctrl + F.** The following Find and Replace dialog

will be displayed.

To find a particular word or phrase in the entire document or selected text,

o Type the word to be found in **Find what** box.

o Select the options like **Match case** to have the search to be case sensitive,

i.e., exact combination of uppercase and lowercase letters specified in the find

what box.

o **Find the whole words only -** to find the words, which are not a part of other

words.

o **Use wildcards -** the use of? to represent a character or * to represent any

number of characters as wildcards in the text to be found.

o **Sounds like -** to find the word that sounds like the word entered but spelled

differently.

o **Find all words -** to search for the words in the entire document.

o Click on **Find Next** to find the text. To continue finding the same text, continue

to click on Find Next. To find another word, change the word in the find what

box. To come out of Find and Replace dialog, click on **Cancel.**

SPELLING AND GRAMMAR:

You can check the spelling of the words in the document and also check for possible grammar and style errors.

Spelling:

While typing the text, if any spelling mistake is made, a red wavy underline will be included for such words and if there is a suspected grammar mistake in the sentence, a green wavy underline will be included.

Change: Changes the wrongly spelt words with words present in change to box.

Change All: Changes every occurrence of a particular wrongly spelt word with the

word in the change to box.

Ignore: Ignores the word that is not correct but which the user wants to keep as it is.

(E.g. Name of a person will be showed as wrongly spelt word).

Add: Stores a specified word in the dictionary.

Auto Correct: Adds the wrongly spelt word and its correction to Auto Correct list so

that MS-Word will correct it automatically in future.

CANCEL (**or CLOSE**): Stops the spell checking.

AUTO TEXT:

The text entries, which are stored and can be inserted by a few shortcut keys, are

Auto Text entries. Frequently used words can be stored as Auto Text entries, like

Yours Sincerely, Yours Faithfully, and Thanking You, etc. You will find that it is an easy way to include the text into the document without typing it in full, i.e. the Auto

Text entry will be stored in some shortcut name. To store an Auto Text entry, type the text and block it, then select **Insert Auto**

Text New. A dialog will be displayed to enter a name to the Auto Text entry. Type a shortcut name to the text blocked (for example, AT for paragraph on Auto Text, YF for Yours faithfully) and click on **OK.** To insert the Auto Text into the document, type the shortcut name given and press the function key **F3**. Automatically, the shortcut name will be converted to the original text. Auto Text can also be inserted into the document by selecting **Insert Auto**

Text, click on the required shortcut name and click on **Insert.** To delete the Auto

Text entry, select **Insert Auto Text\Auto Text,** click on the Auto Text shortcut name to be deleted and click on **Delete.** To come out of the dialog, click on **Close.**

AUTO CORRECT:

Auto Correct is used to get the text that is required immediately after typing the shortcut name without having a need to press any other keys. It is a method to correct the text as the user types it. Common mistakes and its corrections will be stored as Auto Correct entries. E.g., on Typing MAHE it should automatically change

the text to GJU Academy of Higher Education. For example, if we type gJU, it must be changed to GJU. To create an Auto Correct entry, select **Tools\Auto Correct.**

Type the spelling of the word that we generally type e.g. GJU in **Replace** box. In

With box, type the correct spelling of the word and click on **Add** and click on **OK.**

Now onwards, if GJU is typed, it will automatically convert to Guru Jambheshwar

University. To delete the Auto Correct entry, select **Tools\Auto Correct,** click on the name of Auto Correct to be deleted and click on **Delete.**

WORD COUNT:

This feature of word allows you to count the number of pages, words, characters, paragraphs, and lines in the document. To count the words, lines, paragraphs etc., in the document, select **Tools\Word Count.** The result will be displayed in a dialog

box.

BREAKS:

There are three types of breaks available in MS-Word. They are, Page Break, Column Break, Section Breaks. To insert any one of the above breaks, select **Insert**

Break. The Break dialog will be displayed on the screen. Select the kind of break

required and clicks on **OK.**

Page Break inserts a page break at the cursor position and shifts the remaining text, to the next page. Manual page break can also be inserted by pressing **Ctrl+Enter.**

Column Break inserts a column break at the cursor position and shifts the remaining text if any, to the next column. It allows the user to type the text in next column by ending the current column.

Section Break is used to end the current section and to start a new section type changing the section number. It is generally used to apply different type of formatting to different types of the document. Section-breaks are of four types.

o **Next Page:** Inserts a section-break and breaks the page so that the next section starts at the beginning of next page.

o **Even Page:** Inserts a section-break and starts the next section on the next even numbered page. If the section break is included in an even numbered page, the next page (odd numbered page) will be blank.

o **Continuous:** Inserts a section-break and starts the next section immediately, without inserting a page break.

o **Odd Page:** Inserts a section-break and starts the next section on the next odd numbered page. If this section break is included in the odd numbered page, the next page (even numbered page) will be blank.

COLUMNS:

Columns are used to type the text in different columns. Text can be typed into the columns after defining the columns or the existing text can be converted into columns.

Typing the text by defining the columns

To type the text inside the columns by defining the columns,

1. Click on the place from where the text has to be in columns.

2. Select **Insert\Break\Continuous,** click on **OK.**

Select **Format Columns.** The columns dialog will be displayed.

o Specify the number of columns required (two, three etc.)

o Specify whether a separator line is required in between the columns. If

a line is needed between the paragraphs, select the check box **Line**

Between.

o By default, the width of each column will be equal. If you need to have columns with different widths, change the width and spacing between the columns after de-selecting **Equal Column Width** and click on **OK.**

o Type the text in the first column. When you have finished typing in the first column and want to go to the next column, **insert\Break\Column Break**. Type the text in the other columns.

o at the end of the last column, select **Insert\Break\Continuous.**

o to end the columns and start typing the text as regular paragraphs,

select **Format\Columns** and from Pre-sets, select the number of

columns as **One**.

TABLES:

A table is any information grouped together, arranged in rows and columns. A Table will have two or more columns and one or more rows. Each intersection of a row and a column is a cell of the table.

A Table can be useful for enhancing the presentation of data in your document; it can be used for creating side-by-side paragraphs, and for organizing information. Any data, especially numbers, is more presentable and easier to type in the tabulator form. Even though the text can be typed in different columns using the tabs, setting the tabs and typing the text by pressing the Tab key will be a slow and tricky process. The table feature of Word allows the user to create the table faster and also to type the text easily.

INSERTING OBJECTS:

You can insert date and time, symbol, pictures and word art.

Insert Date and Time:

o Date and Time is used to insert current date or time into the document.

o To insert date or time, click on the place where the system date or time is to

be inserted and select **Insert Date and Time.**

o Different date and time formats will be displayed. Click on the required format.

If the date or time inserted into the document must be modified each time the

file is opened, select the check box **Insert as Field** and click on **OK.**

o If the date inserted into the file has to be changed automatically, every time

the file is opened, select the check box **Update automatically.**

Insert Symbol:

Different symbols from different fonts or special characters can be inserted into the document by selecting **Insert Symbol.** Select the Font (generally Wingdings) Click on the desired symbol, click on **Insert** and click on **Close.**

To Insert a Special Character like Trade MarSdTM, Registered, Copyright etc., into

the document, click on the place where the special character to be inserted and select **Insert Symbol,** select the tab **Special Characters,** click on the desired character to be inserted into the file and click on **Close.**

Insert Picture:

A number of pictures are available in MS Word that can be inserted into any

document.

o To insert a picture into a Word Document:

o Click on the place, where the picture is to be inserted.

o Select **Insert Picture Clipart.**

o Select the required category and click on the required picture from the

selected category.

o Select **Insert** and click on **Close.**

HEADER AND FOOTER:

Header is the text that will be printed at the top of the page and footer is the text that will be printed at the bottom of the page, The header and footer can include text or graphics such as page numbers, date, the company logo, file name, authors name etc. To add a Header or Footer to a document, select **view Header and Footer.** A box will be displayed to type the header text along with the header and Footer tool bar displayed below the box. Any text can be typed inside the box directly. The text typed in the Header box will appear at the top of every page. If any special information is to be inserted, like-page number, date and time, file name etc. in the header or footer, click on appropriate icon in the toolbar. The icons in the

toolbar and insert Auto Text, Page number, Number of pages, Format Page Number, Insert Date, Insert Time, Page Setup, Show/Hide Document Text, Same as

Previous, Switch between Header and Footer, Show Previous, Show Next and Close.

To insert the page number, date, file name etc. in header or footer, select from the **Insert AutoText** list.

The page number, date, time, etc. can also be inserted into the file by clicking on appropriate icon in the header and Footer toolbar. The header or footer text can be written in 3 alignments, i.e. Left, Centered And Right. To change the alignment,

press Tab key.

By default, header text can be typed directly. To type the footer text, click on

Switch between header and footer icon from the toolbar. At the end, click on the close icon to return to document. Header/Footer cannot be seen in the normal view of the document. But it is visible in the page layout view and print preview.

FOOTNOTES AND END NOTES:

Footnote and Endnote is the reference note written at the end of the same page or at the end of the document. Footnotes will be printed at the end of same page and Endnote will be printed at the end of document. To type the footnote or endnote text, place the insertion point at the position, where the note mark has to appear and select **Insert\Footnote.** The following dialog will be displayed. Select whether Footnote or Endnote has to be written and the style of numbering. Instead of number, if any symbol is to be inserted in that place. Select **Symbol** and select the desired symbol by selecting appropriate font. To start typing the footnote or endnote text, click or **OK.**

If Footnote is selected the insertion point will appear at the bottom of the page by displaying the footnote number or symbol where the footnote text can be typed. (if Endnote is selected, insertion point will appear at the end of document.) To return to

the text click outside the footnote area.

VIEWS:

A document can be edited by displaying it in different ways on the screen called **views**. Word has six different views. The Normal View, Online Layout View, Page Layout View, Print Preview, Outline View, and Master Document. These different views (except Print Preview) can be selected from View Menu. **Normal View** is the default view in Word. It is an all-purpose view for typing, editing and formatting the text. Normal view shows text formatting but simple files the layout of the page so the typing and editing can be done faster. To return to Normal View from any other view, select **View Normal.**

It will be display side-by-side column positioning, footers, headers or the printing position of framed objects. Page breaks are shown as dotted lines. Manual page breaks are shown with dotted line containing the word Page break.

Online

Layout View optimizes the layout to make online reading easier. Text appears larger and wraps to fit the window. It will not display the text the way in which it is actually

printed. By default, online layout view includes a resizable navigation pane called Document Map, which shows the outline view of the document's structure. By clicking on outline topic of the document, the cursor can be moved to that part of the

document. Background pictures can be included only in the online layout view. To

switch to Online Layout view, select **View Online Layout.**

Page layout View displays the text and graphic objects, as it will appear when printed. This view is useful for editing headers and footers, for adjusting margins and working with columns, drawing objects, inserting pictures etc. Both horizontal and vertical margins will be displayed allowing the user to set the tabs and margins easily. To return to page layout View, Select **View Page Layout.**

Print Preview displays one or multiple pages of a document in a reduced size to display the document, as it will be on a printed page. One or more page will be displayed. This view is useful to check the layout of the document by displaying the header, footer, and margins and allows the user to edit or format before printing the document. To return to Print Preview, select **File Print Preview**

To return to document from Print Preview, select **close** from the tool bar displayed at the top of print preview window.

