



VELS



INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)
PALLAVARAM - CHENNAI

DCMBA-17

Computer Applications for Business



MBA
ODL MODE
(Semester Pattern)

School of Management Studies and Commerce

Centre for Distance and Online Education

Vels Institute of Science, Technology and Advanced Studies (VISTAS)

Pallavaram, Chennai - 600117

**Vels Institute of Science, Technology
and Advanced Studies**

Centre for Distance and Online Education

**Master of Business Administration
(MBA)- ODL Mode
(Semester Pattern)**

**DCMBA-17: Computer Applications for
Business**

(4 Credits)

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FOREWORD



Dr. Ishari K Ganesh
Chancellor

Vels Institute of Science, Technology and Advanced Studies (VISTAS), deemed to be a university, was established in 2008 under section 3 of the Act of 1956 of the University Grants Commission, Government of India, New Delhi.

VISTAS has blossomed into a multi-disciplinary Institute offering more than 100 UG & PG Programmes, besides Doctoral Programmes, through 18 Schools and 46 Departments. All the Programmes have the approval of the relevant Statutory Regulating Authorities such as UGC, UGC-DEB, AICTE, PCI, BCI, NCTE and DGS.

The deemed to be University aims to provide innovative syllabi and industry-oriented courses, and hence, the revision of curricula is a continuous and ongoing process. The revision is initiated by the faculty depending on the requirement and approved by the Board of Studies of the concerned Department/School. The courses are under Choice Based Credit Systems that enable students to get adequate freedom in choosing subjects.

I am pleased to inform you that VISTAS has been rendering its services to society to democratize the opportunities of higher education for those who are in need through Open and Distance Learning (ODL) mode.

VISTAS ODL Programmes offered have been approved by the University Grants Commission (UGC) – Distance Education Bureau (DEB), New Delhi.

The curriculum and syllabi have been approved by the Board of Studies, Academic Council, and the Executive Committee of the VISTAS, and they are designed to help provide employment opportunities to the students.

The ODL Programme (B.Com., BBA and MBA) study material have been prepared in the Self Instructional Mode (SIM) format as per the UGC-DEB (ODL & OL) Regulations 2020. It is highly helpful to the students, faculties and other professionals. It gives me immense pleasure to bring out the ODL programme with a noble cause of enriching learners' knowledge. I extend my congratulations and appreciation to the Programme Coordinator and the entire team for bringing up the ODL Programme in an elegant manner.

At this juncture, I am glad to announce that the syllabus of this ODL Programme has been made available on our website, www.vistas.ac.in, for the benefit of the student fraternity and other knowledge seekers. I wish that this Self Learning Materials (SLM) would be a nice treatise to the academic community and everyone.

CHANCELLOR

FOREWORD



Dr.S.Sriman Narayanan
Vice-Chancellor

My Dear Students!

Open and Distance Learning (ODL) of VISTAS gives you the flexibility to acquire a University degree without the need to visit the campus often. VISTAS-CDOE involves the creation of an educational experience of qualitative value for the learner that is best suited to the needs outside the classroom. My wholehearted congratulations and delightful greetings to all those who have availed themselves of the wonderful leveraged opportunity of pursuing higher education through this Open and Distance Learning Programme.

Across the world, pursuing higher education through Open and Distance Learning Systems is on the rise. In India, distance education constitutes a considerable portion of the total enrollment in higher education, and innovative approaches and programmes are needed to improve it further, comparable to Western countries where close to 50% of students are enrolled in higher education through ODL systems.

Recent advancements in information and communications technologies, as well as digital teaching and e-learning, provide an opportunity for non-traditional learners who are at a disadvantage in the conventional system due to age, occupation, and social background to upgrade their skills.

VISTAS has a noble intent to take higher education closer to the oppressed, underprivileged women and the rural folk to whom higher education has remained a dream for a long time.

I assure you all that the Vels Institute of Science, Technology and Advanced Studies would extend all possible support to every registered student of this deemed to be university to pursue her/his education without any constraints. We will facilitate an excellent ambience for your pleasant learning and satisfy your learning needs through our professionally designed curriculum, providing Open Educational Resources, continuous mentoring and assessments by faculty members through interactive counselling sessions.

This university brings to reality the dreams of the great poet of modern times, Mahakavi Bharathi, who envisioned that all our citizens be offered education so that the globe grows and advances forever.

I hope that you achieve all your dreams, aspirations, and goals by associating yourself with our ODL System for never-ending continuous learning.

With warm regards,

VICE-CHANCELLOR

Course Introduction

The Course DC MBA-17: Computer Applications for Business has been divided into five Blocks. The main objective is to encourage to think the essential concepts necessary to make effective use of the computer and to understand what a computer can do, how it works, and how it can be used to create Documents using word processing and spreadsheet applications for personal and business use. Also to present a new concept using PowerPoint presentation.

Block-1: Introduction to Computer provides a basic understanding of the Computer Applications. Unit-1 describes the early history of Computer and Unit- 2 discusses Types of Computer, Unit- 3 deals with Functions of Computer and Unit -4 discusses the Applications and current trends for business related problems.

Block-2: Hardware and Software deals with Hardware and Software systems. Unit-5 discusses with Hardware system, Unit-6 details the Storage, Input and Output devices, Unit- 7 deals Operating systems and the Unit-8 elaborates Applications software and Internet.

Block-3: File Operations details Microsoft Word. Unit-9 discusses the MS-Word History, versions, Unit-10 details the Formatting, Editing, Paragraph alignment, Unit - 11 explains the Header and Footer, Insertion of Page number, and Unit-12 details the Inserting table, symbol and Print command.

Block-4: Microsoft Excel discusses MS-Excel. Unit-13 discusses History and versions of MS-Excel, Unit-14 details the File creation, Unit-15 explains Formatting, editing and organizing of Worksheet, Unit-16 deals with Formulas and Functions and the Unit -17 presents about creating charts.

Block-5: Microsoft PowerPoint explores the MS-PowerPoint. Unit-18 discusses the History and Version, the File creation, Slide Creation. Unit -19 deals with the Formatting and the Unit -20 explores the Editing, Adding Transitions and Animations.

DCMBA-17: Computer Application for Business

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Block-1: Introduction

Block-1: Introduction to Computer has been divided into four Units (Unit-1 to Unit-4).

Unit-1: History of Computer – Definition deals with basic understanding of the Computer Applications, Overview of Computer and History of Computer.

Unit-2: Types of Computers presents about the various Types of Computers, various Desktop Computer and Laptop.

Unit-3: Functions of computer explains about the **various** Functions of Computer, Computer Devices, Computer functionality

Unit-4: Application and Current Trends for Business Related Problems describes about Current systems, Business computer and Application and current trends for business related problem.

In all the units of Block -1: **Introduction to Computer**, the Check your progress, Glossary, Answers to Check your progress and Suggested Reading has been provided and the Learners are expected to attempt all the Check your progress as part of study.

Unit-1

History of Computer – Definition

STRUCTURE

Overview

Objectives

1.1. Introduction

1.2. Overview of Computer

1.3. History of computer

1.4. Summary

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of computer applications and central focus on complete operations of computer process along with workflow diagram. The basic details about computer thoughts and ideas are well detailed with examples and illustrations.

Objectives

After studying this unit, you should be able to:

- understand the evolution of computers;
- classify computers on the basis of purpose, size and technology;
- describe the various components of computers;
- explain how computers are useful in various areas;
- understand the advantages and disadvantages of computers;
- differentiate computers from smart phones.

1.1. Introduction

In the era of machines, computer is the greatest boon to the mankind. The thought came when people wanted a device which could help in calculating problems but now it has become a life savior to human beings and we cannot think of life without computers. Today the word “computer”

is not only confined to PC's but also includes laptops, tablets, smart phones, Electrocardiogram (ECG) machines, etc. This unit would help in understanding the origin and evolution of computers, its classification on the various bases, its components and its applications in today's world. The unit also makes the learner to know about certain advantages and disadvantages of computers. Fundamentals of Computers

1.2. Overview of Computers

A Computer is basically a programmable electronic device which accepts data, performs operations on the given data and presents the results and can also store the data or results as per the requirements. Computers are general purpose information machines that can perform a variety of tasks on data. These tasks are all related to the four basic computer operations i.e. to accept data (input), process the data, produce output, and store (storage) the results as needed.

These days computers do not only come in the form of personal computers (PC), but have taken various shapes. Computers are designed to do everything with available pool of information and are popularly used for controlling small and large machines which would have otherwise be controlled by human. Computers have made their presence in every field and they have their significance almost in every sphere. Computers have taken various forms in contemporary world. Almost everyone use a personal computer at their work space or in their home for performing tasks such as doing calculations, getting information, watching movies, formulating documents, organizing meetings, writing etc.

1.3. History of Computer

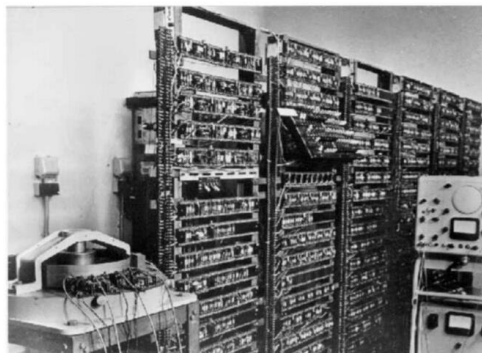
When introduced first early in 1940's, computers were very capacious electronic devices that needed bunches of people to handle and operate them. But with the passing of time and evolution of technology, computers of today are very astounding and have gone through a complete overhauling.

Computers of now are so tiny that they can fit on your desk, on your lap, or even in your pocket and they are now thousands of times more expeditious. However, there are six apparent generations of computers which are explained below. Every generation of computer is well-defined by a paramount technological development which changes necessarily how computers operate leading to more compressed, inexpensive, but more dynamic, effective and booming machines.



1) First Generation (1940-1956):

The first generation computers used vacuum tubes for circuitry and magnetic drums for memory. The size of first generation computers were very huge taking up the space of almost an entire room. They were very costly to operate and in addition used a large amount of electricity and used to produce lots of heat, which was often the cause of malfunction. These first generation computers relied on 'machine language' (which is the most fundamental programming language that can be understood by computers). These computers were used to solve only single problem at a time and it was very difficult to trace and correct the programming error, if any. The examples of first generation computers are Universal Automatic Computer (UNIVAC) and Electronic Numerical Integrator and Computer (ENIAC).



First Generation 1946-1959

2) Second Generation (1956-1963):

The second generation of computers was based on the transistors which substituted the vacuum tubes. The transistor was superior to the vacuum tubes in the sense it made computers smaller, faster, cheaper and more energy efficient. It didn't require a complete room anymore. However, even though it was a Fundamentals of Computers 8 improvement over

the vacuum tubes to the transistor still generated a great deal of heat which sometimes subjected the computer to damage its internal sensitive parts.

This generation of computers used assembly language for programming. In this period, higher level programming language like Common Business-oriented Language (COBOL), Formula Translation (FORTRAN), and Algorithmic Language (ALGOL), Python, were developed.



**Second Generation
1959-1965**

3) Third Generation (1964-1971):

Third generation of computers brought a significant change in the way of computing. This generation of computers was based on the use of integrated circuits, which drastically increased speed and efficiency of computers. As a result, computer became smaller in size as more components were squeezed onto the single chip.

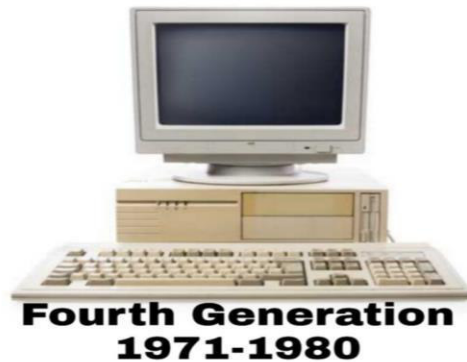
These were the first computers where users interacted using keyboards and monitors which are interfaced with an Operating System (OS), a consequential leap up from the punch cards and printouts. This facilitates these machines to run various applications at once utilizing a central program which functioned to monitor memory. Examples of this generation of computers are IBM-360 and CDC-6400.



**Third Generation
1965-1971**

4) Fourth Generation (1972-2010):

The fourth generation of computers was based on the use of microprocessors, a single silicon chip on which thousands of integrated circuits were built. The use of microprocessors considerably reduced the size of computers now they can even be fit in the palm of hand. The personal computers and laptop all made use of microprocessors. For the first time in 1981, IBM introduced computers for the home users and in 1984, Macintosh was introduced by Apple. Fourth generation computers could be link together to form a network which eventually led to the expansion, birth and rapid evolution of the Internet. Other primary advances during this period have been the Graphical User Interface (GUI), the mouse and advances in laptop capability etc.



5) Fifth Generation (2010 -2020):

The fifth generation of computers began with major innovations in computer architecture like- parallel processing, intelligent programming, application of artificial intelligence, knowledge-based system etc. The essence of fifth generation is to utilize these technologies to ultimately engender machines which can proceed and acknowledge natural language, and have efficiency to determine and organize them. Movies like Terminator series (1, 2 and 3) and robots are based on the concept of fifth generation computers. Fifth generation based robots have been developed which are enormously being used in medical science and research.



Fifth Generation 1980- Present

6) Sixth Generation (2020 onwards):

The sixth generation of computers is based on the nanotechnology. This generation of computers can be defined as the era of intelligent computer, based on artificial neural networks or “artificial brains”. Artificial Intelligence (AI) or artificial brains is a concept in programming which enables the devices to think and take actions on their own. These computers have the ability to learn via a variety of advanced algorithms. The generation also introduced voice recognition, which enables the computers to take dictations and recognize words. The use of nanotechnology is a characteristic of sixth generation computers.



1.4. Summary

A Computer is basically a programmable electronic device which accepts data, performs operations on the given data and presents the results and can also store the data or results as per the requirements. Computers are general purpose information machines that can perform a variety of tasks on data.

Let Us Sum Up

In this unit you have learned the followings:

- Computer is the main aspect of working for preparing documentation using Ms-word, creating excel sheet for using some accounts documentation.
- Computer occupies such an important place in the modern world that the creation, storage and reuse of the people and the destiny of the country are very much influenced by it.

Check your Progress

1. Computer is basically _____
2. The sixth generation of computers is based on the _____.
3. Computer is _____

Glossary

Computer : The combination of hardware and software.

Operating system: The kernel of process

Input: used to feed the data

Output: To display the result or value

Generation: Based on the technology development and growth of computer versions and operations.

Answer to Check your Progress

1. programmable electronic device
2. nanotechnology
3. The combination of hardware and software

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-2

Types of Computers

STRUCTURE

Overview
Objectives
2.1.Types of computer
2.2.Desk top computer
2.3.Laptop
2.4.Summary
2.5.Keywords
Let us Sum up
Check your progress
Glossary
Answer to check your process
Suggested Reading

Overview

In this unit the learners will learn and study about the Types of computer, Desk top computer and Laptop.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose and scope of Computer speed and size
- Identify the roles, skills and functions of computer generations
- understand the Type of computers;
- describe the various types of computers;
- explain how computers are useful in various areas;
- understand the advantages and disadvantages of computers; and
- differentiate computers like laptop and desktop.

2.1. Type of Computer

1) Micro Computer:

Micro computers are the smallest computer system. They are mostly single user general purpose computers. They are relatively small in size and inexpensive computer with a microprocessor as its CPU. Their speed as in comparison to mainframe or supercomputer is low and their size

range from calculator to desktop. These computers are mainly used for computing purpose and mostly used in educational institutions, home and offices. Examples of micro computers are desktop PCs, Laptop, notebook, personal digital assistance, smart phones, tablets, smart watches etc.



2) Mini Computers:

Mini computers are larger in size and are suitable for a small business or for a department in a large organization to be used as servers which support hundreds of users at a time in file sharing, printer sharing and storing central information. They were actually designed for control, instrumentation, human interaction, and communication switching and later they became very popular for personal use with evolution. These computers possess greater memory and are capable of handling input output devices. Examples of mini computers are Laptop, PC etc.



3) Mainframe Computers:

Mainframe computers are popularly known as big iron, they are very big in size and very expensive. These computers are capable of supporting thousands of users at a time and have massive data storage capacity. These computers are basically used by big organizations such as banks, E-commerce portals, insurance companies, railways, airlines etc. for bulk

data processing such as statistics, census data processing, transaction processing and are widely used as the servers as these systems has a higher processing capability as compared to the other classes of computers.

Mainframe Computers



4) Super Computers:

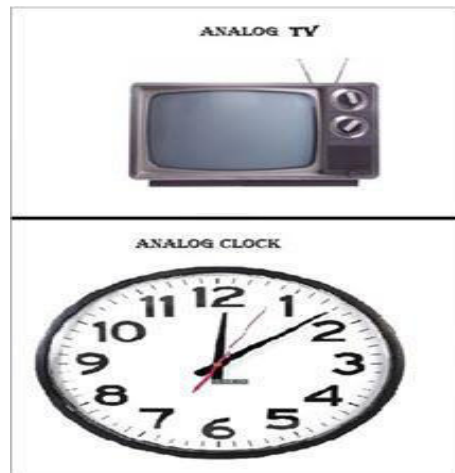
A super computer is a computer with a high level of performance; they are most powerful and very expensive. Super computers are at the apex of computing system as they have ability to perform billions of instructions per second. Super computers play a very vital role in the field of computation, and are utilized for performing intensive computational tasks in numerous fields such as quantum mechanics, weather forecasting, climate research, oil and gas exploration, molecular modeling, and physical simulations etc. These computers are very costly and are treated as national resources. Examples of super computers are Parallel Machines (PARAM), Jaguar, Roadrunner, etc. On the Basis of Data Handling or Technology Used.



1) Analog Computer:

Analog computer is a type of computer which uses continuously-changeable aspects of physical fact such as electrical, mechanical, or hydraulic quantities to model the problem being solved. Anything that is variable with respect to time and continuous can be claimed as analog

just like an analog clock measures time by means of the distance travelled for the spokes of the clock around the circular dial.



2) Digital Computer:

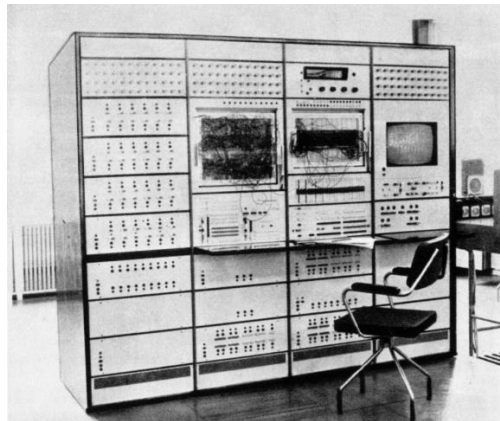
Digital computers take input data in form of numbers and perform arithmetic and logical operations onto it to get the results. These computers are of high speed and very accurate. Digital computers count and answer the questions by the answer of how many. It can be used for performing mathematical calculations, organizing and analyzing data, controlling industrial and other processes, and to simulate dynamic systems such as global weather patterns. It gives continuous output but users get the output only when the computations are completed. Examples of digital computers are desktops, notebooks, work stations, smart phones etc.



3) Hybrid Computer:

A hybrid computer is a digital computer that accepts analog signals, converts them to digital and processes them in digital form. These computers incorporate the technology of both analog and digital computers. These computers store and process analog signals which have been converted into discrete numbers. Analog-to-digital converters are used to convert analog signals into digital signals. These computers

are used in radars. For example, in central national defense and passenger flight radar system.



2.2. Desk top Computer

A desktop computer is a computer that fits on or under a desk. They utilize peripheral devices for interaction, such as a keyboard and mouse for input, and display devices like a monitor, projector, or television. Desktop computers can have a horizontal or vertical (tower) form factor, or be combined with a monitor to create an All-in-One computer. Unlike a laptop, which is portable, desktop computers are generally made to stay at one location.

Below is a picture of the main parts (components) that help make up a computer. In the picture, you can see a desktop computer, flat-panel display, speakers, keyboard, and mouse. We've also labeled each of the input devices and output devices.



2.3 Laptop Computer

A Laptop computer (also called portable computer or notebook computer in English) (Other terms, such as ultra-book or note book, refer to specific types of laptop) is designed with portability in mind. It was developed in the late 1980s. It is briefcase style with a foldout screen with

a clam shell form factor, suitable for mobile use and with a miniature keyboard. It is small enough to use in your lap. The laptop is battery or AC-powered personal computer that should be charged via a plug and socket, and when it runs out of power, it must be recharged regularly. Laptop computer originally monochrome CRT-based, The components of a laptop are built-in monitor; keyboard, touch-pad (which replaces the mouse), USB, graphics card and sound cards as well as high-capacity batteries that are made to keep the laptop power for a long period of time.

The laptops are more expensive because the technology to be more compact and they are more difficult to design and manufacture. If you have a limited space, it is worth considering a “portable” computer. They give you exactly the same comfort and performance of a desktop computer, but they take up less space.



2.4. Summary

The laptops are more expensive because the technology to be more compact and they are more difficult to design and manufacture.

2.5. Keywords.

Laptops, Desktops, Portable, Analog and Digital

Let us Sum Up

In this unit you have learned the followings:

- Computer is the main aspect of working for people and different types of computer are fixed and portable based on the size and operating methods.
- Computer occupies such an important place in the modern world that is divided in various size and operations. Computer is used to creation, storage and reuse of the documents and files.

Check your Progress

1. Computer is fixed in one location is called _____
2. Laptop is _____ types of computer
3. They are _____ types of computer based size
4. _____ is used to store documents.

Glossary

- Laptop Computer** : Is a portable device.
- Memory** : it is used to store data
- Input** : used to feed the data
- Output** : To display the result or value

Answer to Check your progress

1. Personal Computer
2. Handhold
3. Three
4. Memory

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit -3

Function of Computer

STRUCTURE

Overview

Objectives

3.1.Computer Devices

3.2.Functions of Computer

3.3.Computer functionality

3.4.Summary

3.5.Keywords

3.6.Terminal Questions

Let us Sum Up

Check your Progress

Glossary

Answer to Check your Progress

Overview

In this unit the learners will learn and study about the Computer Devices, Functions of computer and the Computer functionality.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To understand the computer functionality and different functions.
-

3.1. Computer devices

Components of a Computer System:

Hardware & Software Every computer is composed of two basic components called, hardware and software. Hardware includes the tangible parts of the computer which either can be seen or touched, for example, CPU, keyboard, mouse, monitor, LCD screen and printer, whereas, the software are the components which activates the physical parts. Software consists of features that are responsible for directing the tasks to the hardware. Software can be divided into other programs and data. As compared to software, hardware is a physical entity. Both hardware and software are interconnected, without software, the

hardware cannot function. However, without the creation of hardware to perform tasks directed by software via the central processing unit, software would be useless below mentioned figures can gives a clear glimpse about the hardwares.



Fig. : Desktop Vs. Laptop

A detailed explanation on Hardware and Software is given below:

Hardware:

Hardware is basically the physical element of a computer. It is also called as the machinery or the equipment of the computer. However, most of a computer's hardware cannot be seen; in other words, it is not an external element of the computer. A computer's hardware is consisted of various different parts, but the most vital of all these is the motherboard. The motherboard is made up of even more parts capable to power and control the computer. Hardware is limited to specifically designed tasks that are, taken independently, are very simple. On the other hand, Software implements algorithms (problem solutions) that allow the computer to complete much more complex tasks.

Software:

Software is known as programs or apps, comprising of all the instructions that direct the hardware in performing tasks. These instructions come from a software developer in the form and are accepted by the platform (operating system + CPU) that they are based on. Software is capable enough to perform numerous tasks, compared to hardware that can only perform mechanical tasks they are designed for. Software provides the means for accomplishing many different tasks with the same basic hardware.

3.2. Functions of Computer

The four functions of a computer actually explain the core reasons why it was built. They include:

- Data input
- Data processing.
- Information output.
- Data and information storage.

3.3. Computer Functionality

1. Data Input

Every computer is designed with data input as a first function, an activity which is accomplished via input devices. Data entry is done manually, automatically or both. Manual input is done via add-on peripherals like the keyboard, mouse and stylus. Input can also be accomplished via vocal dictation applications and body gestures peripherals like Kinect and biometric devices. Elsewhere, data input is also done using secondary storage media and networking interfaces.

Application software used for this purpose will also dictate what data is entered. Word processing software is designed to input basic alphanumerical data, while a photo editing application is used to input and manipulate images. This data may be entered into a database, spreadsheet or other forms of a computerized work area. Automated applications and robotics can also be used to intelligently feed data into the computer on station or remotely. As an example, tallying of electoral process can be accomplished remotely and automatically.



2. Data Processing

Data processing is the core function of a computer. Processing involves manipulation of raw data into before converting it into meaningful information. Usually, data is in raw form, and will thus undergo processing before dissemination for user consumption.

The 'brain' of the computer where data is processed is referred to as the microprocessor. It is also commonly known as the Central Processing Unit (CPU) or Accelerated Processing Unit (APU).

The processing chips in modern personal computing devices continue to evolve and outperform its predecessors. One particular evolution is the merger of microprocessor and graphics processing unit (GPU) into what is now known as accelerated processing unit. The merger allows for the integration of powerful graphics processing abilities inside the traditional arithmetic and logical computations of the processor.

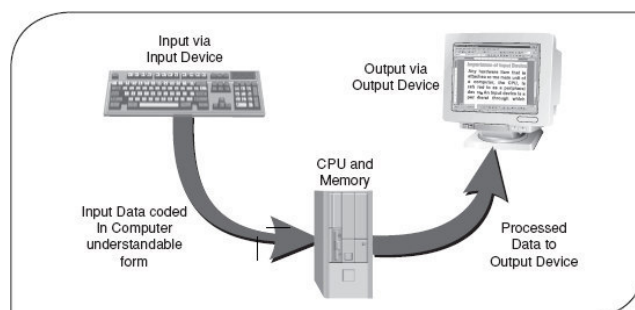


3. Information Output

When raw data has been manipulated by the microprocessor, the outcome is meant to be disseminated for useful purposes. The output is thus referred to as information and is beneficial to the computer user.

Processed data or information can be,

- viewed as alphanumeric, images and video via a display hardware
- listened to as audio files by use of a speaker
- printed as hard copy output onto paper
- printed as 3D models



4. Data and Information Storage

The fourth and equally very important function of a computer is data and information storage. After sleepless nights of video and animation creation

and editing, the user wants to have the finished product stored for future dissemination and additional editing.

A computer can store information internally and externally. The hard disk drive (HDD) and/or solid-state disk drive (SSD) are internal storage devices and serve to protect and house all data and information on a computer. In bigger systems, the RAID system is used. Multiple disk drives operate simultaneously to ensure data and information integrity.

External storage is achieved through accessories that attach externally to the computer. They include external drives and optical disks.

3.4. Summary

A Computer is basically a programmable electronic device which accepts data, performs operations on the given data and presents the results and can store the data or results as needed.

3.5. Keywords

Data, Program, Process, Input and Output

Let us Sum Up

In this unit you have learned the followings:

- Data is interaction between user and computer
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. Keyboard is used to _____
2. Monitor is _____ in computer
3. The input devices are _____
4. _____ is known as output devices.

Glossary

Computer	:	The combination of hardware and software.
Data	:	user interaction to computer based on data.
Input	:	used to feed the data
Output	:	To display the result or value

Answer to Check your Progress

1. Input device
 2. Display result
 3. Key Board and Mouse
 4. Printer
-

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business , 1st Edition , SBPD Publications.

Unit-4

Application and Current Trends for Business Related Problems

STURCTURE

Overview

Objectives

4.1. Current systems

4.2. Business computer

4.3. Application and current trends for business related problem

4.4. Summary

4.5. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the Current systems , Business computer and the Application and current trends for business related problems.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To understand the application and current trends for business problem
-

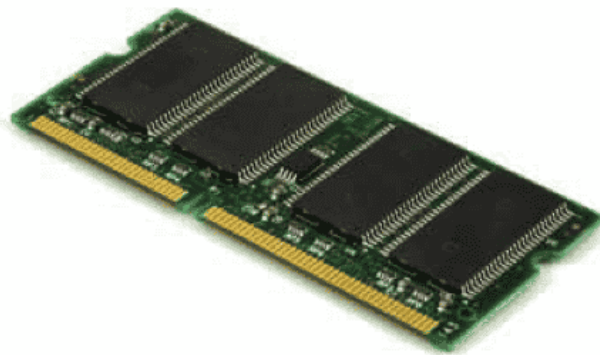
4.1. Current Systems.

Bus: A set of wires used to transmit data, addresses, or control signals between directly connected components of a computer. They are called data, address, and control busses, respectively.

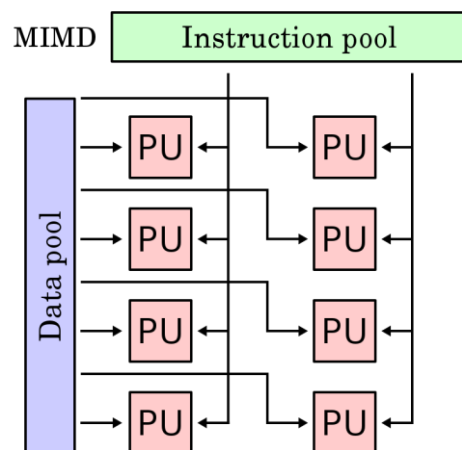
CPU: Central Processing Unit. The words CPU and processor are used interchangeably in this article. Distributed processing: running a single program on computers of a network.



DRAM: Dynamic RAM. Its contents must be refreshed very often to avoid the loss of data. Massively-parallel computer: a parallel computer containing hundreds or thousands of (micro) processors.



MIMD: Multiple-Instruction streams, Multiple-Data streams. Multicomputer: a parallel computer containing many processors which are interconnected via a static point-to-point (i.e., processor-to-processor) physical network.



Multiprocessor: a parallel computer containing many processors which can exchange information through a shared memory. They access this memory via a dynamic network. The exact interconnection scheme is determined each time by the application program.

Parallel computer: a computer that contains many processors.

RAM: Random-Access Memory. They can be read and written at run time by programs.

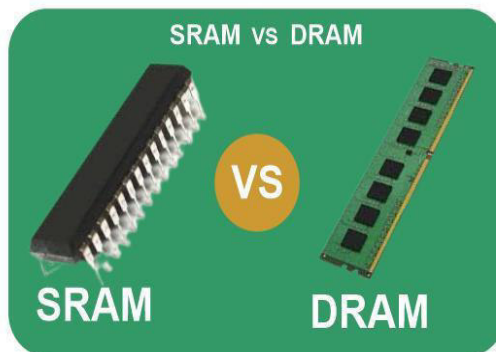


ROM: Read-Only Memory. They cannot be written by programs. Their contents can be modified only by plugging them into specialized hardware programmers.



SIMD: Single-Instruction stream, Multiple-Data streams.

SRAM: Static RAM that is much faster than DRAM.



Supercomputer: a computer capable of delivering performance many orders of magnitude larger than that of any single-processor computer. This term is currently associated with massively-parallel computers and vector supercomputers.

System boot up code: The part of the operating system that initializes the computer. Tri-state gate: a digital circuit that has three possible output states, namely 0, 1, and high-impedance. In the high-impedance state, the output is disabled and seems to be "floating" (that is, it does not affect

and is not affected by any other signal applied to the corresponding terminal).

Vector supercomputer: a computer capable of delivering performance for array (i.e., vector) operations many orders of magnitude larger than that of any conventional computer. It contains specialized parallel units for vector operations.

4.2. Business computer

The most common type of business computer is a PC (personal computer). PCs are made by different companies but all use the same underlying technology. They usually run Microsoft Windows and are the type of computer most people are familiar with.

The main alternative is an Apple Mac. Macs are usually more expensive than comparable PCs and have traditionally been used in creative industries.

Macs can be popular with employees and some companies use a mix of PCs and Macs, depending on staff preferences and roles.

Business computer systems are available as:

- Desktops, consisting of a base unit, monitor, keyboard and mouse. They are designed to be set up and used in one place.
- 'All-in-ones', as above, but with the monitor also housing the computer itself (Apple iMacs are the most common example). Again, designed to be set up and used in one place.
- Laptops, portable computers that can be used on the move.

Some of the applications of computers in business organizations are explained below:

1) Communication: Computers play a very important role in business organisations to maintain a smooth flow of information and communication between different parties and stakeholders. Business can use various methods of communication such as email, live chat tools, video or phone conferencing, social networking, web conferencing etc. It saves times and also improves the functioning of the organisation. With such advance tools, it also becomes easy for the business to offer customer support to its clients in a timely and efficient manner.