Outline View makes it easy to look at the structure of a document and to move, copy and reorganize text. In the outline view, there is a provision to collapse the document to see only the main headings or the document can be expanded to see the entire document. To return to Outline View, select **View Out line.**

Master Document view makes it easier to organize and maintain a long document, such as a book with chapters. Use master document view to group several word documents into one master document. After this, an index, table of contents or cross-reference can be included without opening each of the individual documents. To switch to Master Document view, select **View Master Document.**

4.3 SUMMARY

o A Word Processor is an application or programme for manipulating text-based documents. A Word Processor is the electronic equivalent of paper, pen, typewriter, eraser, dictionary, and thesaurus. Word

processors range from simple through to complex. But word processors make the tasks associated with editing documents (deleting, inserting, rewording, and so on) very easy.

o All word processors offer facilities for document formatting, such as font changes, page layout, paragraph indention, and the like.

o Many word processors can also check spelling, find synonyms, incorporate graphics created with another program, correctly align mathematical formulas, create and print standard letters, perform calculations, display documents in multiple on-screen windows, and enable users to record macros that simplify difficult or repetitive operations.

o Microsoft Word (MS Word) is a word processor developed by Microsoft Corporation. In this software the user can create, edit and print the documents according to one's requirements. Auto correct, spelling and grammar checking text formatting, mail merge, graphics, table etc. are some of the features of MS Word.

4.4 KEY WORDS

Word Processor: A Word Processor is an application or programme for manipulating text-based documents. A Word Processor is the electronic equivalent of paper, pen, typewriter, eraser, dictionary, and thesaurus. Word processors range from simple through to complex. But word processors make the tasks associated with editing documents (deleting, inserting, rewording, and so on) very easy.

Facilities in Word Processors: All word processors offer facilities for document formatting, such as font changes, page layout, paragraph indention, and the like. Many word processors can also check spelling, find synonyms, incorporate graphics created with another program, correctly align mathematical formulas, create and print standard letters, perform calculations, display documents in multiple on-screen windows, etc.

Microsoft Word: Microsoft Word (MS Word) is a word processor developed by Microsoft Corporation. In this software the user can create, edit and print the documents according to one's requirements. Auto correct, spelling and grammar checking text formatting, mail merge, graphics, table etc. are some of the features of MS Word.

4.5 SELF-ASSESSMENT QUESTIONS (SAQs)

10. Write a detailed note on word processing.

11. Write a detailed note on any word processing programme.

12. Write a detailed note on MS-Word.

13. What are the facilities available with MS-Word?

4.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	**MS-POWERPOINT**
LESSON NO.: 5	

LESSON STRUCTURE

5.0 OBJECTIVES

The objectives of this lesson are:

o To Know About the Components of Computers

o To Understand the Evolution of Computers

o To Know About the various Generations of Computers

5.1 INTRODUCTION

Multimedia is the combination of sound, graphics, animation, and video with traditional media such as text. In the world of computers, multimedia is a subset of hypermedia that combines the elements of multimedia with hypertext, which links the information.

A multimedia application is one that uses a collection of media sources. Some of the better-known examples of such applications are PowerPoint, the presentation package from Microsoft, and Acrobat, the document presentation product from Adobe Systems.

In this lesson, we shall discuss about PowerPoint, the presentation package from Microsoft.

5.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Components of Computers

o Evolution of Computers

o Generations of Computers

5.2.1 POWER POINT- AN INTRODUCTION

Microsoft PowerPoint is a presentation programme developed by Microsoft for its Microsoft Office system. Microsoft PowerPoint runs on Microsoft Windows and the Mac OS computer operating systems, although it originally ran under Xenix systems. It is widely used by businesspeople, educators, students, and trainers and is among the most prevalent forms of persuasion technology. Beginning with Microsoft Office 2003, Microsoft revised branding to emphasize PowerPoint's identity as a component within the Office suite: Microsoft began calling it Microsoft Office PowerPoint instead of merely Microsoft PowerPoint. The current version of Microsoft Office PowerPoint is Microsoft Office PowerPoint 2007. As a part of Microsoft Office, Microsoft Office PowerPoint has become the world's most widely used presentation programme.

Bob Gaskins and software developer Dennis Austin developed the original Microsoft Office PowerPoint as Presenter for Forethought, Inc, which they later renamed PowerPoint.

PowerPoint 1.0 was released in 1987 for the Apple Macintosh. It ran in black and white, generating text-and-graphics pages for overhead transparencies. A new full colour version of PowerPoint shipped a year later after the first colour Macintosh came to market. Microsoft Corporation purchased Forethought and its PowerPoint software product for $14 million on July 31, 1987. In 1990 the first Windows versions were produced. Since 1990, PowerPoint has been a standard part of the Microsoft Office suite of applications (except for the Basic Edition).

The 2002 version, part of the Microsoft Office XP Professional suite and also available as a stand-alone product, provided features such as comparing and merging changes in presentations, the ability to define animation paths for individual shapes, pyramid/radial/target and Venn diagrams, multiple slide masters, a "task pane" to view and select text and objects on the clipboard, password protection for presentations, automatic "photo album" generation, and the use of "smart tags" allowing people to quickly select the format of text copied into the presentation. Microsoft Office PowerPoint 2003 did not differ much from the 2002/XP version. It enhanced collaboration between co-workers and featured "Package for CD", which makes it easy to burn presentations with multimedia content and the viewer on CD-ROM for distribution. It also improved support for graphics and

multimedia. The current version, Microsoft Office PowerPoint 2007, released in November

2006, brought major changes of the user interface and enhanced graphic

capabilities.

5.2.2 POWER POINT OPERATIONS

In PowerPoint, as in most other presentation software, text, graphics, movies, and other objects are positioned on individual pages or "slides". The "slide" analogy is a reference to the slide projector, a device that has become somewhat obsolete due to the use of PowerPoint and other presentation software. Slides can be printed, or (more often) displayed on-screen and navigated through at the command of the presenter. Slides can also form the basis of webcasts.

PowerPoint provides many types of movements. Entrance, emphasis, and exit of elements on a slide itself are controlled by what PowerPoint calls Custom Animations. Transitions, on the other hand are movements between slides. These can be animated in a variety of ways. The overall design of a

presentation can be controlled with a master slide; and the overall structure, extending to the text on each slide, can be edited using a primitive outliner. Presentations can be saved and run in any of the file formats: the default .ppt (presentation), .pps (PowerPoint Show) or .pot (template). In PowerPoint 2007 the XML-based file formats. pptx, .ppsx and .potx

have been introduced.

5.2.3 CRITICISMS OF POWER POINT

One major source of criticism of PowerPoint comes from Yale professor of statistics and graphic design Edward Tufte, who criticizes many emergent properties of the software:

o It is used to guide and reassure a presenter, rather than to enlighten the audience;

o Unhelpfully simplistic tables and charts, resulting from the low resolution of computer displays;

o the outliner causing ideas to be arranged in an unnecessarily deep hierarchy, itself subverted by the need to restate the hierarchy on each slide;

o Enforcement of the audience's linear progression through that hierarchy (whereas with handouts, readers could browse and relate items at their leisure);

o Poor typography and chart layout, from presenters who are poor designers and who use poorly designed templates and default settings;

o Simplistic thinking, from ideas being squashed into bulleted lists, and stories with beginning, middle, and end being turned into a collection of disparate, loosely disguised points. This may present a kind of image of objectivity and neutrality that people associate with science, technology, and "bullet points".

o Tufte's criticism of the use of PowerPoint has extended to its use by NASA engineers in the events leading to the Columbia disaster. Tufte's analysis of a representative NASA PowerPoint slide is included in a full page sidebar entitled "Engineering by Viewgraphs" in Volume 1 of the Columbia Accident Investigation Board's report.

5.2.4 VERSIONS OF POWER POINT

Here are the major versions of Power Point presentation programme:

o 1987 PowerPoint 1.0 for Mac OS classic

o 1988 PowerPoint 2.0 for Mac OS classic

o 1992 PowerPoint 3.0 for Mac OS classic

o 1994 PowerPoint 4.0 for Mac OS classic

o 1998 PowerPoint 98 (8.0) for Mac OS classic (Office 1998 for mac)

o 2000 PowerPoint 2001 (9.0) for Mac OS X (Office 2001 for mac)

o 2002 PowerPoint v. X (10.0) for Mac OS X (Office:mac v. X)

o 2003 PowerPoint 2003 (version 11) — (Office 2003)

o 2004 PowerPoint 2004 (11.0) for Mac OS X (Office:mac 2004)

o 2006-2007 PowerPoint 2007 (version 12) — (Office 2007)

o 2008 PowerPoint 2008 (12.0) for Mac OS X (Office:mac 2008)

5.2.5 SLIDE LAYOUTS

One of the most important things in the Power Point presentation programme are the slide layouts.

Each presentation would have one or more than one slides. Each Power Point slide has a specific page layout associated to it. The page layout of a slide decides the position of various objects you can have in Power Point. It also specifies the default text attributes and style like the font face, font size, font color, font style, alignment etc., the line thickness, it's style, color etc. Power Point provides 24 different types of page layouts along with a blank

page layout. To have customized objects and object appearance use the blank page layout. Page layouts basically ease out the creation of slides with template for most commonly used object combinations. The defaults objects present in any of the 24 default page layouts provide by Power Point are called as "Click here" objects. At the start each such box would

have the explanation of what is the functionality of that box. All the user needs to do is position the mouse pointer on the object and click once. This automatically triggers off the corresponding operation.

Select Slide Layouts:

When you select to create a new presentation or select to add a new dialog box appears asking you to select the desired page layout from the available list, select the page layout and choose OK. Your first slide or the new slide would be inserted with the new page layout.

Change Slide Layout:

You can also change the page layout after you have completed the slide. This would be advantageous when you want to give specific slide backgrounds.

o Select Slide Layout from the Format Menu

o Select the desired page layout or select blank

5.2.6 GETTING MORE FAMILIAR WITH POWERPOINT

The text, organization chart, graph or the picture present on a Power Point slide is called an object. If you need to make any kind of changes you have to first select the object. Any operation performed is specific to the selection. Let us look at some of the terms and selection methods followed in PowerPoint the object or objects selected would get eight small squares around it.

Making Selections:

Selecting a Single Object: Take the mouse pointer to the specific object and click on the object.

Selecting Multiple Objects: Position the cursor on the object obtaining the text and click. Now, hold down the Shift key and position the mouse pointer on the second object and click, then release the Shift key, both the objects now remain select. To select more objects repeat the same procedure.

Selecting a Text Object: Position the cursor on the object containing the text and click once. Now the text object is selected. Clicking on it again will take you to the text entry mode or modify mode.

Selecting all the Objects: Choose **Select All** from the **Edit Menu**.

Increase or Decrease an Object Size:

The method to follow either to increase or decrease the size of the object is similar to the method used to increase or decrease the size of a window under your desktop.

o Select the object.

o Position the tip of the mouse pointer to touch the corresponding box to which you need to increase or decrease the size of the object.

o Hold down the left mouse button and drag the mouse to the left, right, top or

bottom.

o A ghost outline appears indicating the new size of the object.

o Decide upon the size and release the left mouse button.

Moving an Object:

o Select the object or objects to be moved.

o Position the mouse pointer within the object frame.

o Hold down the left mouse button and drag your mouse.

o A ghost outline appears indicating the new location of the object.

o Release the left mouse button to move the object to the selected location.

Deleting an Object:

o Select the object or objects.

o Press the Del key on the keyboard or Select clear from the Edit menu.

Change the Object Color:

o Select Toolbars from the View menu.

o Select Drawing.

To change the Area Color:

Select the new color for the area of the object by clicking on the Fill Color Tool.

To change the Line Color:

o Select Toolbars from the View menu.

o Select Drawing

To change the Area Color:

Select the new color for the area of the object by clicking on the Fill Color Tool.

To change the Line Color:

Select the new color for the area of the object by clicking on the Line Color Tool.

To change the Line Thickness:

Select the new color for the area of the object by clicking on the Line Thickness Tool.

EDITING A SLIDE:

By now, after using Windows and Word you are familiar with the Cut/Copy/Paste operation. The same can be performed in Power Point. Select the objects to be moved or copied, select the corresponding option or tool. You can also find a string to replace the same. Select Find from the Edit menu to search for a string:

o To replace a string with another string select **Replace** from the **Edit Menu** to

search for and replace the string.

o To store the previous state of an operation select **Undo** from the **Edit Menu**.

WORKING WITH SLIDES:

To Insert a New Slide:

o Select New Slide from the Insert Menu or click on the new slide tool in the standard toolbar.

o Select the Page layout.

To Duplicate a Slide:

o Duplicating a slide is possible only through the Slide sorter view.

o Select the slide to duplicate by clicking on the same. This selected slide will

be highlighted.

o Select **Duplicate** from the Edit Menu.

To Delete a Slide:

o Highlight the slide through Slide Sorter View.

o Select **Delete Slide** from the **Edit** Menu.

The slide background remains the same for the entire slide, if any of the 24 default page layouts of Power Point is used. If you desire individual backgrounds for slides then you would have to change each page layout to **Blank**. To do this:

o Select **Background** from the Format Menu.

o Select the color for the slide background.

o Select **Apply** to apply the background to the active or selected slide.

o Select **Apply to All** to apply the selected background to all the slides.

o Select **Fills Effects** from **Background** dialog box to change the effect and

pattern.

APPLYING TEMPLATES:

Use this selection to pick a slide design from a list of different sections:

o Selection **Format > Apply Design**

o Select any one of the templates on the left-hand side.

o Click on the apply button.

o All the slides/charts will be updated.

POWER POINT VIEWS:

Slide View:

The slide view is the default view used to create and edit your slides. In this view all the menus and toolbars are available.

Outline View:

The outline view is used to display the outline format of your slide show. The slide number and text contents are displayed in this view. Switching to outline view takes the data from your slides and redisplays it in the form of an outline. Any change you make to the presentation while in outline view is automatically reflected in the representation when you return to the slide view.

The following list highlights a few important points about outline view.

o The outline is made up of titles and body text of each slide.

o Any other objects you have added to a slide such as picture charts and so on are not included in outline.

o Also if you add any text object to the slide in addition basic title and body text objects are automatically included when you create a new slide, the additional text objects are not included in the outline.

o A high level heading in the outline the text of this heading is drawn from the slide's title represents each slide, and a button that represents the entire slide appears next to the headings.

o Also the slide number appears to the left of the slide button.

o Each text line from a slide's body text appears as an indented heading subordinates to the slide's main title heading.

o Power Point enables you to create as many as five heading levels on each heading slide.

Promoting and Demoting Paragraphs:

o To promote paragraphs means to move it up one level in outline.

o To promote a paragraph, place the cursor anywhere in the paragraph and then click on the promote button.

o To demote a paragraph is just the opposite the paragraph moves down on level in the outline. To demote a paragraph place the cursor anywhere in the paragraph and press the demote button.

If you demote a slide title, the entire slide is included into the preceding slide. In other words, the slide title becomes a main point in the preceding slide.

Moving Text Up and Down:

Outline view is also handy for rearranging your presentation. You can easily change the order of individual points on the slide, or you can rearrange the order of the

slides.

o To move the select text up

o To move the selected text down

Expanding and Collapse\point the Outline:

Power Point enables you to collapse outline so that only the slide titles are shown. Collapsing the outline doesn't delete the body text; it merely hides it so that you can focus on the order of the slides in your representation. Expanding a presentation restores the collapse body text to the outline so that you can once again focus on details.

o To collapse an entire presentation

o To expand an entire presentation

Slide Sorter View:

The slide sorter view gives you a miniature picture of each slide. You can use this view to select and drag slides from one position to another within your slide show. This sort, or rearrangements the order in which your slides are presented.

Notes View:

The notes view is used to enter notes or script for the slide within a presentation. Once the notes are added, you can print the slide show and use the printed output as a script. You can also give the copies of printed materials to your audience as in-depth handouts.

Slide Show:

This view displays the slides in full screen. It is used to either actually show or simply review your slide presentation. Use this view to check final sizes, colour, animation, and transitions between slides, sounds and other controls. To check the timing of self-running presentation, use the view > Slide show menu selection. You can also distribute your presentation with the Power Point viewer program, used to run presentations without the actual Power Point program.

The Slide Master:

The slide master is the master organizer. All the slides follow the pattern of the slide master. The slide master will automatically be active in the background whenever slides are prepared or opened.

BUILT-UP WIZARDS:

Now that you familiar with some Power Point basics, it's time to take a look at Power Point's built-in design aids, called wizards. You encounter a wizard each time you launch the Power Point program. Look at the first dialog. In previous activities you closed this dialog and used File > New or File > Open. However, both these operations are easily achieved with this dialog. The four choices presented by the dialog are summarized. Then, the Auto Content Wizard selection is explored in more detail.

Auto content wizard: This selection launches a series of wizard dialogs that guide you through the creation of a few presentations.

Template: This selection allows you to pick a slide design template from a large list of background patterns and colors.

Blank Presentation: This selection opens the New Slide dialog from which you choose the layout of the first slide in a new presentation.

Open an Existing Presentation: This selection uses the **File > Open** Dialog from

which you can pick an existing slide presentation file.

Using the Auto Content Wizard:

Use the procedure to familiarize yourself with the Auto Content wizards.

1. Click on the Auto Content Wizard button. Then click on OK to view the opening dialog.

2. Click on Next do display the first working dialog. Select the type of presentation you want.

3. Click on Next and select the type of presentation.

4. Click on Next and check the selections one this dialog as shown in the 4th step. We consider this an On-Screen presentation. And choose NO at "Will you print handouts?" option. You can change your mind later if you decide to print paper copies of your slides. Notice that PowerPoint can create pages for use as overhead projections transparencies, in either color or black and white. PowerPoint can also produce files that are compatible with 35mm slide making equipment from Genicom. If you want to use this service, you should select this add-in using Setup.

5. Click on Next and click on Finish to let Power Point build the presentation for you.

6. The slides already have key sales points and list suggested information for inclusion in your presentation, At this point, you are ready to begin customising the

information to suit your needs.

EXAMPLE OF CREATING A PRESENTATION SLIDE:

1. Execute PowerPoint and select blank presentation.

2. Select the slide layout according to the requirement and click on OK.

3. Now create title slide by tying the information.

4. Click on Apply Design Template from common task taskbar. Notice the

following dialog.

5. Select the design from the list of design templates and click on **Apply**.

6. Click on New Slide and pick second slide on the top row. Click on **OK**.

7. Type the information for the second slide.

8. Click on New Slide, pick the Text & Clip Art layout and click on OK.

9. Type the title and bulleted text as shown below.

o Double click on the picture. It will take you to Clip Art and select the

picture clicks on **Insert**.

o Click on New Slide and double-click on the bulleted list side.

10. Now use File > Save to save your presentation. Type the file name and

click on **Save**. Notice that it is saved as a presentation (*.ppt) file type.

11. Press the **Ctrl + Home** to move back to the first slide. Then click on **Slide**

Show view button.

INSERTING CLIP-ART PICTURES INTO SLIDES:

These steps show you how to insert clipart pictures into your presentation:

o Move to the slide on which you want to paste the clipart.

o Choose the **Insert > Picture > Clip Art** command.

o Choose the Clip Art picture you want.

o Clip on Insert to insert the picture.

Moving, Sizing and Stretching Pictures:

Follow these steps to force your inserted Clip Art into full compliance:

· Click on the picture and drag wherever you want.

· Notice the eight handles. Drag one of them to resize the picture.

Editing a Clip Art Picture:

Sometimes one of the clipart pictures supplied with PowerPoint is close but not exactly what you want. In that case you can insert the picture and then edit it. These steps tell you how to edit a clipart picture.

1. Choose the picture you want to edit.

2. Use the **Draw > Ungroup** command to convert the picture to PowerPoint

shapes that you can edit.

3. Now edit the picture.

To beautify your presentation you can add pictures onto your slide. You can either insert a picture created using another drawing utility or insert the pictures available through Microsoft Office's Clipart Gallery.

SLIDE SHOW:

Once your slides are ready, you are ready for the presentation. Before you start the slide show, you can apply various effect onto the slide show. The changeover of slide can have various transition effects or the data present in a Bulleted List box of the Bulleted List Page Layout can have a move-in effect with various builds. The best view to apply transition and to build slides for presentation is the slide sorter view, which allows easy access to select slides.

USING SLIDE TRANSITIONS:

A transition is how PowerPoint gets from one slide to the next during an on-screen slide show. The normal way to jump from slide to slide is simply to cut to the new slide. Effective, PowerPoint enables you to assign any of 45 different special effects to each slide transition.

For example, you can have slide scoot over the top of the current slide from any direction or you can have the current slide scoot off the screen in any direction to reveal the next slide.