2) Marketing: Organizations can widely use computers for marketing as most of the marketing is done online via social media, blogging, website development, advertising, e-newsletter etc. IT developers can professionally create a website by using various enticing graphics and content with different forms of media, such as text, images, and videos to make the campaign more attractive and lucid for the audience. By using Search Engine Optimization (SEO) and Web Analytics, the website would appear prominently in Google's search results, which then attracts traffic and ultimately enables the business to sell those products to website visitors.



3) Accounting: Computers can also help organizations in sorting its large financial data in order to obtain their large and small scale financial positions just by few clicks. Computers are also useful for performing various tasks like invoicing clients, maintaining data about debtors and creditors, calculating payroll, calculating and filing tax forms etc. With the computer, accountants can now focus on the higher level picture of a business's finances, leaving the lower level stuff to the machines.



4) Storage: Businesses can store enormous data on computers. They don't need huge cabinets for storing data now. With computers and server, organizations are capable of storing and sorting billions of files and enable them to access at any time. Digital storage is much larger and more efficient and secure while compared with the physical storage, as it is more difficult to lose or steal files from a well-protected database which is one of the main benefits of the computer.

5) Educational Purposes: With the access of internet on the computers, organizations can reach the pool of world's information which can be used efficiently to educate its employees such as about the company Fundamentals of Computers 24 policies, software use, as well as standard procedure and safety. Instead of hiring teachers' employees can be educated online. Live webinar, conferences and question and answer sessions can also be conducted. Employees can learn through various media, such as videos, text, etc. which enables them to better understand the subject matter.

6) Research: Computers make business organisations capable of doing a variety of functions, including research about the competition, as well as knowing about the taste and preferences of its customers. With modern data-mining techniques, a business can acquire insightful information about its customers and competition from all kinds of places, including forums, search engines, industry-specific websites and even from social networks. By conducting online surveys, business can know about the public opinions or while launching any new products and public reactions can also be known by reviewing customers review on different sites.

4.3 Application and current trends for business related problem

Business Trends Table of Contents

1. The On-Demand Economy Shift
2. Implementation of Contactless Payment Options
3. Ecommerce Dominance and Social Commerce Growth
4. Increased Collaboration with Influencers

5. Investments in Retail Technology
6. Remote Work on the Rise
7. More Smart Offices
8. Better Focus on Employee Happiness
9. Improved Personalized Omni channel Experiences
10. The 5G Network and AI

4.4 Summary

Desktop computer systems are sometimes cheaper than a laptop of equivalent specification, but laptops offer the added benefit of portability.

4.5. Keywords

Bus, RAM, ROM, Business Computer and Business Trends

4.6 Terminal Questions

1. What is business system?
2. What are the use of business system?
3. Name any five of business system.
4. Write the use of desktop computer.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. The another name of source code is _____
2. Program is set of _____
3. The task to completed is called _____
4. _____ is used to construct program.

Glossary

Program : The set of instruction is called program.

Data : used to construct program

Input : used to raw material

Output : To display the result or value

Answer to Check your Progress

1. Program

2. Instruction

3. Process

4. Software

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.

2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.

3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Block-2: Introduction

Block-2: Hardware and Software has been divided into four Units (Unit-5 to Unit-8).

Unit-5: Hardware system deals with Introduction to Hardware, Hardware systems and the Types of Hardware.

Unit-6: Input, storage and output devices explains about Input and output devices, Storage devices, Internal and External parts of Hardware and software.

Unit-7: System software: Operating system describes about System software, Introduction to Operating systems, Types of operating systems

Unit-8: Application Software presents about Introduction to software, Application software and Definition of Internet

In all the units of Block -2: **Hardware and Software**, the Check your progress, Glossary, Answers to Check your progress and Suggested Reading has been provided and the Learners are expected to attempt all the Check your progress as part of study.

Unit-5

Hardware System Types

STURCTURE

Overview

Objectives

5.1. Introduction to Hardware

5.2. Hardware systems

5.3. Types of Hardware

5.4. Summary

5.5. Keywords

Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic Introduction to Hardware, the Hardware systems and Types of Hardware.

5.0 Objectives

After Completion of this unit you will able;

- To understand the hardware system
- To learn about type of hardware and uses

5.1. Introduction to Hardware

Hardware is basically the physical element of a computer. It is also called as the machinery or the equipment of the computer. However, most of a computer's hardware cannot be seen; in other words, it is not an external element of the computer. A computer's hardware is consisted of various different parts, but the most vital of all these is the motherboard. The motherboard is made up of even more parts capable to power and control the computer. Hardware is limited to specifically designed tasks that are, taken independently, are very simple. On the other hand, Software implements algorithms (problem solutions) that allow the computer to complete much more complex tasks.

5.2. Hardware systems

System hardware is a general term for various physical components of a computer system. It includes all the parts inside the computer case such as the CPU, hard disk drive, graphic cards, sound cards, RAM, power supply unit, motherboard, etc. Computer hardware is what you can physically touch.

Those who work in related fields use a strong knowledge of current and emerging devices, circuits, algorithms, compilers, and applications to build hardware components (e.g., microprocessors, GPUs, memories, ASICs, FPGAs). Then, they integrate them into systems that meet needs at an acceptable cost. Professionals in this area also develop tools and techniques for automating and testing the design and integration of hardware.

Inside a Computer



5.3. Types of Hardware

- RAM. RAM (Random Access Memory) is a type of computer hardware that is used to store the information and then process that information. ...
- Hard disk. The hard disk is another type of computer hardware that is used to store the data in it. ...
- Monitor. ...
- CPU. ...
- Mouse. ...
- Keyboard. ...
- Printer.

Hardware Components

Introduction

Hardware is the most visible part of any information system: the equipment such as computers, scanners and printers that is used to capture data, transform it and present it to the user as output. Although we will focus mainly on the Personal Computer (PC) and the peripheral devices that are commonly used with it, the same principles apply to the complete range of computers:



- Supercomputers, a term used to denote the fastest computing engines available at any given time, which are used for running exceptionally demanding scientific applications.
- Mainframe computers, which provide high-capacity processing and data storage facilities to hundreds or even thousands of users operating from (dumb) terminals.
- Servers, which have large data storage capacities enabling users to share files and application software, although processing will typically occur on the user's own machine.
- Workstations, which provide high-level performance for individual users in computationally intensive fields such as engineering.
- Personal computers (including laptop/notebook computers) have a connected monitor, keyboard and CPU, and have developed into a convenient and flexible business tool capable of operating independently or as part of an organizational network.
- Mobile devices such as personal digital assistants or the latest generation of cellular telephones, offer maximum portability plus wireless connection to the internet, although they do not offer the full functionality of a PC.

And we are already moving into the age of wearable computers for medical or security applications, embedded computers in appliances ranging from motor cars to washing machines, and the smart card which will provide identification, banking facilities, medical records and more!

Hardware - Input devices

Data may enter an information system in a variety of different ways, and the input device that is most appropriate will usually depend on the type of data being entered into the system, how frequently this is done, and who is responsible for the activity. For example, it would be more efficient to scan a page of typed text into an information system rather than retyping it, but if this happens very seldom, and if typing staff are readily available, then the cost of the scanner might not be justified. However, all of the input devices described in this chapter have at least one thing in common: the ability to translate non-digital data types such as text, sound or graphics into digital (i.e. binary) format for processing by a computer.

The keyboard

A lot of input still happens by means of a keyboard. Usually, the information that is entered by means of a keyboard is displayed on the monitor. The layout of most keyboards is similar to that of the original typewriter on which it was modelled. Ironically, this “QWERTY” keyboard layout was originally designed to slow the operator down, so that the keys of the typewriter would not get stuck against each other. This layout now works counter-productively since a computer can process keyboard input many times faster than even the fastest typist can manage.



A number of attempts have been made to design alternative layouts by rearranging the keys (the Dvorak keyboard) or by reducing the number of keys. None of these alternative designs has really caught on. Special keyboards have also been designed for countries that use a non-Roman alphabet, and also for disabled people.

Pointing devices



The now ubiquitous electronic mouse is an essential input device for use with any graphical user interface. It consists of a plastic moulded housing, designed to fit snugly in the palm of the hand, with a small ball at its bottom. Moving the mouse across a flat surface will translate the movements into a rolling action of the ball. This is translated into electronic signals that direct the corresponding movement of a cursor on the computer monitor. Buttons on the mouse can then be used to select icons or menu items, or the cursor can be used to trace drawings on the screen.

The less popular trackball operates exactly like an “upside-down” mouse except that the ball is much larger and, instead of the mouse being moved over a surface, the user manipulates the ball directly. Since the trackball can be built into the side of the keyboard, it obviates the need for a free surface area and is therefore handy in situations where desktop surface area is at a premium or not available. Originally popular in educational laboratory settings and for laptop computers, trackballs are now mainly confined to exhibition displays and other public terminals.



Touch-screens are computer monitors that incorporate sensors on the screen panel itself or its sides. The user can indicate or select an area or location on the screen by pressing a finger onto the monitor. Light and touch pens work on a similar principle, except that a stylus is used, allowing for much finer control. Touch pens are more commonly used with handheld computers such as personal organizers or digital assistants. They have a pen-based interface whereby a stylus (a pen without ink) is used on the small touch-sensitive screen of the handheld

computer, mainly by means of ticking off pre-defined options, although the fancier models support data entry either by means of a stylized alphabet, which resembles a type of shorthand, or some other more sophisticated handwriting recognition interface.

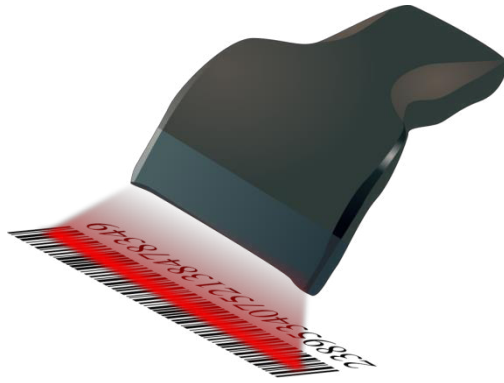
Digitizer tablets also use a pressure sensitive area with a stylus. This can be used to trace drawings. A similar conceptual approach is used for the touch pad that can be found on the majority of new notebook computers, replacing the more awkward joystick or trackball. The user controls the cursor by moving a finger across a fairly small rectangular touch-sensitive area below the keyboard, usually about 5 cm by 7 cm.



Optical scanners and readers

There are a number of different optical scanner technologies on the market.

- Optical Scanners use light-emitting devices to illuminate the printing on paper. Depending on how much light is reflected, a light-sensor determines the position and darkness (or color) of the markings on the paper. Special-purpose optical scanners are in use by postal services to read and / interpret hand-written postal codes. General-purpose scanners are used with personal computers to scan in images or text. These vary from handheld devices (see picture) to flatbed scanners which feed input documents one sheet at a time. A common use of optical scanners is the scanning of black-and-white or color images and pictures. When scanning text, it is necessary to load additional optical character recognition (OCR) software that converts the scanned raster-image of the text into the equivalent character symbols, so that they can be edited using word processing software.



- Barcode scanners detect sequences of vertical lines of different widths, the ubiquitous barcode as found also on the back of this book. These scanners have become very popular with retailers due to the fact that all pre-packaged products are now required to have a product bar code on their packaging, following the standard laid down by the South African Article Numbering Association (SAANA). Libraries and video shops now also commonly use bar code scanners. They are more generally used for tracking and routing large numbers of physical items such as for asset inventory purposes in many larger organizations, postal items by the postal services and courier services, or for luggage handling by airlines.



- Optical mark readers are capable of reading dark marks on specially designed forms. The red multiple choice answer sheets in use at many educational and testing institutions are a good example.



Other input devices

A magnetic card reader reads the magnetized stripe on the back of plastic credit-card size cards. These cards need to be pre-recorded following certain standards. Although the cards can hold only a tiny amount of information, they are very popular for access (door) control and financial transactions (ATMs and point-of-sale terminals).

Magnetic ink character recognition (MICR) uses a special ink (containing magnetizable elements) and a distinct font type. It is used mainly in the banking sector for the processing of cheques.



Touch-tone devices can use a voice telephone to contact computer-based switchboards or enter information directly into remote computers. Many corporate telephone help-lines rely on the customer pressing the touch-tone telephone buttons to route his/her call to the correct operator by selecting through a menu of possible options. South African banks also enable their clients to perform a number of banking transactions via telephone.



Digital cameras allow you to make pictures of physical objects directly in a digital, i.e. computer-readable, format. Relatively low-cost digital still picture cameras are now available that capture images directly on electronic disk or RAM media instead of the traditional film. Apart from being very compact, most of these digital cameras can also interface

directly with personal computers and are thus becoming a popular tool to capture pictures for e-mailing or loading on the world-wide Web.



Biometric devices are used to verify personal identity based on fingerprints, iris or retinal scanning, hand geometry, facial characteristics etc. A scanning device is used to capture key measurements and compare them against a database of previously stored information. This type of authentication is becoming increasingly important in the control of physical access.



Finally, voice input devices are coming of age. Voice-recognition has recently made a strong entry into the market with the availability of low-cost systems that work surprisingly well with today's personal computers. These systems allow for voice control of most standard applications (including the operating system). With voice control, the computer recognizes a very limited number (50 or less) of frequently used, programmable system commands ("save", "exit", "print"...) from a variety of users. In fact, these systems are not only used for the interface of computer programs; they are also slowly making an appearance in consumer appliances, novelty items and even motor cars.



Much more difficult to achieve than voice control, is true voice dictation used to dictate e.g. a letter to your word processor. The difficulty is that the computer must not only distinguish between many tens of thousands of possible words, but it must also recognize the almost unnoticeable breaks in between words, different accents and intonations. Therefore, voice dictation typically requires a user to train the voice recognition software by reading standard texts aloud. Nevertheless, for personal purposes and slow typists, voice recognition is rapidly becoming a viable alternative to the keyboard.

5.4 .Summary

System hardware is a general term for various physical components of a computer system.

It includes all the parts inside the computer case such as the CPU, hard disk drive, graphic cards, sound cards, RAM, power supply unit, motherboard, etc.

5.5. Keywords

Hardware, Software, CPU, General and systems.

5.6 Terminal Questions

1. Write the use of hardware device.
2. Write any five hardware device.
3. Difference between hardware and software.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. The software means _____
2. Hardware example are _____
3. Write some name of software _____
4. Printer is _____ device.

Glossary

Software	:	The set of program execution to complete task
Hardware	:	Hard metals and devices are hardware
Program	:	The set of instruction is called program.
Data	:	used to construct program

Answer to Check your Progress

1. Execute the program
2. CPU and Monitor
3. C,C++
4. Output

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal , Dr. Sandeep Srivastava(2022), Computer Applications in Business 1st Edition , SBPD Publications.

Unit-6

Input, Storage and Output Devices

STURCTURE

Overview

Objectives

6.1.Input and output devices

6.2.Storage devices

6.3.Internal & External parts of Hardware and software

6.4.Summary

6.5.Keywords

6.6.Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the Input and output devices Storage devices and Internal & External parts of Hardware and software.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations
 - To understand input output devices
 - To understand storage devices and types
 - To learn about Internal and external parts of hardware and software
-

6.1. Input and output devices

Input devices:

There are various input devices available like Microphone, Joystick, Keyboard, Pointing device, Image Scanner, Graphics tablet, and more.

1. Keyboard

- A simple device comprising keys and each key denotes either an alphabet, number or number commands which can be given to a computer for various actions to be performed
- It has a modified version of typewriter keys
- The keyboard is an essential input device and computer and laptops both use keyboards to give commands to the computer

2. Mouse

- It is also known as a pointing device
- Using mouse we can directly click on the various icons present on the system and open up various files and programs
- A mouse comprises 3 buttons on the top and one trackball at the bottom which helps in selecting and moving the mouse around, respectively
- In case of laptops, the touchpad is given as a replacement of the mouse which helps in the movement of the mouse pointer

3. Joy Stick

- It is a device which comprises a stick which is attached at an angle to the base so that it can be moved and controlled
- Mostly used to control the movement in video games
- Apart from a computer system, a joystick is also used in the cockpit of an aeroplane, wheelchairs, cranes, trucks, etc. to operate them well



4. Light Pen

- It is a wand-like looking device which can directly be moved over the device's screen
- It is light-sensitive
- Used in conjunction with computer's cathode ray tube



5. Microphone

- Using a microphone, sound can be stored in a device in its digital form
- It converts sound into an electrical signal
- To record or reproduce a sound created using a microphone, it needs to be connected with an amplifier



6. Scanner

- This device can scan images or text and convert it into a digital signal
- When we place any piece of a document on a scanner, it converts it into a digital signal and displays it on the computer screen



7. Barcode Reader

- It is a kind of an optical scanner
- It can read bar codes
- A source of light is passed through a bar code, and its aspects and details are displayed on the screen

Output devices:

There are several output devices available such as Speakers, Printers, Plotters, Projector, Monitor and more.