5.3 SUMMARY

o Multimedia is the combination of sound, graphics, animation, and video with traditional media such as text. In the world of computers, multimedia is a subset of hypermedia that combines the elements of multimedia with hypertext, which links the information.

o Microsoft PowerPoint is a presentation programme developed by Microsoft for its Microsoft Office system. Microsoft PowerPoint runs on Microsoft Windows and the Mac OS computer operating systems.

o Bob Gaskins and software developer Dennis Austin developed the original Microsoft Office PowerPoint as Presenter for Forethought, Inc, which they later renamed PowerPoint.

5.4 KEY WORDS

Multimedia Application Programmes: A multimedia application is one that uses a collection of media sources. Some of the better-known examples of such applications are PowerPoint, the presentation package from Microsoft, and Acrobat, the document presentation product from Adobe Systems.

Power Point: Microsoft's PowerPoint is a presentation programme developed by Microsoft for its Microsoft Office system. Microsoft PowerPoint runs on Microsoft Windows and the Mac OS computer operating systems.

Slide Show: Once your slides are ready, you are ready for the presentation. Before you start the slide show, you can apply various effect onto the slide show. The changeover of slide can have various transition effects or the data present in a Bulleted List box of the Bulleted List Page Layout can have a move-in effect with various builds.

Using Slide Transitions: A transition is how PowerPoint gets from one slide to the next during an on-screen slide show. The normal way to jump from slide to slide is simply to cut to the new slide. Effective, PowerPoint enables you to assign any of 45 different special effects to each slide transition.

5.5 SELF-ASSESSMENT QUESTIONS (SAQs)

14. Write a detailed note on the Power Point Presentation programme.

15. Discuss the major facilities available in the Power Point Presentation programme.

16. Write a detailed note on slide preparation in Power Point.

5.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	MS-EXCEL
LESSON NO.: 6	

LESSON STRUCTURE

6.0 OBJECTIVES

The objectives of this lesson are:

o To Get an Introduction to MS Excel

o To Understand the Various Versions of MS Excel

o To Know About the Basics of MS Excel

o To Understand the Various Excel Styles

6.1 INTRODUCTION

Microsoft Excel (full name Microsoft Office Excel) is a spreadsheet application written and distributed by Microsoft for Microsoft Windows and Mac OS. It features calculation and graphing tools, which, along with aggressive marketing, have made Excel one of the most popular microcomputer applications to date. It is overwhelmingly the dominant spreadsheet application available for these platforms and has been so since version 5 in 1993 and its bundling as part of Microsoft Office. Microsoft originally marketed a spreadsheet program called Multiplan in 1982, which was very popular on CP/M systems, but on MS-DOS systems it lost popularity to Lotus 1-2-3. This promoted development of a new spreadsheet called Excel, which started with the intention to, in the words of Doug Klunder, 'do everything 1-2-3 does and do it better'.

The first version of Excel was released for the Mac in 1985 and the first Windows version (numbered 2.0 to line-up with the Mac and bundled with a run-time Windows environment) was released in November 1987. Lotus was slow to bring 1- 2-3 to Windows and by 1988 Excel had started to outsell 1-2-3 and helped Microsoft achieve the position of leading PC software developer. This accomplishment, dethroning the king of the software world, solidified

Microsoft as a valid competitor and showed its future of developing graphical software. Microsoft pushed its advantage with regular new releases, every two years or so. The current version for the Windows platform is Excel 12, also called Microsoft Office Excel 2007. The current version for the Mac OS X platform is Microsoft Excel

2004.

Microsoft Excel 2.1 included a run-time version of Windows 2.1. Early in its life Excel became the target of a trademark lawsuit by another company already selling a software package named "Excel" in the finance industry. As the result of the dispute Microsoft was required to refer to the program as "Microsoft Excel" in all of its formal press releases and legal documents. However, over time this practice has been ignored, and Microsoft cleared up the issue permanently when they purchased the trademark to the other program.

Microsoft also encouraged the use of the letters XL as shorthand for the program; while this is no longer common, the program's icon on Windows still consists of a stylized combination of the two letters, and the file extension of the default Excel format is .xls. Excel offers many user interface tweaks over the earliest electronic spreadsheets; however, the essence remains the same as in the original spreadsheet, VisiCalc: the cells are organized in rows and columns, and contain data or formulas with relative or absolute references to other cells.

In this lesson we shall discus about the various aspects of MS Excel

6.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o MS Excell- An Introduction

o Versions of MS Excel

o Basics of MS Excel

o Excel Styles

6.2.1 MS EXCELL- AN INTRODUCTION

MS Excel is a Windows based spreadsheet (worksheet) package. When calculations are made on paper and certain data must be changed, then the entire work must be recalculated and re-written. If a spreadsheet package is used, then the re-calculation is automatic. The details of bank passbook, tax, inventory, purchase and sales can also be maintained using a spreadsheet package. Lotus 1-2-3, Quattro Pro, Symphony, MS Excel etc. are spreadsheet packages.

Excel was the first spreadsheet that allowed the user to define the appearance of spreadsheets (fonts, character attributes and cell appearance). It also introduced intelligent cell re-computation, where only cells dependent on the cell being modified are updated (previous spreadsheet programs recomputed everything all the time or waited for a specific user command). Excel has extensive graphing capabilities.

When first bundled into Microsoft Office in 1993, Microsoft Word and Microsoft PowerPoint had their GUIs redesigned for consistency with Excel, the killer app on the PC at the time.

Excel has included Visual Basic for Applications (VBA), a programming

language based on Visual Basic which adds the ability to automate tasks in Excel and to provide user defined functions (UDF) for use in worksheets. VBA is a powerful addition to the application, which, in later versions, includes a fully featured integrated development environment (IDE).

Macro recording can produce VBA code replicating user actions, thus allowing simple automation of regular tasks. VBA allows the creation of forms and in worksheet controls to communicate with the user. The language supports use (but not creation) of ActiveX (COM) DLL's; later versions add support for class modules

allowing the use of basic object-oriented programming techniques. The automation functionality provided by VBA has caused Excel to become a target for macro viruses. This was a serious problem in the corporate world until antivirus products began to detect these viruses. Microsoft belatedly took steps to prevent the misuse by adding the ability to disable macros completely, to enable macros when opening a workbook or to trust all macros signed using a trusted certificate.

6.2.2 VERSIONS OF MS-EXCEL

Versions of Microsoft Excel for Windows:

1987 Excel 2.0 for Windows

1990 Excel 3.0

1992 Excel 4.0

1993 Excel 5.0 (Office 4.2 & 4.3, also a 32-bit version for Windows NT only on the

Power Pc, DEC Alpha, and MIPS)

1995 Excel for Windows 95 (version 7.0) - included in Office 95

1997 Excel 97 - (version 8.0) included in Office 97 (x86 and also a DEC Alpha

version)

1999 Excel 2000 (version 9.0) included in Office 2000

2001 Excel 2002 (version 10) included in Office XP

2003 Excel 2003 (version 11) included in Office 2003

2007 Excel 2007 (version 12) included in Office 2007

Versions for the Apple Macintosh include:

1985 Excel 1.0

1988 Excel 1.5

1989 Excel 2.2

1990 Excel 3.0

1992 Excel 4.0

1993 Excel 5.0 (Office 4.X -- Motorola 68000 version and first PowerPC version)

1998 Excel 8.0 (Office '98)

2000 Excel 9.0 (Office 2001)

2001 Excel 10.0 (Office v. X)

2004 Excel 11.0 (part of Office 2004 for Mac)

2008 Excel 12.0 (part of Office 2008 for Mac)

CRITICISM:

Due to Excel's foundation on floating point calculations, the statistical accuracy of Excel has been criticized, as has the lack of certain statistical tools. Excel proponents have responded that some of these errors represent edge cases and that the relatively few users who would be affected by these know of them and have workarounds and alternatives.

Excel incorrectly assumes that 1900 is a leap year. The bug originated from Lotus 1-2-3, and was implemented in Excel for the purpose of backward compatibility. This legacy has later been carried

over into Office Open XML file format. Excel also supports the second date format based on year 1904 epoch.

6.2.3 EXCEL BASICS

Before working with MS-Excel, different parts of Excel spreadsheet must be identified.

Parts of MS-Excel Spreadsheet:

When MS-Excel is loaded, the Excel window will appear on the screen. Excel window appearance with its parts as given below.

Title bar — Displays the application name, file name and various window controls like minimize button, maximize button and close button.

Menu bar — Different options for selection

Standard Toolbar — Displayed by default, allows giving common commands like saving the file, opening a file, printing etc.

Formatting Toolbar — Allows the user to give commands related to formatting cells and cell contents like Bold, Underline, Font style, Font size, Color etc.

Name Box — Displays the address of the current cell.

Formula Bar — Displays the cell content

Current Cell — Current cell will be the active cell.

Row Headers — There are 65536 rows (lines) numbered 1,2,3.....65536. First row number is 1 and the last row number is 65536. To go to cell in last row, press End and Down arrow key, to return to cell in first row, press End and Up arrow key.

Column Headers — There are 256 columns as A, B, C .... Z, AA, AB....AZ, BA,

BB...IV. First column name is A and last column name is IV. To go to the cell in last

column header press End and Right arrow key, to return to the cell in first column, press End and Left arrow key.

Scroll Bars — Used to scroll through different parts of current sheet.

Split Boxes — Used to split the window into 2 or 4 parts or to remove the split.

Tab Split Box — Used to adjust the space occupied by the sheet tabs and horizontal scroll bar.

Sheet Tabs — Displays the sheet names. Each worksheet is named as Sheet 1,

Sheet 2 and Sheet 3.

Status Bar — Displays on the left side various modes like Ready or Edit mode. The status on num lock, caps lock and scroll lock keys on the keyboard on the right side.

WORKSHEETS WITH IN WORKBOOK:

Excel documents (files) are known as workbooks. Each Workbook contains 3 worksheets by default. Adding or deleting the sheets can change the number of sheets. Each sheet is named uniquely like Sheet 1, Sheet 2 etc. which is displayed in the sheet tab. A workbook can also contain chart sheets, which are named as

Chart 1, Chart 2 etc., by default. When Excel is loaded, it automatically opens a new

workbook, named BOOK1. (With extension. XLS.) This name is displayed on the title

bar. The main part of the Excel screen is the worksheet area — a grid of rows and columns. The worksheet contains 65536 rows and 256 columns.

CELL:

The intersection of a column and a row is called as a cell. Each cell has a name or a cell address. The cell address consists of the column letter and a row number. For instance, the first cell is in first column and first row. First column name is A and first row number is 1. Therefore, the first cell name address is A1. First cell is also called as Home Cell. Similarly, the last cell address is IV65536 (column IV and row 65536). Total cells in a worksheet are 256 * 65536 (total number of columns x rows). At any time one cell can be active and the address of the active cell is displayed in the name box. A thick black border indicates the active cell. Any cell can be made active by clicking on that cell. Using key combinations also it is possible to move quickly to the desired cell.

NAVIGATING WORKSHEET:

To move to any cell of any worksheet of an open workbook, the mouse can be used. · To scroll through different parts of the worksheet, drag the scroll box in the scroll bars or click on the arrow marks in the scroll bars. · To go to different sheets in the workbook, click on the desired sheet name in the sheet tab.

· To go to a desired cell, cell inside the cell, or select **Edit > Go To** type the desired cell address in the Reference box (for example, D7) and click on OK. Or

· Click on the name box, type the desired cell address and press Enter.

ENTERING AND EDITING DATA:

Any entry can be made in the active cell. Entries can be of 4 different types.

They are:

· **Text** — Text in a cell include any combination of letters, numbers, and keyboard symbols. A cell can contain 32000 characters. If column width prevents a text string fitting visually in a cell, the display extends over neighbouring cells. However, if the neighbouring cells are occupied, the display is truncated. To store a number as a text entry, use apostrophe (‘) as the first character.

· **Numbers —** Numbers include digits from 0 to 9 and some special characters like $

% + - / (), etc. Date and time are stored as numbers. If 8-15 is entered in a cell, excel will display it as 15-Aug. When an unformatted number does not fit in a cell, it is displayed in scientific notation. When a formatted number does not fit in a cell #### is displayed.

· **Logical Values** — Logical entries, TRUE and FALSE (uppercase only) can be entered in the cells.

· **Formulas** — Formulas are entered into the cell to perform calculations. A formula begins with an equal sign (=). After completing the formula entry, the result of formula will be displayed in the cell and the formula will be displayed in the formula bar. If the formula entered is wrong, error values are stored in the cell. Built-in functions, which are used to perform some calculations, are also treated as a formula entry.

To Make Any Entry in the Cell

· Make the cell active (select the cell) by click on the cell or by pressing arrow keys.

· Type the content of cell. · Press Enter or press the arrow keys or click on any other cell to complete the entry.

To Edit the Cell Content

Make the cell active (select the cell) and use any one of the following methods.

· Press F2 function key or double click on the cell, make the correction in the cell content and press Enter.

· Click on the formula bar (which displays the active cell content), make the correction and press Enter.

· To delete the cell content, click on the cell and press Delete.

COPYING AND MOVING CELL CONTENTS:

Copying the cell content

To copy the cell contents to other cells,

· Select the range of cell, Choose Edit > Copy or Ctrl + C, go to the new position and press Enter. Or

· Select the range of cells, point at the outside border of the selected range using mouse, the mouse pointer will turn into an arrow, hold down the ctrl key and drag the selection to a new location.

Moving the cell content:

To move the cell content to another location,

· Select a range of cells, Choose Edit >Cut or Ctrl + X, go to the new position, and press Enter.

Or

· Select the range of cells, point at the outside border of the selected range using mouse, the mouse pointer will turn into an arrow, drag the selection to a new location.

INSERTING CELLS, COLUMNS, AND ROWS:

To insert cells, columns and rows select Insert > Cells.... Insert dialog box will be displayed with the following options,

· Shift cells right insert a new cell and existing cells will be shifted to the right.

· Shift cells down insert a new cell and existing cells will shifted down.

· Entire row will insert one row.

· Entire column will insert one column.

Choose Insert > Columns option to insert one or more columns. To insert more than column, block the number of columns to be inserted and choose to insert > Columns. Insert > Rows option will insert one row in current position. To insert many rows, block the number of rows to be inserted and choose to insert > Row.

OPERATOR:

Operator is a symbol used to specify the type of calculation that is to be performed on the elements of a formula. Microsoft Excel includes four different types of calculation operators: arithmetic, comparison, text and reference.

Arithmetic Operators:

Arithmetic operators perform basic mathematical operations such as addition, subtraction, multiplication; combine numbers; and produce numeric results.

+ (plus sign) Addition 3+3

- (minus sign) Subtraction Negation 3-1-1

* (asterisk) Multiplication 3*3

/ (forward slash) Division 3/3

% (percent sign) Percent 20%

^ (caret) Exponentiation 3 ^ 2

Comparison Operators:

These operators compare two values and then produce the logical value TRUE or

FALSE.

= (equal sign) Equal to A1 = B1

> (greater than sign) Greater than A1 > B1

< (less than sign) Less than A1 < B1

>=(greater than or equal Greater than or equal to A1 > = B1 to sign)

<= (less than or equal to sign) Less than or equal to A1 <= B1

<> (not equal to sign) Not equal to A1<> B1

Text Operator:

The text operator "&" combines one or more text values to produce a single piece of text. & (ampersand) Connects, or concatenates, two value of produce one continues text value "North" & "wind" produce "North wind"

Reference Operators:

Reference operators combine a range of cells for calculations.

: (colon) Range operator, which produces one B5 : B15

reference to all the cells between two references, including the two references.

, (comma) Union operator, which combines SUM (B5:B15, D5:D15) multiple

references into one reference (single Intersection operator, which produces space)

SUM (B5:B15 A7 : D7) one reference to cells common to two in this example, cell B7

references. is common to both ranges.

FUNCTION WIZARD f*:

The function can also be entered using the Function Wizard, instead of typing them

.To use the function wizard.

· Click on the cells where the function is to be included

· Click on the function wizard icon named paste Function available in the Standard

Toolbar (or select **Insert >function...)**

· Select a function category in the left side. Available in that category will be

displayed on the right side. Select the required functions and click on OK.

· Now, give the range in the place of number1, number2 etc. either by typing the range manually or by blocking the range. The result will be displayed inside the dialog for confirmation. To end it, click on OK.

CELL FORMATTING:

There are different categories of formats available like General, Number, Currency,

Date, and Text etc. To select a format,

1. Click on the cell or select a range of cells that are to be formatted.

2. Select **Format > Cells**: The Format Cells dialog box will be displayed, here, you may choose the desired format. General will be the default format.

· Number format is used to specify number of decimals; thousand-separator symbol and how negative numbers are to be displayed.

· Currency format is used to specify the number of decimals, the currency symbol, and how the negative numbers are to be displayed.

· Accounting format can be used to specify the number of decimals and a currency symbol.

· Date format can be used to specify, how the date must be displayed in a cell i.e. month in words etc.,

· Time format is used to specify 24 hour or 12 hour format, display seconds or not.

· Percentages format multiply the cell value by 100 and display the result with a percent % symbol. Number of decimals can be specified.

· Text format can be used to represent a number entered in a cell as a text entry.

7.2.4 EXCEL STYLES

Excel allows the user to a whole lot of different kinds of formatting, i.e. number format, font, alignment, borders, patterns, and protection status in one dialog box. Instead of using all the above individually to a certain cell the style feature provides the user to set a specific formatting to certain cells. The same style

can be used format any other cell. It is very useful for the user to use styles as it saves time and also establishes formatting standard.

Excel includes six built-in styles like Comma, Comma, Currency, Currency, normal, and Percent of which Normal style is commonly used. The user can also create other styles with specific formatting. When the workbook is saved along with it the styles are also saved.

Creating Styles:

To create styles, select Format > Style. A list of style names will be displayed. A new style name can be specified for the style already created by the user. To do this, type any name in the style name box and choose to add. The style name that has been created can be later applied to format cells simultaneously. Note: Row height and column width is not part of the style definition.

Custom List:

A custom list is a collection of some commonly used words, which can be reproduced by dragging the fill handle. For example, a company operates in for different regions (North, South, East and West), and the region has to be typed constantly onto the worksheet. A custom list can be used to save data entry time.

Defining Custom List (When list is already existing on the worksheet):

· Enter the list into a (contiguous) range of cells, in a row or column.

· Select the range of cells containing the list.

· Choose Tools > Options, then select the Custom Lists tab.

· Click on the Import button (the list will be displayed in the Custom List box and List

Entries box)

· Click on OK

Defining Custom List (By typing the list in the List Entries Box):

· Choose Tools > Options, then select the Custom Lists tab.

· Click on the New List Option from Custom List or click in the List Entries Box.

· Type the entries in the List Entries box, beginning with the first entry. Press ENTER

after each entry. Click on OK after completing the List entries.

CHARTS:

Charts are graphical representation of numerical data. A set of numeric data, which is plotted, is called data series. Each value in the data series is a data point. Data series can be in rows or columns.

Types of Charts:

Depending on the appearance of chart, chart can be Embedded Chart and Chart Sheet. Embedded chart is drawn on the worksheet where the data exists. Chart sheet is a separate sheet containing only the chart in it.

Creating a Quick Chart Sheet:

To create a chart in a separate sheet, select the data with column headings and one

text column.

E.g. select A2: D6 and press **F11**. A default chart (generally a column chart) will be

created in a separate sheet named Chart1, before the sheet, which contains the

data. The chart created will not have any titles, legends, or data labels. The chart will be drawn with series column-wise.

Steps to Create a Regular Chart:

Select the data range with the column headings and one text column entry, e.g.,

A2:D6.

Click on the Chart Wizard icon in the Standard Toolbar or select Insert> Chart. Chart wizard step 1 of 4 dialog will be displayed.

Step 1 displays the available type of charts under the groups Standard Type and Custom Type. Default is the Column Chart available in the group Standard Types. Select a type of chart. On the right side, the selected chart's sub-types will be displayed. Select a sub-type. To see the Sample chart, click and hold down the

Press and hold to view example Button. Click on Next to go to second step.

Step 2 allows the user to specify the data range, series in rows or columns, and specify the range of each series including the range of xalis labels. In the Data Range tab, we can specify the data range (range of data series to be plotted and xaxis

labels) and whether the series in Rows or Columns. Default is series in Columns: The sample chart will be displayed on the screen and if information is changed it will be modified automatically. For example, select series in Rows, the chart will be modified to show the series in rows. If the data range is not displayed, then it can be specified by typing the range or clicking in the data range

box and by blocking the data range in the worksheet. The range will be displayed in the data range box and the chart sample will be displayed accordingly. The data range displayed there can also be edited. The second tab Series, is used to specify the range for each data series with the cell, which contains the name of series, adding or removing a series and

specifying the x-ails labels. After specifying these things, click on Next to move to the third step.

In **Step 3**, titles, axes, grid lines, legend position, data labels, and data tables for the chart can be specified.

Titles: Allows you go give different titles for the chart.

Chart Title: Main title for the chart.

Category (X) axis: Title for X-axis, will be displayed below the X-axis labels.

Value (y) axis: Title for the Y-axis, will be displayed at the left side of Y-axis numbers.

Second category (X) axis: Title for the Second X-axis.

Second Value (Y) axis: Title for the secondary Y-axis, will be displayed at the right side of numbers. Second Y-axis will appear on the right side of column chart.

For the chart, given the chart title - Sale of Soaps in Oct., Nov. and Dec., category

(X) axis title — Soaps, value (Y) axis title — Quantity.

Axis: It can be used to specify whether the primary X-axis and Y-axis must be displayed in the chart or not.