1. Monitor

- The device which displays all the icons, text, images, etc. over a screen is called the Monitor
- When we ask the computer to perform an action, the result of that action is displayed on the monitor
- Various types of monitors have also been developed over the years



2. Printer

- A device which makes a copy of the pictorial or textual content, usually over a paper is called a printer
- For example, an author types the entire book on his/her computer and later gets a print out of it, which is in the form of paper and is later published
- Multiple types of printers are also available in the market, which can serve different purposes



3. Speakers

- A device through which we can listen to a sound as an outcome of what we command a computer to do is called a speaker

- Speakers are attached with a computer system and also are a hardware device which can be attached separately
- With the advancement in technology, speakers are now available which are wireless and can be connected using BlueTooth or other applications



4. Projector

- An optical device which presents an image or moving images onto a projection screen is called a projector
- Most commonly these projectors are used in auditoriums and movie theatres for the display of the videos or lighting
- If a projector is connected to a computer, then the image/video displayed on the screen is the same as the one displayed on the computer screen



5. Headphones

- They perform the same function as a speaker, the only difference is the frequency of sound
- Using speakers, the sound can be heard over a larger area and using headphones, the sound is only audible to the person using them
- Also known as earphones or headset



6.2. Storage devices

A storage unit is a part of the computer system which is employed to store the information and instructions to be processed. A storage device is an integral part of the computer hardware which stores information/data to process the result of any computational work.

Without a storage device, a computer would not be able to run or even boot up. Or in other words, we can say that a storage device is hardware that is used for storing, porting, or extracting data files. It can also store information/data both temporarily and permanently. Computer storage is of two types:

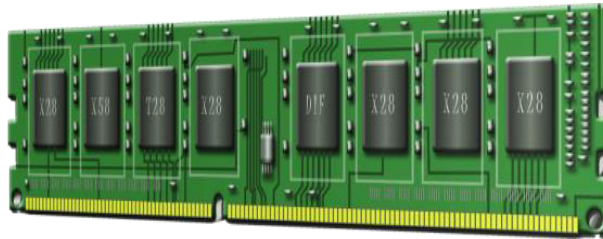
- **Primary Storage Devices:** It is also known as internal memory and main memory. This is a section of the CPU that holds program instructions, input data, and intermediate results. It is generally smaller in size. RAM (Random Access Memory) and ROM (Read Only Memory) are examples of primary storage.
- **Secondary Storage Devices:** Secondary storage is a memory that is stored external to the computer. It is mainly used for the permanent and long-term storage of programs and data. Hard Disk, CD, DVD, Pen/Flash drive, SSD, etc, are examples of secondary storage.

Main Memory

The function of main memory (also referred to as primary memory, main storage or internal storage) is to provide temporary storage for instructions and data during the execution of a program.

Main memory is usually known as RAM, which stands for Random Access Memory. Although microchip-based memory is virtually the only technology used by today's computers, there exist many different types of memory chips.

Random Access Memory (RAM)



RAM consists of standard circuit-inscribed silicon microchips that contain many millions of tiny transistors. Very much like the CPU chips, their technology follows to the so-called law of Moore, which states that they double in capacity or power (for the same price) every 18 months. A RAM chip easily holds hundreds of Megabytes (million characters). They are frequently pre-soldered in sets on tiny memory circuit boards called SIMMS (Single In-line Memory Modules) or DIMMS (Dual ...) which slot directly onto the motherboard: the main circuit board that holds the CPU and other essential electronic elements. The biggest disadvantage of RAM is that its contents are lost whenever the power is switched off.

There are many special types of RAM and new acronyms such as EDO RAM, VRAM etc. are being created almost on a monthly basis. Two important types of RAM are:

- Cache memory is ultra-fast memory that operates at the speed of the CPU. Access to normal RAM is usually slower than the actual operating speed of the CPU. To avoid slowing the CPU down, computers usually incorporate some more expensive, faster cache RAM that sits in between the CPU and RAM. This cache holds the data and programs that are needed immediately by the CPU. Although today's CPUs already incorporate an amount of cache on the circuit itself, this on-chip cache is usually supplemented by an additional, larger, cache on the motherboard.
- Flash RAM or flash memory consists of special RAM chips on a separate circuit board within a tiny casing. It fits into custom ports on many notebooks, hand-held computers and digital cameras. Unlike normal RAM, flash memory is non-volatile i.e. it holds its contents even without external power, so it is also useful as a secondary storage device.

Read-Only Memory (ROM)

A small but essential element of any computer, ROM also consists of electronic memory microchips but, unlike RAM, it does not lose its

contents when the power is switched off. Its function is also very different from that of RAM. Since it is difficult or impossible to change the contents of ROM, it is typically used to hold program instructions that are unlikely to change during the lifetime of the computer. The main application of ROM is to store the so-called boot program: the instructions that the computer must follow just after it has been switched on to perform a self-diagnosis and then tell it how load the operating system from secondary storage. ROM chips are also found in many devices which contain programs that are unlikely to change over a significant period of time, such as telephone switch boards, video recorders or pocket calculators. Just like RAM, ROM comes in a number of different forms:

- PROM (Programmable Read-Only Memory) is initially empty and can be custom-programmed once only using special equipment. Loading or programming the contents of ROM is called burning the chip since it is the electronic equivalent of blowing tiny transistor fuses within the chip. Once programmed, ordinary PROMs cannot be modified afterwards.
- EPROM (Erasable Programmable Read-Only Memory) is like PROM but, by using special equipment such as an ultra-violet light gun, the memory contents can be erased so that the EPROM can be re-programmed.
- EEPROM (Electrically Erasable Programmable Read-Only Memory) is similar to EPROM but it can be re-programmed using special electronic pulses rather than ultraviolet light so no special equipment is required.

Secondary Storage Devices

Since the main memory of a computer has a limited capacity, it is necessary to retain data in secondary storage between different processing cycles. This is the medium used to store the program instructions as well as the data required for future processing. Most secondary storage devices in use today are based on magnetic or optical technologies.

Disk drives

The disk drive is the most popular secondary storage device, and is found in both mainframe and microcomputer environments. The central mechanism of the disk drive is a flat disk, coated with a magnetizable substance. As this disk rotates, information can be read from or written to it by means of a head. The head is fixed on an arm and can move across the radius of the disk. Each position of the arm corresponds to a “track”

on the disk, which can be visualized as one concentric circle of magnetic data. The data on a track is read sequentially as the disk spins underneath the head. There are quite a few different types of disk drives.

In Winchester hard drives, the disk, access arm and read/write heads are combined in one single sealed module. This unit is not normally removable, though there are some models available where the unit as a whole can be swapped in and out of a specially designed drive bay. Since the drives are not handled physically, they are less likely to be contaminated by dust and therefore much more reliable. Mass production and technology advances have brought dramatic improvements in the storage capacity with Terabyte hard drives being state of the art at the end of 2006. Current disk storage costs as little \$1 per gigabyte.

Large organizations such as banks, telcos and life insurance companies, require huge amounts of storage space, often in the order of many terabytes (one terabyte is one million megabytes or a trillion characters). This was typically provided by a roomful of large, high-capacity hard drive units. Currently, they are being replaced increasingly by redundant arrays of independent disks (RAIDs).

A RAID consists of an independently powered cabinet that contains a number (10 to 100) of microcomputer Winchester-type drives but functions as one single secondary storage unit. The advantage of the RAID is its high-speed access and relatively low cost. In addition, a RAID provides extra data security by means of its fault-tolerant design whereby critical data is mirrored (stored twice on different drives) thus providing physical data redundancy. Should a mirrored drive fail, the other drive steps in automatically as a backup.



A low-cost, low-capacity version of the hard disk was popularized by the microcomputer. The diskette consists of a flexible, magnetic surface coated mylar disk inside a thin, non-removable, plastic sleeve. The early versions of the diskette were fairly large (8" or 5W) and had a flexible sleeve, hence the name floppy diskette.

These have rapidly been replaced by a diskette version in a sturdier sleeve, the stiffy disk, that despite its smaller size (3 W') can hold more data. Although the popular IBM format only holds 1,44 megabytes, a number of manufacturers have developed diskette drives that can store from 100 to 250 megabytes per stiffy. An alternative development is the removable disk cartridge, which is similar in structure to an internal hard drive but provides portability, making it useful for backup purposes.

Magnetic tape

While disk and optical storage have overtaken magnetic tape as the most popular method of storing data in a computer, tape is still used occasionally – in particular for keeping archive copies of important files.



The main drawback of magnetic tape is that it is not very efficient for accessing data in any way other than strictly sequential order. As an illustration, compare a CD player (which can skip to any track almost instantly) with a music tape recorder (which has to wind the tape all the way through if one wants to listen to a song near the end). In computer terms, the ability to access any record, track, or even part within a song directly is called the direct access method. In the case of the tape recorder one may have to wind laboriously through the tape until one reaches the song required – this is referred to as the sequential access method.

The high-density diskette and recordable optical disk have all but eroded the marginal cost advantage that tape storage enjoyed. This technology is therefore disappearing fast.

Optical disk storage

Optical disks, on the other hand, are rapidly becoming the storage medium of choice for the mass distribution of data/programs and the backup of data. Similar to disk storage, information is stored and read from a circular disk. However, instead of a magnetic read head, a tiny laser beam is used to detect microscopic pits burnt onto a plastic disk coated with reflective material. The pits determine whether most of the laser light is reflected back or scattered, thus making for a binary “on” or “off”. In contrast to hard disks, data is not stored in concentric cylinders but in one long continuous spiral track.

Trivial fact: The spiral track used to store data on a CD is over six kilometers long.

A popular optical disk format is the 12-cm CD-ROM. The widespread use of music compact discs has made the technology very pervasive and cheap. Production costs for a CD-ROM are less than RI, even for relatively small production volumes. The drive reader units themselves have also dropped in price and are now hardly more than the cost of a diskette drive. A standard CD-ROM can store 650 megabytes of data and the data can be transferred at many megabytes per second, though accessing non-sequential data takes much longer.

The CD-ROM is a read-only medium. Data cannot be recorded onto the disk. The low cost and relatively large capacity makes the CD-ROM ideally suited to the distribution of software. They are also ideal for the low-cost distribution of large quantities of information such as product catalogues, reference materials, conference proceedings, databases, etc. It is indispensable for the storage of multimedia where traditional textual information is supplemented with sound, music, voice, pictures, animation, and even video clips.

The limitation of the read-only format lead to the development of low-cost recordable optical disks. The compact disk recordable (CD-R) is a write-once, read-many (WORM) technology. The CD-R drive unit takes a blank optical disk and burns data onto it using a higher-powered laser. This disk can then be read and distributed as an ordinary CD-ROM, with the advantage that the data is non-volatile i.e. permanent. The rapid drop in the cost of drive units and blank recording media (less than R2 per CD-R) is making this a very competitive technology for data backup and small-scale data distribution.

Although the 650 megabytes initially seemed almost limitless, many multimedia and video applications now require more storage. A new format, the Digital Video Data (DVD) standard increased the capacity of the CD-ROM by providing high-density, double-sided and double-layered CDs. By combining the increased storage capacity with sophisticated data compression algorithms, a DVD disc can easily store 10 times as much as a CD, sufficient for a full-length high-quality digital motion picture with many simultaneous sound tracks.

Even the DVD is not sufficient storage capacity and currently two optical technologies have been developed to increase storage capacity even further. The basic specification of both HD-DVD and Blu-Ray provide for more than 25 GB of storage on a disc although multi-layer Blu-Ray discs with capacities of more than 200 GB have already been developed.

Storage Devices

Now we will discuss different types of storage devices available in the market. These storage devices have their own specification and use. Some of the commonly used storage devices are:

1. Primary storage devices

(i) RAM: It stands for Random Access Memory. It is used to store information that is used immediately or we can say that it is a temporary memory. Computers bring the software installed on a hard disk to RAM to process it and to be used by the user. Once, the computer is turned off, the data is deleted. With the help of RAM, computers can perform multiple tasks like loading applications, browsing the web, editing a spreadsheet, experiencing the newest game, etc. It allows you to modify quickly among these tasks, remembering where you're in one task once you switch to a different task. It is also used to load and run applications, like your spreadsheet program, answer commands, like all edits you made within the spreadsheet, or toggle between multiple programs, like once you left the spreadsheet to see the email. Memory is nearly always being actively employed by your computer. It ranges from 1GB – 32GB/64GB depending upon the specifications. There are different types of RAM, although they all serve the same purpose, the most common ones are :

- SRAM: It stands for Static Random Access Memory. It consists of circuits that retain stored information as long as the power is supply is on. It is also known as volatile memory. It is used to build Cache memory. The access time of SRAM is lower and it is much faster as compared to DRAM but in terms of cost, it is costly as compared to DRAM.
- DRAM: It stands for Dynamic Random Access Memory. It is used to stores binary bits in the form of electrical charges that are applied to capacitors. The access time of DRAM is slower as compare to SRAM but it is cheaper than SRAM and has a high packaging density.
- SDRAM: It stands for Synchronous Dynamic Random Access Memory. It is faster than DRAM. It is widely used in computers and others. After SDRAM was introduced, the upgraded version of double data rate RAM, i.e., DDR1, DDR2, DDR3, and DDR4 was entered into the market and widely used in home/office desktops and laptops.

(ii) ROM: It stands for Read-Only Memory. The data written or stored in these devices are non-volatile, i.e, once the data is stored in the memory

cannot be modified or deleted. The memory from which will only read but cannot write it. This type of memory is non-volatile. The information is stored permanently during manufacture only once. ROM stores instructions that are used to start a computer. This operation is referred to as bootstrap. It is also used in other electronic items like washers and microwaves. ROM chips can only store few megabytes (MB) of data, which ranges between 4 and 8 MB per ROM chip. There are two types of ROM:

- PROM: PROM is Programmable Read-Only Memory. These are ROMs that can be programmed. A special PROM programmer is employed to enter the program on the PROM. Once the chip has been programmed, information on the PROM can't be altered. PROM is non-volatile, that is data is not lost when power is switched off.
- EPROM: Another sort of memory is that the Erasable Programmable Read-Only Memory. It is possible to erase the info which has been previously stored on an EPROM and write new data onto the chip.

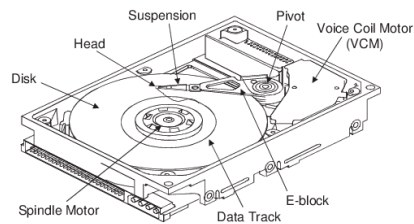
2. Magnetic Storage Devices

(i) Floppy Disk: It is also known as a floppy diskette. It is generally used on a personal computer to store data externally. A Floppy disk is made up of a plastic cartridge and secures with a protective case. Nowadays floppy disk is replaced by new and effective storage devices like USB, etc.



(ii) Hard Disk: It is a storage device (HDD) that stores and retrieves data using magnetic storage. It is a non-volatile storage device that can be modified or deleted n number of times without any problem. Most of the computers and laptops have HDDs as their secondary storage device. It is actually a set of stacked disks, just like phonograph records. In every hard disk, the data is recorded electromagnetically in the concentric circles or we can say track present on the hard disk, and with the help of a head just like a phonograph arm (but fixed in a position) to read the

information present on the track. The read-write speed of HDDs is not so fast but decent. It ranges from a few GBs to a few and more TB.



(iii) Magnetic Card: It is a card in which data is stored by modifying or rearranging the magnetism of tiny iron-based magnetic particles present on the band of the card. It is also known as a swipe card. It is used like a passcode (to enter into house or hotel room), credit card, identity card, etc.

(iv) Tape Cassette: It is also known as a music cassette. It is a rectangular flat container in which the data is stored in an analog magnetic tape. It is generally used to store audio recordings.



(v) Super Disk: It is also called LS-240 and LS-120. It is introduced by Imation corporation and it is popular with OEM computers. It can store data up to 240 MB.

3. Flash memory Devices

It is a cheaper and portable storage device. It is the most commonly used device to store data because it is more reliable and efficient as compared to other storage devices. Some of the commonly used flash memory devices are:

(i) Pen Drive: It is also known as a USB flash drive that includes flash memory with an integrated USB interface. We can directly connect these devices to our computers and laptops and read/write data into them in a much faster and efficient way. These devices are very portable. It ranges from 1GB to 256GB generally.