Category (X) axis: If deselected, X-axis labels will not be displayed. If selected, Xaxis labels can be displayed in date format or with the content of X-axis label range.

Value Y-axis: If deselected, Y-axis numbers are not displayed. To display Y-axis numbers, this option must be selected.

Gridlines: It is used to specify whether major and minor X-axis and Y-axis gridlines are to be displayed in the chart or not. By default, only value Y-axis Major gridlines will be displayed.

Legend: It is used to specify, whether the legend for the chart is to be displayed or

not. A legend is an index displaying the color of series and the name of series. If it to be displayed, specify the placement of legend in the chart (bottom, corner, top, right, or left). By default, the legend will be displayed at the right side of the chart.

Data labels: It is used to specify whether the chart by default, it is not display inside the chart or not. Number or text displayed above each data point is called data labels. If the data labels must be displayed, either the value (number) or label (text) must be displayed as the data labels. We can also specify, whether the legend key is to be displayed next to the label or not. By default, the data labels are not displayed.

Data Table: It is used to display the data below the chart. By default, it is not displayed. To display the data table, select Show data table check box. We can also specify, whether legend key must be displayed along with the data table or not. If data labels are displayed, data table need not be displayed in the chart. After specifying the required options, select Next to go to last step.

Step 4, allows you to specify the placement of chart. The chart can be placed in a new chart sheet named Chart1 by selecting the option as new sheet, or it can be placed as an object in any one of the existing worksheets by selecting As object in. Click on the Finish button to complete the creation of the chart.

3-D CHARTS:

3-D charts can represent complex data better than 2-D charts. Elevation box is used to view the chart from specified height. The elevation ranges from-90 degrees to 90

degrees. -90 degree is a view from directly below the plot area and 90 degree is a view from directly above plot area. Rotation box is used to control the rotation of the plot area around the z-axis -vertical axis. Rotation is measured in degrees from 0 to 360. 3-D charts rotation ranges from 0-44. Perspective box controls the view of the chart depth. The perspective value specifies the ratio of the front of the chart to the back of the chart. Value ranges from 0 to 100 degrees.

DATA SERIES WITH DRAWING OBJECTS:

Draw the drawing object, for example, a launching face from the auto shapes basic shapes. Select it by click on it, press Ctrl + C to copy it to clipboard, select the series and press Ctrl+V to paste it on the series. The smiling face can be copied to Dec. series and one face will be present for one data point. To have multiple smiling faces, right click on the data series, select Format Data Series, select Fill Effects available in Patterns tab, select Stack in the format for select Stack and Scale to and specify a measurement. The smiling face will be repeated to fill the data points. Stretch to have one picture to represent one data point.

To remove the drawing objects included in the series, select the data series, select

Edit > Clear > Formats.

COMBINATION CHARTS:

A combination chart will have 2 types of charts in one, one to represent some data

series and another to represent some other data series. To create a combination chart, right click on the data series, select Chart Type from the shortcut menu and select a type of chart. The series will be converted to that chart type, by keeping the other series as it is. Also selecting the appropriate chart type can also create Combination chart.

6.3 SUMMARY

o Microsoft Excel (full name Microsoft Office Excel) is a spreadsheet application written and distributed by Microsoft for Microsoft Windows and Mac OS. It features calculation and graphing tools,

which, along with aggressive marketing, have made Excel one of the most popular microcomputer applications to date.

o The first version of Excel was released for the Mac in 1985 and the first

Windows version (numbered 2.0 to line-up with the Mac and bundled with a run-time Windows environment) was released in November 1987. Lotus was slow to bring 1-2-3 to Windows and by 1988 Excel had started to outsell 1-2-3 and helped Microsoft achieve the position of leading PC software developer.

o Excel has included Visual Basic for Applications (VBA), a programming language based on Visual Basic which adds the ability to automate tasks in Excel and to provide user defined functions (UDF) for use in worksheets. VBA is a powerful addition to the application, which, in later versions, includes a fully featured integrated development environment (IDE).

o the statistical accuracy of Excel has been criticized, as has the lack of certain statistical tools. Excel proponents have responded that some of these errors represent edge cases and that the relatively few users who would be affected by these know of them and have workarounds and alternatives.

o Excel documents (files) are known as workbooks. Each Workbook contains 3 worksheets by default. Adding or deleting the sheets can change the number of sheets. Each sheet is named uniquely like Sheet 1, Sheet 2 etc. which is displayed in the sheet tab. A workbook can also contain chart sheets, which are named as Chart 1, Chart 2 etc., by default.

6.4 KEY WORDS

Microsoft Excel: Microsoft Excel is a spreadsheet application written and distributed by Microsoft for Microsoft Windows and Mac OS. It features calculation and graphing tools, which, along with aggressive marketing, have made Excel one of the most popular microcomputer applications to date.

Criticism of Excel: The statistical accuracy of Excel has been criticized, as has the lack of certain statistical tools. Excel proponents have responded that some of these errors represent edge cases and that the relatively few users who would be affected by these know of them and have workarounds and alternatives.

Worksheets in Excel: Excel documents (files) are known as workbooks. Each Workbook contains 3 worksheets by default. Adding or deleting the sheets can change the number of sheets. Each sheet is named uniquely like Sheet 1, Sheet 2 etc. which is displayed in the sheet tab. A workbook can also contain chart sheets, which are named as Chart 1, Chart 2 etc., by default.

7.5 SELF-ASSESSMENT QUESTIONS (SAQs)

17. Write a detailed note on the MS Excel Spreadsheet programme.

18. Discuss the major facilities available in the MS Excel Spreadsheet programme.

19. Write a detailed note on the functioning of the MS Excel Spreadsheet

programme.

7.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	WORKING WITH TEXT
LESSON NO.: 7	

LESSON STRUCTURE

7.0 OBJECTIVES

The objectives of this lesson are:

o To Get an Introduction to Working With Text

o To Get an Introduction to Word Processors

o To Understand the Characteristics of Word Processors

o Uses of Word Processors

o Growth and Development of Word Processors

7.1 INTRODUCTION

Page Composition, the method of assembling a document by combining text, graphics, and images using a computer and specialized software. The original text and graphics are generally produced with software such as word processing and illustration programme, and images are captured using digital photography or by scanning photographic media (prints, negatives, or transparencies). Each element is then transferred into a page-makeup programme, which enables the user to lay out text and graphics on the screen. These programmes often include some illustration and image-editing features, although their main strength is in their typographic and layout capabilities.

The finished document may be intended for printing or for electronic distribution. Printing may be carried out on a local device, such as a laser or ink-jet printer, or the document may be output on a printing plate so that multiple copies can be printed by one of the printing processes. In this lesson we shall discus about the various aspects of working with text.

7.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Working With Text- An Introduction

o Word Processors- An Introduction

o Characteristics of Word Processors

o Uses of Word Processors

o Growth and Development of Word Processors

7.2.1 WORKING WITH TEXT - AN INTRODUCTION

Today, many people are not writing anymore. Most professionals type in material straight on to a computer. In fact, in the newspaper business, reporters feed their news stories directly into their laptop

computers while in the field. They send the stories via e-mail or other IT-mediated means to their offices. News editors in the office go through the stories, select an assign stories online through a networked system. Sub editors edit the stories, feed in the

headlines, sub headlines, and other such text matter as required on to them

computers. These stories then reach the page make-up personnel, who add photos and other graphic material, prepare layout for the stories and the entire pages. Many newspapers work almost in a paperless environment.

All these have been possible because of many advancements in the ITenabled facilities, specifically in the text-related software packages. It is now possible for one or a few persons to compose, design and even print many types of material in small scale with the help a computer and a printer. Desk top publishing and electronic publishing have revolutionized the publishing world. It is said that a picture is worth a thousand words. This saying, while true in many cases, does not diminish the importance of words. This is because in most

cases, words tell the complete story and the pictures generally supplement the story told verbally. And words, when used well, open doors to a world of information and knowledge. Words are the most common and widely used means of expression. Words are doorways to the world of creativity. And words often take us in to a world of fantasy.

Computers, particularly text-related software packages, play an important role as these not only help us compose text, these also help us present the text in more attractive and appealing manner.

The different types or forms of text material available are as follows:

o Written Text,

o Printed Text,

o Electronic Text Machine Readable),

 Scanned Text,

 Hyper Text,

There are many software packages available for working with text. These include:

o WORD PROCESSING PROGRAMMES

Word

Word Perfect

Notepad

WordPad

TextEdit

o DESKTOP PUBLISHING PROGRAMMES

Microsoft Publisher

Pagemaker Programmes (PM 5.0, PM 6.5, and PM 7.0)

Adobe FrameMaker

Quark Express

Corel Ventura

o PRESENTATION AND AUTHORING PROGRAMMES

PowerPoint

Presentation Manger

o GRAPHICS EDITING PROGRAMMES

o WEB DESIGN PROGRAMMES

Microsoft FrontPage

Macromedia Dreamweaver

Here in this lesson, we shall focus on the text-related applications available in the various word processing programmes.

7.2.2 WORD PROCESSORS- AN INTRODUCTION

A word processor (more formally known as document preparation system) is a computer application used for the production including composition, editing, formatting, and possibly printing) of any sort of printable material. Word processors also refer to a stand-alone computer unit similar to a typewriter, but often including technological advancements such as a screen, advanced formatting and printing options, and the ability to save documents onto memory cards or diskettes. Word processors almost invariably allowed the user to choose between standard typing and word processing modes by way of a switch. Such word processors should not be confused with an electric typewriter. Word processors are descended from early text formatting tools (sometimes called text justification tools, from their only real capability). Word processing was one of the earliest applications for the personal computer in office productivity. Although early word processors used tag-based markup for document formatting, most modern word processors take advantage of a graphical user interface. Most are powerful systems consisting of one or more programmes that can produce any arbitrary combination of images, graphics and text, the latter handled

with type-setting capability. Microsoft Word is the most widely used computer word processing system; Microsoft estimates over five hundred million people use the Office suite. There are also many other commercial word processing applications, such as WordPerfect.

Open-source applications such as OpenOffice's Writer and Word are rapidly gaining in popularity.

7.2.3 CHARACTERISTICS OF WORD PROCESSORS

Word processing typically refers to text manipulation functions such as automatic generation of:

o Batch mailings using a form letter template and an address database (also

called mail merging);

o Indices of keywords and their page numbers;

o Tables of contents with section titles and their page numbers;

o Tables of figures with caption titles and their page numbers;

o Cross-referencing with section or page numbers;

o Footnote numbering;

o New versions of a document using variables (e.g. model numbers, product

names, etc.)

Other word processing functions include "spell checking" (actually checks against wordlists), "grammar checking" (checks for what seem to be simple grammar errors), and a "thesaurus" function (finds words with similar or opposite meanings). In most languages' grammar is very complex, so grammar checkers tend to be unreliable and also require a large amount of RAM. Other common features include collaborative editing, comments and annotations, support for images and diagrams and internal cross-referencing.