(ii) SSD: It stands for Solid State Drive, a mass storage device like HDDs. It is more durable because it does not contain optical disks inside like hard disks. It needs less power as compared to hard disks, is lightweight, and has 10x faster read and write speed as compared to hard disks. But, these are costly as well. While SSDs serve an equivalent function as hard drives, their internal components are much different. Unlike hard drives, SSDs don't have any moving parts and thus they're called solid-state drives. Instead of storing data on magnetic platters, SSDs store data using non-volatile storage. Since SSDs haven't any moving parts, they do not need to "spin up". It ranges from 150GB to a few and more TB.

(iii) SD Card: It is known as a Secure Digital Card. It is generally used with electronic devices like phones, digital cameras, etc. to store larger data. It is portable and the size of the SD card is also small so that it can easily fit into electronic devices. It is available in different sizes like 2GB, 4GB, 8GB, etc.



(iv) Memory Card: It is generally used in digital cameras, printers, game consoles, etc. It is also used to store large amounts of data and is available in different sizes. To run a memory card on a computer you require a separate memory card reader.



(v) Multimedia Card: It is also known as MMC. It is an integrated circuit that is generally used in-car radios, digital cameras, etc. It is an external device to store data/information.

4. Optical Storage Devices

Optical Storage Devices is also a secondary storage device. It is a removable storage device. Following are some optical storage devices:

(i) CD: It is known as Compact Disc. It contains tracks and sectors on its surface to store data. It is made up of polycarbonate plastic and is circular in shape. CD can store data up to 700MB. It is of two types:

- CD-R: It stands for Compact Disc read-only. In this type of CD, once the data is written can not be erased. It is read-only.
- CD-RW: It stands for Compact Disc read Write. In this type of CD, you can easily write or erase data multiple times.



(ii) DVD: It is known as Digital Versatile Disc. DVDs are circular flat optical discs used to store data. It comes in two different sizes one is 4.7GB single-layer discs and another one is 8.5GB double-layer discs. DVDs look like CDs but the storage capacity of DVDs is more than as compared to CDs. It is of two types:

- DVD-R: It stands for Digital Versatile Disc read-only. In this type of DVD, once the data is written can not be erased. It is read-only. It is generally used to write movies, etc.
- DVD-RW: It stands for Digital Versatile Disc read Write. In this type of DVD, you can easily write or erase data multiple times.

6.3. Internal & External parts of Hardware and software

Internal computer hardware components

- Motherboard. ...
- CPU. ...
- RAM. ...
- Hard drive. ...
- Solid-state drive (SSD). ...
- Optical drive. ...

- Heat sink. ...
- Graphics processing unit.

Internal computer software components

- System software and application software.

6.4 Summary

A storage unit is a part of the computer system which is employed to store the information and instructions to be processed.

A storage device is an integral part of the computer hardware which stores information/data to process the result of any computational work.

6.5. Keywords

Internal, External, CD, DVD, SD card and Memory

6.6. Terminal Questions

1. Write about storage device.
2. What is the use storage device?
3. Write any two hardware.
4. What is the use of hardware?
5. Write any two storage media.

Let us Sum Up

In this unit you have learned the followings:

- To know the use of memory system
- Types of memory and uses.
- Input and output are insert data and display a result.

Check your Progress

1. Memory is used to _____
2. Memory types are _____
3. Primary memory are _____
4. _____ is secondary memory.

Glossary

Memory	:	Used to store program .
Floppy	:	is secondary memory
Hard disk	:	is a secondary memory
RAM, ROM	:	is a Primary memory

Answer to Check your Progress

1. Store the program
 2. Two
 3. RAM and ROM
 4. Hard disk
-

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

System Software: Operating System

STURCTURE

Overview

Objectives

7.1. System software

7.2. Introduction to Operating systems

7.3. Types of operating systems

7.4. Summary

7.5. Keywords

7. 6.Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the System software, Introduction to Operating systems and Types of operating systems.

Objectives

After completion of this unit, you will be able to:

- To understand the system software and application software
- To learn about operating systems
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.

7.1. System software

System software is a type of computer program that is designed to run a computer's hardware and application programs. If we think of the computer system as a layered model, the system software is the interface between the hardware and user applications. The operating system is the best-known example of system software.

System software is used to manage the computer itself. It runs in the background, maintaining the computer's basic functions so users can run

higher-level application software to perform certain tasks. Essentially, system software provides a platform for application software to be run on top of.

Important features of system software

Computer manufacturers usually develop the system software as an integral part of the computer. The primary responsibility of this software is to create an interface between the computer hardware they manufacture and the end user.

System software generally includes the following features:

1. High speed. System software must be as efficient as possible to provide an effective platform for higher-level software in the computer system.
2. Hard to manipulate. It often requires the use of a programming language, which is more difficult to use than a more intuitive user interface (UI).
3. Written in a low-level computer language. System software must be written in a computer language the central processing unit (CPU) and other computer hardware can read.
4. Close to the system. It connects directly to the hardware that enables the computer to run.
5. Versatile. System software must communicate with both the specialized hardware it runs on and the higher-level application software that is usually hardware-agnostic and often has no direct connection to the hardware it runs on. System software also must support other programs that depend on it as they evolve and change.

7.2. Introduction to Operating System

An Operating System (OS) is system software that manages computer hardware, software resources, and provides common services for computer programs.

Time-sharing operating systems schedule tasks for efficient use of the system and may also include accounting software for cost allocation of processor time, mass storage, printing, and other resources.

For hardware functions such as input and output and memory allocation, the operating system acts as an intermediary between programs and the computer hardware, although the application code is usually executed directly by the hardware and frequently makes system calls to an OS

function or is interrupted by it. Operating systems are found on many devices that contain a computer – from cellular phones and video game consoles to web servers and supercomputers.

7.3. Types of operating systems

- Batch operating systems. The batch operating system does not have a direct link with the computer. ...
- Time-sharing or multitasking operating systems. ...
- Distributed operating systems. ...
- Network operating systems. ...
- Real-time operating systems. ...
- Mobile operating systems. ...
- Microsoft Windows. ...
- Apple iOS

7.4. Summary

An operating system (OS) is system software that manages computer hardware, software resources and provides common services for computer programs.

Time-sharing operating systems schedule tasks for efficient use of the system and may also include accounting software for cost allocation of processor time, mass storage, printing, and other resources.

7.5. Keywords

System software, Speed, Time sharing and distributed

7.6. Terminal Questions

1. What is operating system?
2. Write the use of operating system.
3. Write any operating system in briefly.
4. What is meant by system software?
5. Write any two system software.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. System software is used to manage _____
2. Operating system is _____ in process
3. Computers are two parts _____ and _____
4. _____ is used to store large types of program .

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to check your progress

1. Computer itself
2. Kernal
3. Hardware and Software
4. Hard disk

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava (2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-8

Application Software - Internet

STURCTURE

Overview

Objectives

8.1.Introduction to software

8.2.Application software

8.3.Definition of Internet

8.4.Summary

8.5. Keywords

8.6.Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the Introduction to software, Application software and Definition of Internet.

Objectives

After completion of this unit, you will be able to:

- To understand the concepts of software.
- To learn about types of software
- To understand the concepts of Internet.

8.1. Introduction to software

Software:

Software is known as programs or apps, comprising of all the instructions that direct the hardware in performing tasks. These instructions come from a software developer in the form and are accepted by the platform (Operating System + CPU) that they are based on. Software is capable enough to perform numerous tasks, compared to hardware that can only perform mechanical tasks they are designed for. Software provides the means for accomplishing many different tasks with the same basic

hardware. Practical computer systems divide software systems into two parts:

System Software:

System software is designed for controlling and working with computer hardware. It allow users to interact directly with hardware functionality, like the device manager and many of the utilities found in the control panel. It consists of operating systems, device drivers, diagnostic tools, etc. and is almost always pre-installed in computers and smart phones, examples are Windows 10, Linux, Macintosh, Android.

8.2. Application Software:

Application software is capable of dealing with user inputs and helping them to complete tasks. It resides above the system software and allows users to accomplish one or more tasks. It is programmed for simple as well as complex tasks. It can either be a single program or a group of programs that are referred to as an application suite. Some examples of application software are Word Processing Software, Web Browsing, Spreadsheet Software, Presentation, Graphics, Multimedia YouTube, Computer Aided Design (CAD)/Computer Aided Manufacturing (CAM), sending email, accounting software, customised shopping apps and cloud based applications such as Google docs.

8.3. Definition of Internet

The Internet (or internet) is the global system of interconnected computer networks that uses the Internet protocol suite (TCP/IP) to communicate between networks and devices. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW) , electronic mail, telephony, and file sharing.

The origins of the Internet date back to the development of packet switching and research commissioned by the United States Department of Defense in the 1960s to enable time-sharing of computers. The primary precursor network, the ARPANET, initially served as a backbone for interconnection of regional academic and military networks in the 1970s. The funding of the National Science Foundation Network as a new backbone in the 1980s, as well as private funding for other commercial extensions, led to worldwide participation in the development of new

networking technologies, and the merger of many networks. The linking of commercial networks and enterprises by the early 1990s marked the beginning of the transition to the modern Internet, and generated a sustained exponential growth as generations of institutional, personal, and mobile computers were connected to the network.

Although the Internet was widely used by academia in the 1980s, commercialization incorporated its services and technologies into virtually every aspect of modern life.

8.4. Summary

The Internet is the global system of interconnected computer networks that uses the Internet Protocol suite (TCP/IP) to communicate between networks and devices.

It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

8.5. Keywords

Internet, TCP/IP, WWW and Application software

8.6. Terminal Questions

1. What is the use of Internet?
2. What is mean by WWW?
3. Write notes on software
4. Write about the types of software?
5. Write the use of application software.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. There are two types software are _____ , _____
2. Internet is _____ connected systems
3. WWW means _____

4. Web browsing is a _____.

Glossary

Program : The set of instruction is called program.

Data : used to construct program

Input : used to raw material

Output : To display the result or value

Answer to Check your Progress

1. System software and application software
 2. Global
 3. World Wide Web
 4. Application software
-

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business 1st Edition , SBPD Publications.

Block-3: Introduction

The Block-3: File Operations has been divided into four Units (Unit-9 to Unit-12).

Unit-9: Microsoft Word deals with Definition of MS word, MS word History, Version of Word and Features of word such as file creation.

Unit-10: Formatting and Editing of paragraph explains about Formatting, Editing of Paragraph, Formatting of Paragraph

Unit-11: Inserting header and footer and page number describes about Notes on Header and footer, Inserting Header and footer and Inserting Page Number

Unit-12: Inserting tables, print review and printing presents about Inserting Tables, Inserting Symbols and Print command and review.

In all the units of Block -3: **File Operations**, the Check your progress, Glossary, Answers to Check your progress and Suggested Reading has been provided and the Learners are expected to attempt all the Check your progress as part of study.

STURCTURE

Overview

Objectives

9.1. Definition of MS word

9.2. MS word History

9.3. Version of Word

9.4. Features of word such as file creation

9.5. Summary

9.6. Keywords

9.7. Terminal Questions

Let Us Sum Up

Check Your Progress

Answer to Check Your Progress

Overview

In this unit the learners will learn and study about the basic functionality of Definition of MS word, MS word History, Version of Word and Features of word such as file creation.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To learn about MS word and how to create a new document
 - To understand of word application usages.
-

9.1. Definition of Ms Word

Microsoft Word is a widely used commercial word processor designed by Microsoft. Microsoft Word is a component of the Microsoft Office suite of productivity software, but can also be purchased as a stand-alone product.

Microsoft Word was initially launched in 1983, and has since been revised numerous times. It is available for both Windows and Apple operating systems. Microsoft Word is often called simply Word or MS Word.

9.2. MS Word history

In 1981, Microsoft hired Charles Simonyi to develop a word-processing application. The first version was released in 1983.

Initially, MS Word was not very popular, owing to its radically different look compared to WordPerfect, the leading word processor at that time. However, Microsoft improved Word continually over the years, including a 1985 version that could run on a Mac.

The second major release of Word, in 1987, included an upgrade of major features, in addition to new functionalities such as support for Rich Text Format (RTF).

In 1995, Microsoft increased its market share in the word processor business with the release of Windows 95 and Office 95, which offered a bundled set of office productivity software.

Some features that have made MS Word useful include a WYSIWYG (what-you-see-is-what-you-get) display: this design ensures that everything displayed on screen appears the same way when printed or moved to another format or program.

The ability of users to copy and paste MS Word content into many other platforms without significant formatting loss is one reason the software has stayed so popular in the last two decades.

In addition, MS Word has a built-in dictionary for spell checking; misspelled words are marked with a red squiggly underline. MS Word offers text-level features such as bold, underline, italic and strike-through, and page-level features such as indentation, paragraphing and justification.

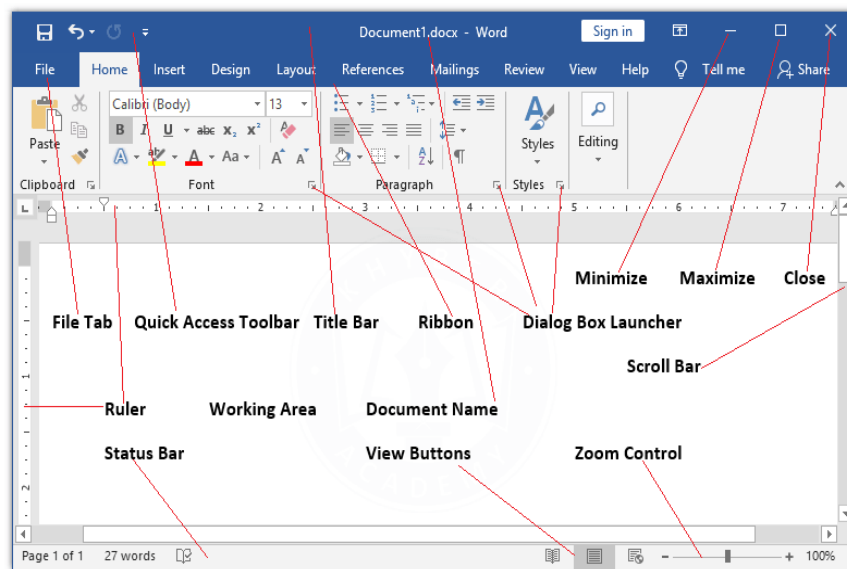
Word is compatible with many other programs, the most common being the other members of the Office suite.

In 2007, .docx became the default file format, replacing the “.doc” extension.

As Microsoft Word modernized over time, so did Microsoft operating systems. Since the Microsoft Office suite is inherently tied to the Microsoft operating system, its use featured in user frustrations around end-of-life for Microsoft XP and the successive Vista and Windows 7, 8 and 10 additions.

9.3. Version of word

Year released	Name	Version
2010	Word 2010	14.0
2013	Word 2013	15.0
2016	Word 2016	16.0
2019	Word 2019	16.0



9.4. Features of word such as file creation

Home

This has options like font colour, font size, font style, alignment, bullets, line spacing, etc. All the basic elements which one may need to edit their document is available under the Home option.

Insert

Tables, shapes, images, charts, graphs, header, footer, page number, etc. can all be entered in the document. They are included in the "Insert" category.

Design

The template or the design in which you want your document to be created can be selected under the Design tab. Choosing an appropriate tab will enhance the appearance of your document.

Page Layout

Under the Page Layout tab comes options like margins, orientation, columns, lines, indentation, spacing, etc.

References

This tab is the most useful for those who are creating a thesis or writing books or lengthy documents. Options like citation, footnote, table of contents, caption, bibliography, etc. can be found under this tab.

Review

Spell check, grammar, Thesaurus, word count, language, translation, comments, etc. can all be tracked under the review tab. This acts as an advantage for those who get their documents reviewed on MS Word.

Apart from all the above-mentioned features, the page can be set in different views and layouts, which can be added and optimised using the View tab on the Word document. Margins and scales are also available for the benefit of the users. When compared with MS PowerPoint, MS Word is more of reading while PPT is more of visual and graphical representation of data.

9.5. Summary

Microsoft Word is a widely used commercial word processor designed by Microsoft. Microsoft Word is a component of the Microsoft Office suite of productivity software, but can also be purchased as a stand-alone product.

9.6. Keywords

MS Word, Page, Insert, Home and Features

9.7. Terminal Questions

1. What is the use of word?
 2. Write about the functions of word.
 3. Write the difference properties or word.
 4. Write advantage of word.
 5. Write any four menus using Ms word.
-

Check your Progress

1. Ms-word used to create _____
2. Ms-word is easy to _____ user
3. There are _____ types of alignments
4. Document _____ is possible in MS-word.

Let Us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Glossary

Program : The set of instruction is called program.

Data : used to construct program

Input : used to raw material

Output : To display the result or value

Answer to Check your Progress

1. Documents
2. Handle
3. Four
4. Edit

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.

2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.

3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-10

Formatting and Editing of Paragraph

STURCTURE

Overview

Objectives

10.1.Formatting

10.2.Editing of Paragraph

10.3.Formatting of Paragraph

10.4.Summary

10.5.Keywords

10.6.Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Formatting, Editing of Paragraph and Formatting of Paragraph.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To learn about text formation and editing.
- To align and summary of paragraph.

10.1. Formatting

Format text

1. Select the text you want to format. To select a single word, double-click it. To select a line of text, click to the left of it.
2. Select an option to change the font, font size, font color, or make the text bold, italic, or underline.

Formatted text can draw the reader's attention to specific parts of a document and emphasize important information. In Word, you have several options for adjusting text, including font, size, and color. You can also adjust the alignment of the text to change how it is displayed on the page.

10.2. Editing of Paragraph

While editing your paragraph, make sure that it follows correct paragraph structure. It should have a topic sentence with a clear focus, and include details that support the topic sentence. Your paragraph should also be free of spelling, punctuation and grammar errors.

While editing your paragraph, make sure that it follows correct paragraph structure. It should have a topic sentence with a clear focus, and include details that support the topic sentence. Your paragraph should also be free of spelling, punctuation and grammar errors. You should always spell- and grammar-check your writing. Remember that the spell-check feature on your computer will not help if you spell the word correctly, but use it incorrectly. Use a dictionary or a thesaurus if you are unsure how a word is used. To edit your paragraph, read it carefully. Reading it out loud can be more effective than reading it silently. You can also ask someone else to proofread it for errors.

10.3. Formatting of Paragraph

Paragraph formatting is a change in the format of text that affects an entire paragraph or is different from other paragraphs in a document. Paragraphs in a word processing document or on a web page can have paragraph formatting applied to them, including alignment, font type, font size, highlighting, and indentation.

- Change font size
- Change font type
- Change font color
- Change bold and italics formatting
- Change color highlighting
- Change paragraph indentation

10.4. Summary

Paragraph formatting is a change in the format of text that affects an entire paragraph or is different from other paragraphs in a document.

10.5 Keywords

Text, Paragraph, Format, Edit and colours.

10.6 Terminal Questions

1. What is paragraph format?
2. Write the classification of formatting?
3. Write the use editing.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. Paragraph alignment is called _____
2. Formation of Paragraph is to align _____
3. The font colour change is _____ in MS-Word
4. Alignments are Left, right and _____, _____.

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Editing
2. Text
3. Possible
4. Centre and Justificateion

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business ,1st Edition , SBPD Publications.

Unit-11

Inserting Header , Footer and Page Number

STURCTURE

Overview

Objectives

11.1. Notes on Header and footer

11.2. Inserting Header and footer

11.3. Inserting Page Number

11.4. Summary

11.5. Keywords

11.6. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Notes on Header and footer, Inserting Header and footer and Inserting Page Number.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To learn about put the page number in automatically.
- To write any notes or hint or foot mark using header and footer.

11.1. Notes on Header and footer

Headers and footers are the top and bottom sections of the document respectively. They are separate sections from the main document, and are often used to hold footnotes, page numbers, titles, and other information. The Header and Footer options each contain a dropdown menu.

A header is text that is placed at the top of a page, while a footer is placed at the bottom, or foot, of a page. Typically these areas are used for inserting document information, such as the name of the document, the chapter heading, page numbers, creation date and the like.

11.2. Inserting Header and footer

1. Go to Insert > Header or Footer.
 2. Choose the header style you want to use. ...
 3. Add or change text for the header or footer. For more info on things you can do with headers, see Edit your existing headers and footers. To edit a header or footer that's been already created, double-click on it.
 4. To eliminate a header--like deleting it on the title page--select it and then check the Different First Page box.
 5. Select Close Header and Footer or press Esc to exit.
-

11.3. Inserting Page number

1. Select Insert > Page Number, and then choose the location and style you want.
2. If you don't want a page number to appear on the first page, select Different First Page.
3. If you want numbering to start with 1 on the second page, go to Page Number > Format Page Numbers, and set Start at to 0.
4. When you're done, select Close Header and Footer or press Esc.

A header or footer can contain text, information about the document, or even images. However, the most common elements in a header or footer are page numbers. Page numbers can be continuous though a document, all but the first page, or start over in each section.

11.4. Summary

Headers and footers are the top and bottom sections of the document respectively. They are separate sections from the main document, and are often used to hold footnotes, page numbers, titles, and other information.

11.5. Keywords

Notes, Header, Footer and Insert

11.6. Terminal Questions

1. Write about page number.
 2. How to insert page number in automatically.
 3. What is the use of header and footer?
-

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
 - Program is set of coding or source code that will fulfil the user need or user expectation.
 - Input and output are insert data and display a result.
-

Check your Progress

1. The page number is used to the location of _____
 2. Header is used to _____
 - 3, Footer is used to _____
 4. Ins button is used to _____
-

Glossary

- Program** : The set of instruction is called program.
- Data** : used to construct program
- Input** : used to raw material
- Output** : To display the result or value

Answer to Check your Progress

1. Header or Footer
2. Insert command in all pages
3. Insert page number
4. Insert data

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-12

Inserting Tables, Print Review and Printing

STURCTURE

Overview

Objectives

12.1. Inserting Tables

12.2. Inserting Symbols

12.3. Print command and review

12.4. Summary

12.5. Keywords

12.6. Terminal Questions

Let us Sum up

Glossary

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Inserting Tables, Inserting Symbols and Print command and review.

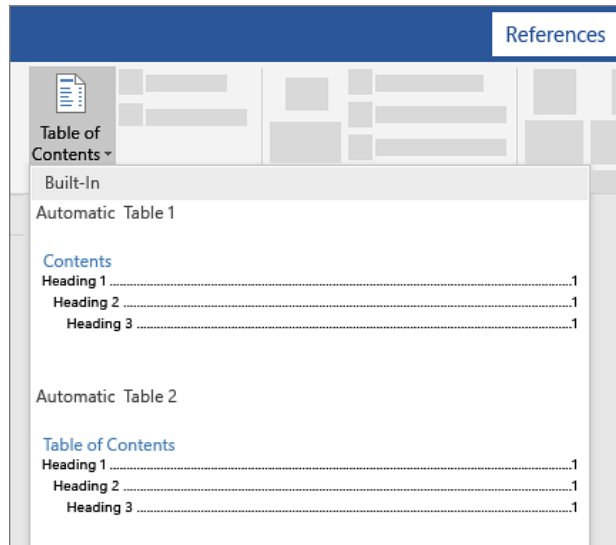
Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To study and learn the concepts of insert a table in word.
- To study about insert symbol and print command.

12.1. Inserting table

1. Put your cursor where you want to add the table of contents.
2. Go to References > Table of Contents and choose an automatic style.



3. If you make changes to your document that affect the table of contents, update the table of contents by right-clicking the table of contents and choosing Update Field.

12.2. Inserting symbols

Go to Insert > Symbol > More Symbols. Go to Special Characters. Double-click the character that you want to insert. Select Close.

1. Place your cursor in the file at the spot where you want to insert the symbol.
2. Go to Insert > Symbol.
3. Pick a symbol, or choose More Symbols.
4. Scroll up or down to find the symbol you want to insert.

Different font sets often have different symbols in them and the most commonly used symbols are in the Segoe UI Symbol font set. Use the Font selector above the symbol list to pick the font you want to browse through.

5. When you find the symbol you want, double-click it. The symbol will be inserted in your file.
6. Select Close.

12.3. Print command and review

Print a document in Word

1. Select File > Print.

2. To preview each page, select the forward and backward arrows at the bottom of the page. If the text is too small to read, use the zoom slider at the bottom of the page to enlarge it.
3. Choose the number of copies, and any other options you want, and select the Print button.
4. Print preview is a feature that displays on the screen what a hard copy would look like when printed. Using print preview, you can find any errors that may exist or fix the layout before printing, which can save ink or toner and paper by not having to print more than once.
5. To open the print preview feature, click the print preview icon on the toolbar, like that shown in the picture, or click File and choose the Print Preview option.

12.4. Summary

Print preview is a feature that displays on the screen what a hard copy would look like when printed.

Using print preview, you can find any errors that may exist or fix the layout before printing, which can save ink or toner and paper by not having to print more than once.

12.5. Keywords

Table, Insert, Delete, Print and Print preview

12.5. Terminal Questions

1. How to insert a table?
2. How to insert a symbol?
3. What is the use of print preview?
4. How to print documents?

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. Table insert in particular location in Document is _____
2. Insert symbol is used the key _____
3. Ctrl + C Key is _____
4. Paste command key is _____

Glossary

- Program** : The set of instruction is called program.
- Data** : used to construct program
- Input** : used to raw material
- Output** : To display the result or value

Answer to your Progress

1. Insert Table
2. Insert
- 3, Copy command
4. Ctrl + V

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Block-4: Introduction

The Block-4: Microsoft Excel has been divided into five Units (Unit-13 to Unit-16).

Unit-13: Microsoft Excel Introduction deals with the History of Microsoft Excel and Version of Microsoft Excel.

Unit-14: Features of Excel explains about the Excel Sheet, Features of Excel Sheet and Excel sheet creation.

Unit-15: Formatting the worksheet describes about the Formatting of Excel sheet, Editing of Excel Sheet and Organizing the worksheet.

Unit-16: Formulas and Functions presents about Worksheet using formulas and functions and Worksheet data sorting and filtering.

Unit-17: Creating Charts deals with Creating charts using Excel a Print and review command using excel.

In all the units of Block -4: **Microsoft Excel**, the Check your progress, Glossary, Answers to Check your progress and Suggested Reading has been provided and the Learners are expected to attempt all the Check your progress as part of study.

Unit-13

Microsoft Excel Introduction

STURCTURE

Overview

Objectives

13.1. Microsoft Excel

13.2. History and version of Excel

13.3. Summary

13.4. Keywords

13.5. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Microsoft Excel and History and version of Excel.

Objectives

After completion of this unit, you will be able to:

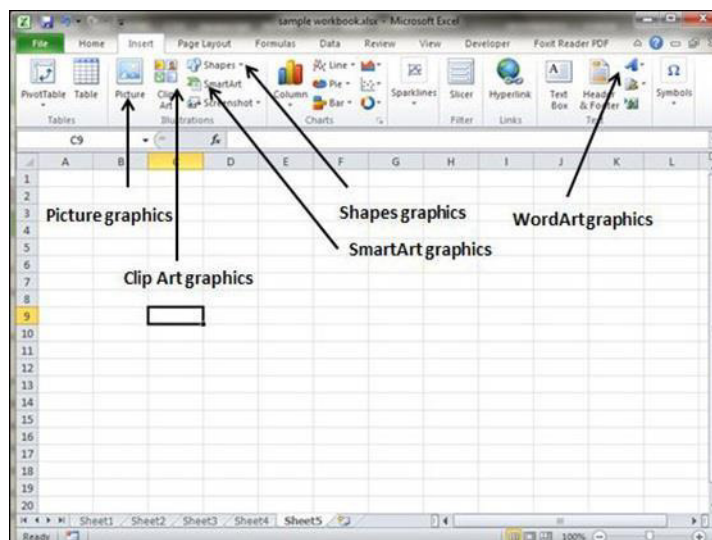
- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To study about worksheet in excel.
 - To learn how the data insert into excel sheet.
 - To study about Excel version.
-

13.1. Microsoft Excel

Microsoft Excel is an electronic spreadsheet. You can use it to organize your data into rows and columns. You can also use it to perform mathematical calculations quickly. This course teaches Microsoft Excel basics as a prelude to the use of Statistical Analysis System (SAS) software in carrying out more complex statistical analysis. Although

knowledge of how to navigate in a Windows environment is helpful, this manual is created for the computer novice.

At the end of the course, participants are expected to know how to use Microsoft Excel to: Enter text and numbers in a spreadsheet



- Enter Excel formulas
- Format data
- Create Excel functions
- Fill cells automatically
- Print results
- Create Charts, and
- Enter advanced Excel formulas

Microsoft Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations.

It has a battery of supplied functions to answer statistical, engineering, and financial needs. In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives (using pivot tables and the scenario manager).

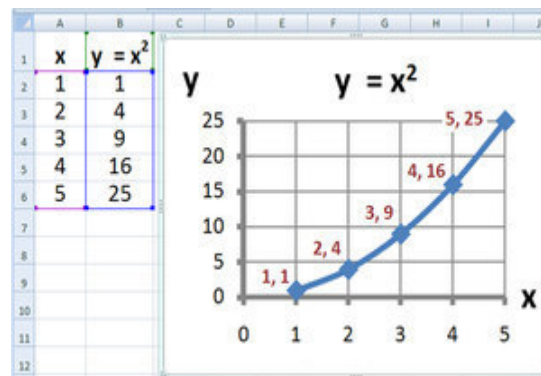
A PivotTable is a tool for data analysis. It does this by simplifying large data sets via PivotTable fields. It has a programming aspect, Visual Basic for Applications, allowing the user to employ a wide variety of numerical methods, for example, for solving differential equations of mathematical

physics, and then reporting the results back to the spreadsheet. It also has a variety of interactive features allowing user interfaces that can completely hide the spreadsheet from the user, so the spreadsheet presents itself as a so-called application, or Decision Support System (DSS).

13.2. History and version of Excel

From its first version Excel supported end-user programming of macros (automation of repetitive tasks) and user-defined functions (extension of Excel's built-in function library). In early versions of Excel, these programs were written in a macro language whose statements had formula syntax and resided in the cells of special-purpose macro sheets (stored with file extension .XLM in Windows.) XLM was the default macro language for Excel through Excel 4.0. Beginning with version 5.0 Excel recorded macros in VBA by default but with version 5.0 XLM recording was still allowed as an option. After version 5.0 that option was discontinued. All versions of Excel, including Excel 2010 are capable of running an XLM macro, though Microsoft discourages their use.

Charts



Graph made using Microsoft Excel

Excel supports charts, graphs, or histograms generated from specified groups of cells. It also supports Pivot Charts that allow for a chart to be linked directly to a Pivot table. This allows the chart to be refreshed with the Pivot Table. The generated graphic component can either be embedded within the current sheet or added as a separate object.

These displays are dynamically updated if the content of cells changes. For example, suppose that the important design requirements are displayed visually; then, in response to a user's change in trial values for parameters, the curves describing the design change shape, and their points of intersection shift, assisting the selection of the best design.

13.3. Summary

Excel supports charts, graphs, or histograms generated from specified groups of cells. It also supports Pivot Charts that allow for a chart to be linked directly to a Pivot table.

13.4 Keywords

Worksheet, Formula, functions, Chart and graphs

13.5. Terminal Questions

1. What is the use of excel sheet?
2. How to insert data into excel?
3. How the data value is sorted?
4. How to insert chart, graph into excel?

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. The excel sheet is insert of _____ and _____
2. Excel is used to construct _____
3. The auto sum command is used to _____
4. IF commands are used to _____.

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Row and Column
2. Calculation
3. Calculate Total value
4. To check Result value

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-14

Features of Excel

STURCTURE

Overview

Objectives

14.1. MS Excel

14.2. Features of Excel Sheet

14.3. Excel sheet creation

14.4. Summary

14.5. Keywords

14.6. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Features of Excel Sheet and Excel sheet creation.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To study about worksheet in excel.
- To learn Features of excel sheet.
- To study about Excel sheet creation.

14.1. MS Excel

The Microsoft Excel(MS Excel) is a spreadsheet developed by Microsoft for Windows, mac OS, Android and iOS. It features calculation or computation capabilities, graphing tools, pivot tables, and a macro programming language called Visual Basic for

Applications (VBA). Excel forms part of the Microsoft Office suite of software.

Microsoft Excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter-named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering, and financial needs.

In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives (using pivot tables and the scenario manager).