Word processors can be distinguished from several other, related forms of software: Text editors (modern examples of which include Notepad, Emacs and vi), were the precursors of word processors. While offering facilities for composing and editing text, they do not format documents. This can be done by batch document processing systems, starting with TJ-2 and RUNOFF and still available in such systems as LaTeX (as well as programmes that implement the paged-media extensions to HTML and CSS). Text editors are now used mainly by programmers, website designers, and computer system administrators. They are also useful when fast startup times, small file sizes and portability are preferred over formatting. Later desktop publishing programmes were specifically designed to allow elaborate layout for publication, but often offered only limited support for editing. Typically, desktop publishing programmes allowed users to import text that they have written using a text editor or word processor. Almost all word processors enable users to employ styles, which are used to automate consistent formatting of text body, titles, subtitles, highlighed text, and so on.

Styles are the key to managing the formatting of large documents, since changing a style automatically changes all text that the style has been applied to. Even in shorter documents styles can save a lot of time while formatting. However, most help files refer to styles as an 'advanced feature' of the word processor, which often discourages users from using styles regularly.

7.2.4 USES OF WORD PROCESSORS

Word processors have a variety of uses and applications within the business world, home, and education.

BUSINESS: Within the business world, word processors are extremely useful tools.

Typical uses include:

o Memos

o Letters and letterhead

o Legal copies

o Reference documents

Businesses tend to have their own format and style for any of these. Thus, versatile word processors with layout editing and similar capabilities find widespread use in most businesses.

EDUCATION: Many schools have begun to teach typing and word processing to their students, starting as early as elementary school. Typically, these skills are developed throughout secondary school in preparation for the business world. Undergraduate students typically spend many hours writing essays. Graduate and doctoral students continue this trend, as well as creating works for research and publication. These manuscripts are often in excess of 200 pages and are typically the defining point of a student's career.

HOME: While many homes have word processors on their computers, word processing in the home tends to be educational or business related, dealing with assignments or work being completed at home. Some use word processors for letter writing, résumé creation, and card creation. However, many of these home publishing processes have been taken over by desktop publishing programmes such as Adobe Pagemaker, which is better suited for these types of documents.

7.2.5 DEVELOPMENT OF WORD PROCESSORS

The term word processing was invented by IBM in the late 1960s. By 1971 it was recognized by the New York Times as a "buzz word." A 1971 Times article referred to "the brave new world of Word Processing or W/P. IBM. introduced W/P about five years ago for its Magnetic Selectric typewriter and other electronic razzle-dazzle." IBM defined the term in a broad and vague way as "the combination of people, procedures, and equipment which transforms ideas into printed communications," and originally used it to include dictating machines and ordinary, manually operated Selectric typewriters. By the early seventies, however, the term was generally understood to mean semi-automated typewriters affording at least some form of electronic editing and correction, and the ability to produce perfect

"originals." Thus, the Times headlined a 1974 Xerox product as a "speedier electronic typewriter," but went on to describe the product, which had no screen, as

"a word processor rather than strictly a typewriter, in that it stores copy on magnetic tape or magnetic cards for retyping, corrections, and subsequent printout."

Electromechanical paper-tape-based equipment such as the Friden

Flexowriter had long been available; the Flexowriter allowed for operations such as repetitive typing of form letters (with a pause for the operator to manually type in the variable information), and when equipped with an auxiliary reader, could perform an early version of "mail merge". Circa 1970 it began to be feasible to apply electronic

computers to office automation tasks. IBM's Mag Tape Selectric Typewriter (MTST) and later Mag-Card Selectric (MCST) were early devices of this kind, which allowed editing, simple revision, and repetitive typing, with a one-line display for editing single

lines.

The 1970s-word processing concept did not refer merely to equipment, but, explicitly, to the use of equipment for "breaking down secretarial labor into distinct components, with some staff members handling typing exclusively while others supply administrative support. A typical operation would leave most executives without private secretaries. Instead one secretary would perform various administrative tasks for three or more secretaries."

In the early 1970's, computer scientist Harold Koplow was hired by Wang Laboratories to programme calculators. One of his programmes permitted a Wang calculator to interface with an IBM Selectric typewriter, which was at the time used to

calculate and print the paperwork for auto sales.

In 1974, Koplow's interface programme was developed into the Wang 1200 Word Processor, an IBM Selectric-based text-storage device. The operator of this machine typed text on a conventional IBM Selectric; when the Return key was pressed, the line of text was stored on a cassette tape. One cassette held roughly 20 pages of text, and could be "played back" (e.g., the text retrieved) by printing the contents on continuous-form paper in the 1200 typewriter's "print" mode. The stored text could also be edited, using keys on a simple, six-key array. Basic editing functions included Insert, Delete, Skip (character, line), and so on.

The labour and cost savings of this device were immediate, and remarkable: pages of text no longer had to be retyped to correct simple errors, and projects could

be worked on, stored, and then retrieved for use later on. The rudimentary Wang 1200 machine was the precursor of the Wang Office Information System (OIS), introduced in 1976, whose CRT-based system was a major breakthrough in word processing technology. It displayed text on a CRT screen and incorporated virtually every fundamental characteristic of word processor as we know them today. It was a true office machine, affordable by organizations such as medium-sized law firms, and easily learned and operated by secretarial staff.

The Wang was not the first CRT-based machine nor were all of its innovations unique to Wang. In the early 1970s Linolex, Lexitron and Vydec introduced pioneering word-processing systems with CRT display editing. A Canadian electronics company, Automatic Electronic Systems, introduced a product with similarities to Wang's product in 1974, but went into bankruptcy a year later. In 1976, refinanced by the Canada Development Corporation, it returned to operation as AES Data, and went on to successfully market its brand of word processors worldwide until its demise in the mid-1980s. Despite these predecessors, Wang's product was a standout, and by 1978 it had sold more of these systems than any other vendor. The phrase "word processor" rapidly came to refer to CRT-based machines similar to Wang's. Numerous machines of this kind emerged, typically marketed by

traditional office-equipment companies such as IBM, Lanier (marketing AES Data machines, re-badged), CPT, and NBI. All were specialized, dedicated, proprietary systems, with prices in the $10,000 ballpark. Cheap general-purpose computers were still the domain of hobbyists.

Some of the earliest CRT-based machines used cassette tapes for removable-memory storage until floppy diskettes became available for this purpose - first the 8-inch floppy, then the 5-1/4-inch (drives by Shugart Associates and diskettes by Dysan). Printing of documents was initially accomplished using IBM

Selectric typewriters modified for ASCII-character input. These were later replaced by application-specific daisy wheel printers (Diablo, which became a Xerox company, and Qume -- both now defunct.) For quick "draft" printing, dot-matrix line printers were optional alternatives with some word processors. With the rise of personal computers, and in particular the IBM PC and PC compatibles, software-based word processors running on general-purpose commodity hardware gradually displaced dedicated word processors, and the term came to refer to software rather than hardware. Some programmes were modelled after particular dedicated WP hardware. MultiMate, for example, was written for an insurance company that had hundreds of typists using Wang systems and spread from there to other Wang customers. To adapt to the smaller PC keyboard, MultiMate used stick-on labels and a large plastic clip-on template to remind users of its dozens of Wang-like functions, using the shift, alt and ctrl keys with the 10 IBM function keys and many of the alphabet keys.

Other early word-processing software required users to memorize semimnemonic key combinations rather than pressing keys labelled "copy" or "bold." (In fact, many early PCs lacked cursor keys; WordStar famously used the E-S-D-Xcentered "diamond" for cursor navigation, and modern vi-like editors encourage use of hjkl for navigation.) However, the price differences between dedicated word processors and general-purpose PCs, and the value added to the latter by software such as VisiCalc, were so compelling that personal computers and word processing software soon became serious competition for the dedicated machines. Word Perfect, XyWrite, Microsoft Word and dozens of other word processing software

brands competed in the 1980s. Development of higher-resolution monitors allowed them to provide limited WYSIWYG - What You See Is What You Get, to the extent that typographical features like

bold and italics, indentation, justification and margins were approximated on screen. The mid-to-late 1980s saw the spread of laser printers, a "typographic" approach to word processing, and of true WYSIWYG bitmap displays with multiple fonts (pioneered by the Xerox Alto computer and Bravo word processing programme), Postscript, and graphical user interfaces (another Xerox PARC innovation, with the Gypsy word processor). MacWrite, Microsoft Word and other word processing programmes for the bitmapped Apple Macintosh screen, introduced in 1984, were probably the first true WYSIWYG word processors to become known to many people until the introduction of Microsoft Windows. Dedicated word processors eventually became museum

pieces.

7.3 SUMMARY

o Computers, particularly text-related software packages, play an important role as these not only help us compose text, these also help us present the text in more attractive and appealing manner.

o It is now possible for one or a few persons to compose, design and even print many types of material in small scale with the help a computer and a printer. Desk top publishing and electronic publishing have revolutionized the publishing world.

o A word processor (more formally known as document preparation system) is a computer application used for the production including composition, editing, formatting, and possibly printing) of any sort of printable material.

o Word processors also refer to a stand-alone computer unit similar to a typewriter, but often including technological advancements such as a screen, advanced formatting and printing options, and the ability to save documents onto memory cards or diskettes. Word processors almost invariably allowed the user to choose between standard typing and word processing modes by way of a switch. Such word processors should not be confused with an electric typewriter.

o Microsoft Word is the most widely used computer word processing system; Microsoft estimates over five hundred million people use the Office suite. There are also many other commercial word

processing applications, such as WordPerfect. Open-source applications such as OpenOffice's Writer and KWord are rapidly gaining in popularity.

o Word processing typically refers to text manipulation functions such as automatic generation of: batch mailings using a form letter template and an address database (also called mail merging); indices of keywords and their page numbers; tables of contents with section titles and their page numbers; tables of figures with caption titles and their page numbers; cross-referencing with section or page numbers; and footnote numbering; etc.

o Other word processing functions include "spell checking" (actually checks against wordlists), "grammar checking" (checks for what seem to be simple grammar errors), and a "thesaurus" function (finds words with similar or opposite meanings). Other common features include collaborative editing, comments and annotations, support for images and diagrams and internal cross-referencing.

o MacWrite, Microsoft Word and other word processing programmes for the bitmapped Apple Macintosh screen, introduced in 1984, were probably the first true WYSIWYG word processors to become known to many people until the introduction of Microsoft Windows.

7.4 KEY WORDS

Text-related Software Packages: Computers, particularly text-related software packages, play an important role as these not only help us compose text, these also help us present the text in more attractive and appealing manner.

Word Processor: A word processor (more formally known as document preparation system) is a computer application used for the production including composition, editing, formatting, and possibly printing) of any sort of printable material.