A PivotTable is a tool for data analysis. It does this by simplifying large data sets via PivotTable fields. It has a programming aspect, Visual Basic for Applications, allowing the user to employ a wide variety of numerical methods, for example, for solving differential equations of mathematical physics, and then reporting the results back to the spreadsheet. It also has a variety of interactive features allowing user interfaces that can completely hide the spreadsheet from the user, so the spreadsheet presents itself as a so-called application, or Decision Support System (DSS), via a custom-designed user interface, for example, a stock analyzer, or in general, as a design tool that asks the user questions and provides answers and reports.

In a more elaborate realization, an Excel application can automatically poll external databases and measuring instruments using an update schedule, analyze the results, make a Word report or PowerPoint slide show, and e-mail these presentations on a regular basis to a list of participants. Excel was not designed to be used as a database.

14.2. Features of Excel Sheet

1. Add header and footer

MS Excel allows us to keep the header and footer in our spreadsheet document.

2. Find and replace command

MS Excel allows us to find the needed data (text and numbers) in the workbook and also replace the existing data with a new one.

3. Password protection

This feature of MS Excel allows the user to protect their workbooks by using a password from unauthorized access to their information.

4. Data filtering

Filtering is a quick and easy way to find and work with a subset of data

in a range. A filtered range displays only the rows that meet the criteria you specify for a column. MS Excel provides two commands for filtering ranges:

- AutoFilter; which includes filter by selection, for simple criteria
- Advanced Filter; for more complex criteria

5. Data sorting

Data sorting is the process of arranging data in some logical order. MS Excel allows us to sort data either in ascending or descending order.

6. Built-in formulae

MS Excel has got many built-in formulae for sum, average, minimum, etc. We can use those formulae as per our needs.

7. Create different charts (Pivot Table Report)

MS Excel allows us to create different charts such as bar graph, pie-charts, line graphs, etc. This helps us to analyze and compare data very easily.

8. Automatically edits the result

MS Excel automatically edits the result if any changes are made in any of the cells.

9. Formula auditing

Using formula auditing feature of MS Excel, we can graphically display or trace the relationships between cells and formulas with blue arrows. We can trace the precedents (the cells that provide data to a specific cell) or the dependents (the cells that depend on the value in a specific cell)

14.3. Excel sheet creation

The Spreadsheet is the grid-based files designed to manage or perform any type of calculation on personal or business data. It is available in MS office as well as Office 365, from where a user can create a spreadsheet. Here MS office is an on-premise application where Office 365 is based on the cloud. There are 400+ functions and many features like pivot, coloring, graph, chart, conditional formatting, and many more, making it the best choice for the users.

The workbook is the Excel lingo for 'spreadsheet'. MS Excel uses this term to emphasize that a single workbook can contain multiple worksheets where each one can have its own data grid, chart, or graph.

Example #1 – How to Create Spreadsheet in Excel?

Step 1: Open MS Excel.

Step 2: Go to Menu and select New >> click on the Blank workbook to create a simple worksheet.

OR – Just press Ctrl + N: To create a new spreadsheet.

Step 3: By default, Sheet1 will be created as a worksheet in the spreadsheet, and the name of the spreadsheet will be given as Book1 if you are opening it for the first time.

- **Basic App Functions Area:** There is a green banner which contains all type of action to perform on the worksheet like save the file, back or front step move, new, undo, redo and many more.
- **Ribbon Area:** There is a grey area just below the basic app functions area called Ribbon. It contains data manipulation, data visualizing toolbar, page layout tools, and many more.
- **Spreadsheet Work Area:** By default, a grid containing alphabetic column A, B, C, ..., Z, ZA..., ZZ, ZZA... and rows as Numbers 1,2 3, 100, 101, ... so on. It is a cell where the user can perform his calculation for personal or business data. Each rectangle box in the spreadsheet is called cell-like selected on the above screenshot is cell A1.
- **Formula Bar:** It will show the data in the selected cell; if it contains any formula, it will show here. Like the above area, a search bar is available on the top right corner and a sheet tab which is available on the downside of the worksheet. A user can change the name of the sheet name.

14.4. Summary

The Spreadsheet is the grid-based files designed to manage or perform any type of calculation on personal or business data.

In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display.

14.5. Keywords

Excel sheet, Insert formula, Page layout and element

14.6. Terminal Questions

1. How to create spread sheet?
 2. Write the advantage of spread sheet.
 3. Define to write a macro program.
 4. What are the properties available in spread sheet?
 5. How the formula insert into sheet?
-

Let Us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
 - Program is set of coding or source code that will fulfil the user need or user expectation.
 - Input and output are insert data and display a result.
-

Check your Progress

1. MS-Excel sheet contain _____
 2. Cell is intersect point of _____ and _____
 3. The row values are started from _____
 4. The column values are started form _____
-

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Cell
2. Row and Column
3. Number value 1,2,3,...
4. Alphabetical A1, B1

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava (2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-15

Formatting the Worksheet

STURCTURE

Overview

Objectives

15.1. Formatting of Excel sheet

15.2. Editing of Excel Sheet

15.3. Organizing the worksheet

15.4. Summary

15.5. Keywords

15.6. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Formatting of Excel sheet , Editing of Excel Sheet and Organizing the worksheet.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To understand the concept of Format command in excel sheet
- To understand the working principle of excel sheet.
- To understand the working principle of organizing worksheet.

15.1. Formatting of Excel sheet

The Stats Direct workbook supports a rich set of data formatting capabilities. You can use number formats to display numbers in a certain way - as dates, for example, or as scientific format numbers. You can use cell formats to change the size of cells and to add colours and borders.

You can use font formats to change the typeface and style of the characters in your worksheet.

Using Built-in Number Formats

Number formats determine how numbers look when they appear in the worksheet. When you create a new worksheet, by default all cells in that worksheet use the General format, which means that as you enter data in the worksheet, Stats Direct determines the type of data and applies the appropriate number format (e.g., if you enter a date, a date format is applied).

To specify formats other than General, you can apply a number of built-in number formats. If you do not find the number format you want, you can create your own custom number format.

To apply number formats:

1. Select the cells for which you want to change the number format.
2. Select Format Cells and select the Number tab.
3. Select a category for the number format from the Category list.
4. Type a number format or select a format type from the Type combo box.
5. You can type a built-in format or a custom format.

15.2. Editing of Excel sheet

When you create a new worksheet, Discoverer applies a default format (e.g. colors, fonts) to worksheet items. For more information about changing the default format that is applied to worksheet items.

Discoverer's powerful layout tools enable you to format worksheets exactly how you want them. For example, you might want to:

- add items to a worksheet
- remove items from a worksheet
- change the color of rows and columns
- change the background color or title of worksheets
- change the format of text and numbers
- change the column width on table worksheets (Discoverer automatically sets the column size on crosstab worksheets)

You can edit worksheets using any of the following methods:

- by dragging and dropping a worksheet item from one area of a worksheet to another area (you can also resize worksheet columns using drag and drop)
- by right-clicking on any area of a worksheet (e.g. a graph, worksheet item, worksheet item heading) to display a list of options for that area.
- by using the Edit Worksheet wizard

You edit a worksheet to change the way that the worksheet looks or behaves. For example, you might want to change the layout of worksheet data, or add calculations, percentages, or totals.

To edit a worksheet using the Edit Worksheet Wizard:

1. Display the worksheet that you want to edit.
2. Choose Edit | Worksheet... to display the "Edit Worksheet dialog".
3. The tabs on the Edit Worksheet dialog enable you to edit the properties of the current worksheet, as follows:
4. use the Worksheet Layout tab to select the worksheet elements (e.g. title area, graph) to display on the worksheet (for more information, see "Edit Worksheet dialog: Worksheet Layout tab")
5. use the Select Items tab to specify which items to display on the current worksheet (for more information, see "Edit Worksheet dialog: Select Items tab")
6. use the Crosstab/Table Layout tab to change the layout of the current worksheet (for more information, see "Edit Worksheet dialog: Crosstab Layout tab" or "Edit Worksheet dialog: Table Layout tab")
7. use the Sort tab to change the sort order of items on the current table worksheet (e.g. title area, graph) to display on the worksheet (for more information, see "Edit Worksheet dialog: Sort tab")
8. Note: The Sort tab is only displayed for table worksheets. To sort a crosstab worksheet, Choose Tools | Sort to display the "Sort Crosstab dialog" (for more information, see "How to sort data on a crosstab worksheet").
9. use the Parameters tab to manage existing parameters and create new parameters (for more information, see "Edit Worksheet dialog: Parameters tab")

10. Click OK to save changes you have made and return to the worksheet.
11. Discoverer updates the worksheet with the changes that you specified.

15.3. Organizing the worksheet

Microsoft Excel is a program that uses spreadsheets to help you organize numbers and data with functions and formulas. There are many different ways you can use Excel, and with so many ideas, it is easy to get disorganized.

With that said, there is always a way to find a workaround that will help you get your spreadsheets in order. This is especially useful for team projects in Excel.

	A	B	C	D	E	F
1						
2		Fruit Production (mt)				
3			2003	2004	2005	2006
4		Grapes	456	467	390	403
5		Bananas	878	897	908	978
6		Strawberries	209	211	207	209
7		Apples	678	700	710	712
8		Mangoes	567	589	515	540
9		Pineapples	206	213	243	235
10						

1. Use Templates

You should not waste your time trying to recreate Excel spreadsheets from scratch every time you want to analyze your data. Instead, Microsoft Excel already includes a wide range of user-made templates.

Simply click on File > New and choose one of the many templates that come with Excel. Of course, you might have difficulty finding a template that perfectly suits your data analysis process.

But, you can still find one, which you can easily format to make it look better and more functional.

2. Highlight the Important Data

As with any management tool, you should always highlight the most important information. The same applies when you are working in Excel, especially if you have a whole team working in a single spreadsheet.

One of the easiest ways you can do this is to create a dashboard sheet where your key data points will be summarized.

3. Sort Your Data

One of the integral parts of data analysis is knowing how to sort your data. No matter whether you want to sort the names alphabetically or list the products from lowest to the highest price, it doesn't matter how you do it.

Sorting your data will help you quickly understand and visualize your data better. Excel allows you to sort your data alphabetically, numerically, and by date and time. You can also choose to sort it by a custom list that you create, or by formatting, font color, icon set, or by including cell color.

4. Use Multiple Sheets!

When you are working on something complex or working with a lot of information overall, do not forget that Excel allows you to simultaneously use many spreadsheets.

You do not have to store all your information on a single spreadsheet. Instead, spread your data across multiple spreadsheets and label it accordingly. This will allow you to find all the info that you need easily.

5. Hide Unnecessary Data

When you have too much information in a spreadsheet, it is difficult to focus on the right things. If you find yourself getting lost in numbers, maybe it is time to review your spreadsheets, component by component.

If you find any type of information that doesn't seem necessary or important anymore, you can hide it. Excel has a feature that lets you hide columns, sheets, or rows that you no longer require, but don't want to delete.

6. Hyperlinked Cells Can Save You a Lot of Time

When working in a team, or even alone, more often than not, you will waste time searching for a certain piece of information, by going through all the spreadsheets.

But, it does not have to be that way. Instead, you can name your important cells and hyperlink them within your sheets, which will guide you through the data. Microsoft Excel has great navigation tools for your data analysis, so make sure to utilize

7. Use Formulas and Functions Correctly

Mastering the basics of Excel formulas is critical for all beginners. Microsoft Excel is considered as the software for data analysis, across most industry standards.

It also happens to be the most preferred software for financial analysts, investment bankers, presentations, and financial modeling.

8. Shortcuts Can Help You Work Faster

Once you are already used to Excel functions and formulas, you should learn the basic shortcuts. You might find that by using keyboard shortcuts for Excel, you will be able to work a lot more efficiently.

This especially applies to users with mobility or vision disabilities. Keyboard shortcuts are an easier way to get the results you want from Excel without tapping on a touchscreen or using a mouse.

15.4. Summary

To learn and use cell formats to change the size of cells and to add colours and borders.

To learn about use of font formats to change the typeface and style of the characters in your worksheet.

15.5. Keywords

Cell, Format, font, Sort, hyperlink and functions

15.6. Terminal Questions

1. What is meant by cell?
2. How the data value insert into cell?
3. What are the advantage of cell?

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. MS-Excel formatting are _____ types
2. Alignment of text in _____ side
3. The number values always placed in _____ side
4. Del key used to particular _____.

Glossary

Program : The set of instruction is called program.

Data : used to construct program

Input : used to raw material

Output : To display the result or value

Answer to Check your Progress

1. Three
2. Left
3. Right
4. Data

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business , 1st Edition , SBPD Publications.

Unit-16

Formulas and Functions

STURCTURE

Overview

Objectives

16.1. Sheet using formulas and functions

16.2. Worksheet data sorting and filtering

16.3. Summary

16.4. Keywords

16.5. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Sheet using formulas and functions and Worksheet data sorting and filtering.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To understand the concept of sorting data items.
 - To understand the working principle of formulas and function
 - To develop the program for sorting and filtering in excel sheet.
-

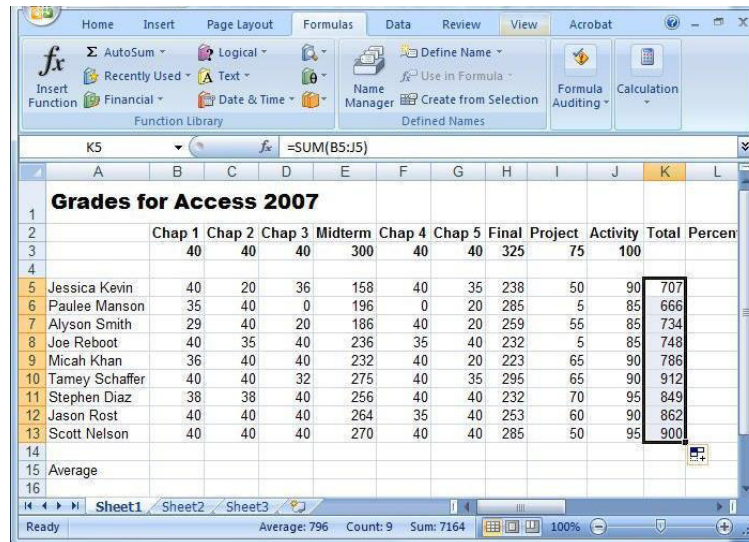
16.1 Sheet using formulas and functions

- Formula is an expression that calculates values in a cell or in a range of cells.

For example, =A2+A2+A3+A4 is a formula that adds up the values in cells A2 through A4.

- Function is a predefined formula already available in Excel. Functions perform specific calculations in a particular order based on the specified values, called arguments, or parameters.

For example, instead of specifying each value to be summed like in the above formula, you can use the SUM function to add up a range of cells: =SUM(A2:A4)



Excel basic functions you should definitely know

What follows below is a list of 10 simple yet really helpful functions that are a necessary skill for everyone who wishes to turn from an Excel novice to an Excel professional.

SUM

The first Excel function you should be familiar with is the one that performs the basic arithmetic operation of addition:

SUM(number1, [number2], ...)

In the syntax of all Excel functions, an argument enclosed in [square brackets] is optional, other arguments are required. Meaning, your Sum formula should include at least 1 number, reference to a cell or a range of cells. For example:

=SUM(B2:B6) - adds up values in cells B2 through B6.

=SUM(B2, B6) - adds up values in cells B2 and B6.

If necessary, you can perform other calculations within a single formula, for example, add up values in cells B2 through B6, and then divide the sum by 5:

=SUM(B2:B6)/5

To sum with conditions, use the SUMIF function: in the 1st argument, you enter the range of cells to be tested against the criteria (A2:A6), in the 2nd argument - the criteria itself (D2), and in the last argument - the cells to sum (B2:B6):

=SUMIF(A2:A6, D2, B2:B6)

In your Excel worksheets, the formulas may look something similar to this:

	A	B	C	D	E	F	G	H
1	Item	Qty.		Total	11	=SUM(B2:B6)		
2	Apples	1		Apples	4	=SUMIF(A2:A6, D2, B2:B6)		
3	Oranges	2						
4	Lemons	3						
5	Oranges	2						
6	Apples	3						

AVERAGE

The Excel AVERAGE function does exactly what its name suggests, i.e. finds an average, or arithmetic mean, of numbers. Its syntax is similar to SUM's:

AVERAGE (number1, [number2], ...)

Having a closer look at the formula from the previous section (=SUM(B2:B6)/5), what does it actually do? Sums values in cells B2 through B6, and then divides the result by 5. And what do you call adding up a group of numbers and then dividing the sum by the count of those numbers? Yep, an average!