Functions of Word Processing: Word processing typically refers to text manipulation functions such as automatic generation of: batch mailings using a form letter template and an address database (also called mail merging); indices of keywords and their page numbers; tables of contents with section titles and their page numbers; tables of figures with caption titles and their page numbers; cross-referencing with section or page numbers; and footnote numbering; etc.

7.5 SELF-ASSESSMENT QUESTIONS (SAQs)

Q. Write a detailed note on word processing.

Q. Discuss in brief the facilities in word processing packages.

Q. Write a detailed note on the functioning of word processing programmes.

7.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau

& James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

SUBJECT: COMPUTER APPLICATIONS	
COURSE CODE: BAMC-103	PAGE MAKER
LESSON NO.: 8	

LESSON STRUCTURE

4 OBJECTIVES

The purpose of this lesson is to help you get familiarized with the Page Maker software programme. Aldus Page Maker is a desktop publishing software package. It is primarily for users who have some familiarity with traditional publishing, although newcomers to the subject will find the programme easy to use. However, an understanding of the publishing terms that can be found in the glossary will facilitate learning. The objectives of this lesson are:

o To Get an Introduction to Page Maker 5.0

o To Know About the Functioning of Page Maker 5.0

4.1 INTRODUCTION

Adobe Systems, the corporation that helped launch the desktop publishing revolution that started in the early 1980s. Adobe is now one of the world's largest PC software companies, with annual revenues exceeding US $1 billion. The company employs approximately 3,400 people worldwide and has its headquarters in San Jose, California. Adobe has been publicly traded on the Nasdaq National Market since 1986.

Adobe Systems has been a key player in electronic publishing for many years and is probably best known as the source of the Page Maker 5.0; Page Maker 6.5;

Page Maker 7.0; the Portable Document Format (PDF, widely used to produce and interpret Web-based material); and the Adobe-Premier-Pro (a digital video-editing software programme). The vision put forward by Adobe Systems is that you should be able to

publish anything, anywhere, on any device. In practice, this means the reliable delivery of visually rich and personalized content wherever the user wants it, whether the target is a printer, a Web page, a mobile phone display, a handheld device, a computer, or an Internet appliance. Adobe Systems offers a comprehensive line of software for enterprise and creative professional customers. Its products enable customers to create, manage, and deliver visually rich and reliable content. In this lesson focus on the components and the functioning of the Page Maker 5.0 version.

8.2 PRESENTATION OF CONTENT

The content of this lesson shall be presented as follows:

o Page Maker 5.0- An Introduction

o Functioning of Page Maker 5.0

8.2.1 PAGE MAKER 5.0- AN INTRODUCTION

The Page Maker 5.0 allows you to electronically coordinate all the typographical ingredients of a publication, editing and rearranging them at will, and finally printing what was seen on the screen to produce camera-ready work. The traditional practice by a publisher of producing a dummy (**MOCKUP**) of the proposed publication should

still the followed, with the same decisions being made about page size, number of columns, size of alleys, heading fonts, subheading fonts, body text font, position of illustrations, whether to box or not, etc.

8.2.2 FUNCTIONING OF PAGE MAKER 5.0

Here are some major functions of Pager Maker 5.0:

PREPARING TEXT: Text is the crux of a publication. Prepare lengthy text in your word processor; enter shorter passages directly into the Page Maker text editor. Spell check all text and edit it for grammar and clarity before using it in a publication. There are four ways to bring text into your word processor: key it in, scan it in through an OCR (optical character reading) program, import it from other application programs, or bring it in via modem. You import word processing application program styles into Page Maker by beginning a paragraph with the name of the appropriate Page Maker style tag in angle brackets. The following is an example of how you enter text in your word processor so that you can import three styles.

<Heading> IMPORTING STYLES

<Subhead> Using Tags

<Body text>

Page Maker applies the styles specified by the first tag and then to every subsequent paragraph until it finds a new tag. If a style name tag does not match an existing Page Maker style, Page Maker creates a new style based on the formatting of the imported text.

Page Maker utilizes fonts to suit the selected printer, which should, therefore, be the final printer you intend to use — even if it is an images setter at a service bureau.

SETTING UP PAGES:

1. With the Page setup dialog box open, study the choices for a few moments without taking any action. Clicking on them may highlight choices, or the default highlight may be moved from item to item by use of the Tab key.

2. Again choose File/new and observe that because you chose Cancel, resulting in the selections you just made not being implemented, they have been replaced with the default setting.

3. Click on the X in the Double-side check box to uncheck it and to set up a single side page for this first project.

4. Place the insertion point in the left margin text box and change the measurement to .75 inches.

TEMPLATES:

In Page Maker a publication can be started with a template or a grid. A Page Maker template consists of graphic placeholders and text placeholders, invariably containing shaded graphics and text, which you replace with your own graphics and text using the Replace feature in the Place document dialog box. Grids are shapes created by nonprinting margin guides, ruler guides, and column guides, which you use to position and align text and graphics in your publications. You can create your own grids, but Page Maker provides a selection of predestined templates, which are shown.

You can modify a template if it is not exactly what you require, but if you do, or if you create a new template for a publication, give it a unique name and save it as a template for future use. Elements that are planned to appear on each page of a publication prepared from a template must be edited in the master pages, and you will learn about master pages in the Page Design section.

FILE OPERATIONS:

On your companion diskette, which should still be in a floppy drive, there is a publication similar to the one you created but did not save. You use this publication for the activities in this publication for the activities in this section.

SAVING PUBLICATIONS:

In PageMaker you save a new publication or give an old publication a new title by using the Save as... command in the File menu. Existing publications that are being edited are saved with the Save command. New publications should be given a title and saved immediately following page setup and then should be saved regularly during creation or subsequent editing.

1. Choose File/Save as ... to open the Save publication.

2. Click on the OK button. Page Maker automatically adds the extension .PM5 to filenames. Observe the name given to the publication is now in the title bar of the Layout view.

3. Again enter the File menu and note that “Save” is in gray because there is no longer any new work to save.

4. Select the Text tool and highlight the heading, ANOTHER KIND OF

RADIATION, by clicking on the text three times, or by dragging the Text icon

across the text.

PAGE MAKER SETTINGS:

When you first access Page Maker, the manufacturer’s default load and, unless you change them, they will continue to load each time you start up the program. If you alter defaults in the menus while you have a publication open, they will apply only to the text and graphics highlighted or enable at the time the selections are made. However, if you make selections when you have a blank Page Maker screen, i.e., before you have selected either New... or Open.... from the File menu, they will apply to all new publications subsequently opened, but they will not apply to existing publications that you subsequently open. You learn how to change defaults from the steps that follow.

1. Close any publications you have open, either from the publication’s Control menu or by double clicking the publication’s Control box. Answer No to the Save before closing question, then choose File/New... to open the Page setup dialog box on a clear screen.

2. When the Page setup dialog box appears, click Cancel.

3. Choose Element/Line/Hairline Any new publication you now open will have Hairline as the default Line selection.

Page Setup:

1. Double Click the Control menu box of the untitled publication to close it, answer No to the Save before closing question, then choose File/ New.... to display the Page setup dialog box.

2. Click on the arrow to the right of the page drop down list box to display the choices.

MASTER PAGES:

If you look at the lower left or your screen you should see two master page icons marked L and R for left and right. You select a master page by clicking on one of the icons, or by using the Go to page dialog box. If you had disabled the Double sided option in the Page setup dialog box, only one master page icon would be displayed and it would be a right-hand page so that the one-inch margin would be on the left, the binding sides.

Margins:

When you define margins in Page setup, they repeat on all pages, and any subsequent changes you make affect the whole publication.

Columns:

Columns do not automatically repeat on every page, except for facing pages, unless set up on a master page. You may set up to 20 columns, either for an individual page, or on a master page.

1. Choose Layout/column guides…. And when the dialog box opens leave the Set left and right pages separately unchecked, then type 2 directly into the Number of columns box. Click OK.

2. Observe that with a two-page spread both pages have been affected, then click the page 1 icon and observe that it has not been affected.

3. Click in the alley between any two columns on the left hand page and drag the alley 0.5 inch to the right. You now have uneven columns.

8.3 SUMMARY

o Adobe Systems has been a key player in electronic publishing for many years and is probably best known as the source of the Page Maker 5.0; Page Maker 6.5; Page Maker 7.0; the Portable Document Format (PDF, widely used to produce and interpret Web-based material); and the Adobe-Premier-Pro (a digital video-editing software programme).

o The Page Maker 5.0 allows you to electronically coordinate all the typographical ingredients of a publication, editing and rearranging them at will, and finally printing what was seen on the screen to produce camera-ready work. The traditional practice by a publisher of producing a dummy (**MOCK**

UP) of the proposed publication should still the followed, with the same decisions being made about page size, number of columns, size of alleys, heading fonts, subheading fonts, body text font, position of illustrations, whether to box

or not, etc.

o Text is the crux of a publication. Prepare lengthy text in your word processor; enter shorter passages directly into the Page Maker text editor. Spell check all text and edit it for grammar and clarity before using it in a publication. There are four ways to bring text into your word processor: key it in, scan it in through an OCR (optical character reading) program, import it from other application programs, or bring it in via modem. You import word processing application program styles into Page Maker by beginning a paragraph with the name of the appropriate Page Maker style tag in angle brackets.

8.4 KEY WORDS

Page Maker 5.0: The Page Maker 5.0 allows you to electronically coordinate all the typographical ingredients of a publication, editing and rearranging them at will, and finally printing what was seen on the screen to produce camera-ready work. The traditional practice by a publisher of producing a dummy (**MOCK UP**) of the proposed publication should still the followed, with the same decisions being made about page size, number of columns, size of alleys, heading fonts, subheading fonts, body text font, position of illustrations, whether to box or not, etc.

Preparing Text: Text is the crux of a publication. Prepare lengthy text in your word processor; enter shorter passages directly into the Page Maker text editor. Spell check all text and edit it for grammar and clarity before using it in a publication. There are four ways to bring text into your word processor: key it in, scan it in through an OCR (optical character reading) program, import it from other application programs, or bring it in via modem. You import word processing application program styles into Page Maker by beginning a paragraph with the name of the appropriate Page Maker style tag in angle brackets.

8.5 SELF-ASSESSMENT QUESTIONS (SAQs

Q. Write a detailed note on the Page Maker 5.0 version.

Q. Discuss the functioning of the Page Maker 5.0 version.

8.6 REFERENCES / SUGGESTED READING

o **Absolute Beginner's Guide to Computer Basics;** Michael Miller; 2007

o **Computers;** Anne Rooney; 2005

o **Mastering Microsoft Word;** Matthew Holtz; 1987

o **Mastering CorelDRAW;** S. Rimmer; 1997

o **How the Web was Born: The Story of the World Wide Web;** Robert Cailliau & James Gillies; 1997

o **The Internet: The Basics;** Jason Whittakar; 2002

o **How the Internet Works;** Preston Gralla; 1998

NOTES

NOTES