The Excel AVERAGE function performs these calculations behind the scenes. So, instead of dividing sum by count, you can simply put this formula in a cell:

=AVERAGE(B2:B6)

To average cells based on condition, use the following AVERAGEIF formula, where A2:A6 is the criteria range, D3 is the criteria, and B2:B6 are the cells to average:

=AVERAGEIF(A2:A6, D3, B2:B6)

	A	B	C	D	E	F	G	H
1	Item	Qty.		<i>Average</i>				
2	Apples	1		All items	2.2	=AVERAGE(B2:B6)		
3	Oranges	2		Apples	2	=AVERAGEIF(A2:A6, D3, B2:B6)		
4	Lemons	3						
5	Oranges	2						
6	Apples	3						

MAX & MIN

The MAX and MIN formulas in Excel get the largest and smallest value in a set of numbers, respectively. For our sample data set, the formulas will be as simple as:

=MAX(B2:B6)

=MIN(B2:B6)

	A	B	C	D	E	F	G
1	Item	Qty.		Max	3	=MAX(B2:B6)	
2	Apples	1		Min	1	=MIN(B2:B6)	
3	Oranges	2					
4	Lemons	3					
5	Oranges	2					
6	Apples	3					

COUNT & COUNTA

If you are curious to know how many cells in a given range contain numeric values (numbers or dates), don't waste your time counting them by hand. The Excel COUNT function will bring you the count in a heartbeat:

COUNT(value1, [value2], ...)

While the COUNT function deals only with those cells that contain numbers, the COUNTA function counts all cells that are not blank, whether they contain numbers, dates, times, text, logical values of TRUE and FALSE, errors or empty text strings (""):

COUNTA (value1, [value2], ...)

For example, to find out how many cells in column B contain numbers, use this formula:

=COUNT(B:B)

To count all non-empty cells in column B, go with this one:

=COUNTA(B:B)

In both formulas, you use the so-called "whole column reference" (B:B) that refers to all the cells within column B.

The following screenshot shows the difference: while COUNT processes only numbers, COUNTA outputs the total number of non-blank cells in column B, including the text value in the column header.

	A	B	C	D	E	F	G
1	Item	Qty.		Number count	5	=COUNT(B:B)	
2	Apples	1		Non-blank count	6	=COUNTA(B:B)	
3	Oranges	2					
4	Lemons	3					
5	Oranges	2					
6	Apples	3					

IF statement

Judging by the number of IF-related comments on our blog, it's the most popular function in Excel. In simple terms, you use an IF formula to ask Excel to test a certain condition and return one value or perform one calculation if the condition is met, and another value or calculation if the condition is not met:

IF(logical_test, [value_if_true], [value_if_false])

For example, the following IF statement checks if the order is completed (i.e. there is a value in column C) or not. To test if a cell is not blank, you use the "not equal to" operator (<>) in combination with an empty string (""). As the result, if cell C2 is not empty, the formula returns "Yes", otherwise "No":

=IF(C2<>"", "Yes", "No")

	A	B	C	D
1	Item	Qty.	Delivery date	Completed?
2	Apples	1	1-Sep-19	Yes
3	Oranges	2	2-Sep-19	Yes
4	Lemons	3	1-Sep-19	Yes
5	Oranges	2		No
6	Apples	3	3-Sep-19	Yes

The image shows a screenshot of an Excel spreadsheet with the formula bar at the top displaying the formula `=IF(C2<>"", "Yes", "No")`. A blue arrow points from the formula bar to cell D2 in the spreadsheet, which contains the value "Yes". The spreadsheet data is as follows:

16.2. Working data sorting and filtering

Excel offers additional sorting options, including sorting by custom lists. Custom lists are useful when you want a user-defined order that doesn't follow existing sort rules. For example, you can't use an alphabetical sort to sort the values High, Medium, and Low. If you create your own custom list, you can specify the values you want to sort by, in the order you want to sort them.

To sort data in Excel:

1. Select a cell in the column you want to sort.

2. In the Data tab, go to the Sort & Filter group. Then you have two options.
 1. To sort values in ascending or descending order based on Excel's interpretation of the column, click the Sort A to Z or Sort Z to A icons.
 2. For more sorting options, click the Sort button. You can then specify the Column, what to Sort On, and Order. With the Add Level option, you can perform a secondary level of sorting if needed.

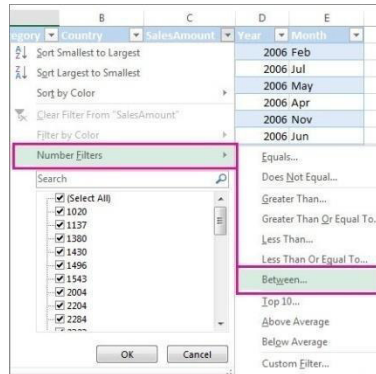
Filtering data in Excel

You can use filters to temporarily hide some of the data in a table, so you can focus on the data you want to see. When filtering, you can specify exact matches or comparisons ('more than', 'less than') or data that doesn't match specific criteria. The following comparison operators are available in Excel. You can compare two values by using the following operators. When you use these operators to compare two values, the result is a logical value—it's either TRUE or FALSE.

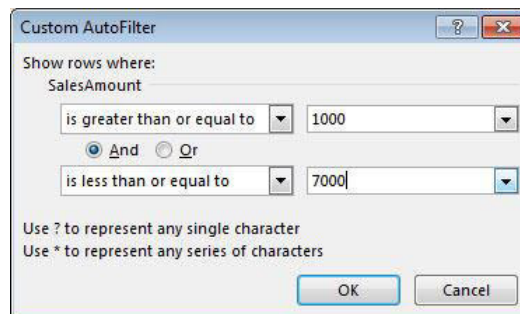
Comparison operator	Meaning	Example	Result (A1=1, B1=2)
=	Equal to	A1=B1	FALSE
>	Greater than	A1>B1	FALSE
<	Less than	A1<B1	TRUE
>=	Greater than or equal to	A1>=B1	FALSE
<=	Less than or equal to	A1<=B1	TRUE
<>	Not equal to	A1<>B1	TRUE

To create a filter in Excel:

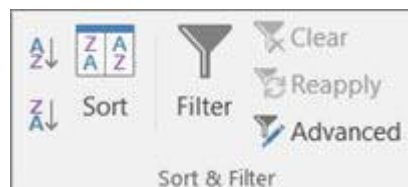
1. Select the data you want to work with.
2. Select Data > Filter from the ribbon menu.
3. At the top of your selection, select the column header arrow (grey box with downwards arrow).
4. Select Text Filters or Number Filters, and then select a comparison, such



5. Enter the filter criteria and select OK.



For more complex filtering you can use logical operators such as AND and OR to select results—depending on which criteria evaluate to true. AND will only evaluate to true if both criteria evaluate to true (e.g. $1 < 2$ AND $3 < 4$). OR evaluates to true if either criteria, or both, evaluate to true (e.g. $1 < 2$ OR $3 > 4$ would evaluate as TRUE).



16.3. Summary

Excel offers additional sorting options, including sorting by custom lists. Custom lists are useful when you want a user-defined order that doesn't

follow existing sort rules. For example, you can't use an alphabetical sort to sort the values High, Medium, and Low.

16.4. Keywords

Formula, function, sum, min and max

16.5. Terminal Questions

1. How the data values are sorted?
 2. What is meant by filtering?
 3. Write the query of min and max function.
 4. Explain about sum function.
 5. Write a short not formatting.
-

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
 - Program is set of coding or source code that will fulfil the user need or user expectation.
 - Input and output are insert data and display a result.
-

Check your Progress

1. MS-Excel to construct student _____
 2. The auto sum symbol sigma (Σ) is _____
 3. The average calculation based on _____
 4. The student results are Pass or Fail how will produce _____.
-

Glossary

Program : The set of instruction is called program.

Data : used to construct program

Input : used to raw material

Output : To display the result or value

Answer to Check your Progress

1. Data base
2. Total value of particular row or column
3. Cell value
4. IF Condition

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava(2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-17

Creating Charts

STURCTURE

Overview

Objectives

17.1. Creating charts using Excel

17.2. Print and review command using excel

17.3. Summary

17.4. Keywords

17.5. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the Creating charts using Excel and Print and review command using excel.

Objectives

After completion of this unit, you will be able to:

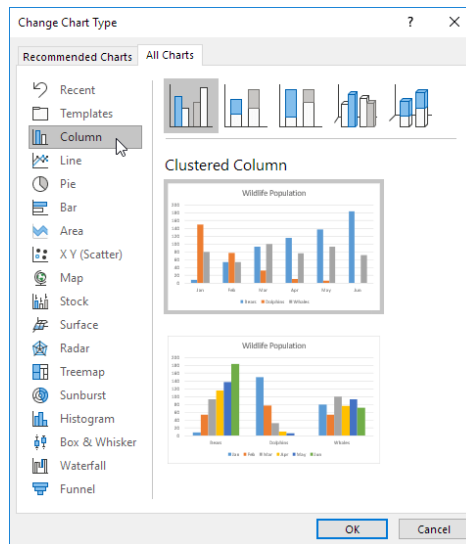
- Describe the purpose computer devices
 - Identify the roles, skills and functions of computer functionality
 - To clear idea of computer utilizations.
 - To understand the concept of chart using excel
 - To understand the working principle of print and print view command
-

17.1. Creating Charts using Excel

Charts help you visualize your data in a way that creates maximum impact on your audience. Learn to create a chart and add a trend line. You can start your document from a recommended chart or choose one from our collection of pre-built chart templates.

1. Select the data for which you want to create a chart.
2. Click INSERT > Recommended Charts.

3. On the Recommended Charts tab, scroll through the list of charts that Excel recommends for your data, and click any chart to see how your data will look. ...
4. When you find the chart you like, click it > OK.



17.2. Print and review command using Excel

1. Click the chart within your workbook.
2. Click File > Print. Tip: You can also use the keyboard shortcut, Ctrl + P, to open the Print option.
3. Click the Printer drop-down menu, and select the printer you want to use.
4. Click Print.

17.3. Summary

Charts help you visualize your data in a way that creates maximum impact on your audience. Learn to create a chart and add a trend line.

17.4. Keywords

Charts, Graph, print and print preview.

17.5. Terminal Questions

1. What is the use of chart?
2. How to construct chart?
3. What is legend?
4. How to format chart and also write the different types of chart.

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. Table value mean _____ and _____ Value
2. Chart is based on _____
3. The types charts are _____ , _____
4. Chart in how many types available based on dimension _____.

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Row and column
2. Table value
3. Bar chart and Pie chart
4. Three types

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava (2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Block-5: Introduction

The Block-5: Microsoft PowerPoint has been divided into three Units (Unit-18 to Unit-20).

Unit-18: Microsoft PowerPoint Introduction deals with the History of Microsoft PowerPoint and MS-PPT history and versions.

Unit-19: Features of PowerPoint explains about Features of PowerPoint such as File Creation, Slide Creation and Formatting.

Unit-20: Editing and Animation describes about the Editing, Adding Transitions and Animation, Print Review and Printing in PowerPoint.

In all the units of Block -5: **Microsoft PowerPoint**, the Check your progress, Glossary, Answers to Check your progress and Suggested Reading has been provided and the Learners are expected to attempt all the Check your progress as part of study.

Unit-18

Microsoft PowerPoint Introduction

STURCTURE

Overview

Objectives

18.1. Microsoft PowerPoint

18.2. MS-PPT history and versions

18.3. Summary

18.4. Keywords

18.5. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of Microsoft PowerPoint and MS-PPT history and versions.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- insert a new slide in your presentation,
- explain different slide views,
- insert graphs and diagrams in slides,
- insert pictures in slides,
- insert sound and video in slides, and
- copy presentation in Pen Drive/Compact Disc (CD).

18.1. Microsoft PowerPoint

A PowerPoint is a software from Microsoft, which is used to create presentation. Generally, a presentation is created by logical collection of individual slides that contain information on a specific topic. PowerPoint is used for preparing range of presentations on various topics including educational presentation, business presentation, social awareness presentations etc.

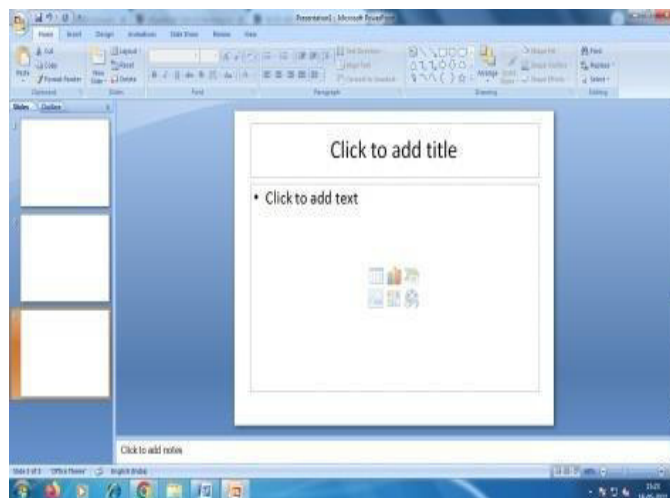
PowerPoint allows us to add different elements such as images, and audio/visual features in our presentation. These elements are called Multimedia Element. To make a multimedia presentation, we should use at least one of the following elements: Image, Audio, Video, and Animation. In this unit, you will learn working on PowerPoint. Also, you will learn how to use different multimedia elements in your presentations to make it more informative and effective.

PowerPoint Basics- Inserting a New Slide

When you make PowerPoint presentation, sometimes need arises to insert a slide between two slides to add some text, image or other multimedia components. To insert a new slide into a presentation, one of the following three ways may be used:

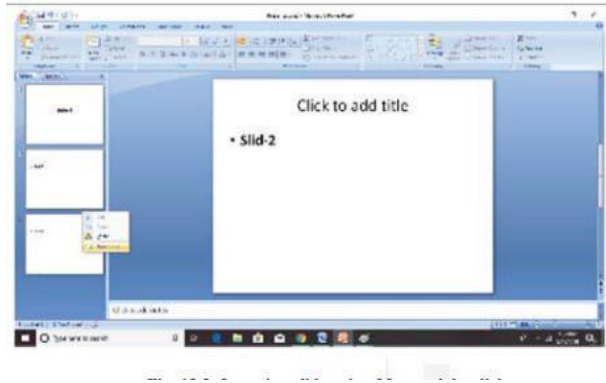
- 1) Using the New Slide tab of Home Menu to insert slide
- 2) Using shortcut key “CTRL+M” to insert a slide
- 3) Clicking at space between two sides where new slide to be inserted and then by pressing Mouse Right-Button and click on new slide option to insert slide, you may insert a slide.

Let us see how we may use these three options for inserting new slide in a presentation. Using the New Slide tab of Home Menu



Slide Views

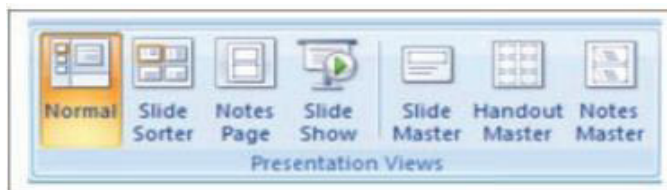
In the below figure , if you want to insert a slide between slide-2 and slide-3 then click between slide-2 and slide-3 then, insert the new slide using any of the three options given above.



Inserting slide using Mouse right click

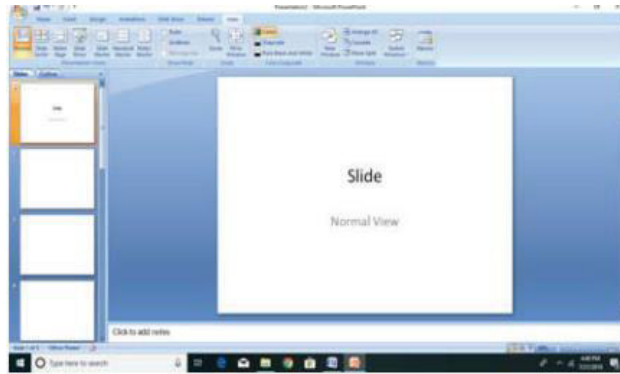
Microsoft PowerPoint has the following views, which can be used at different point of time for different purpose during preparation, modification, slide presentation and printing:

- ✓ Normal View
- ✓ Slide Sorter View
- ✓ Notes Page View
- ✓ Slide Show View
- ✓ Slide Master View
- ✓ Handout Master
- ✓ Notes Master View

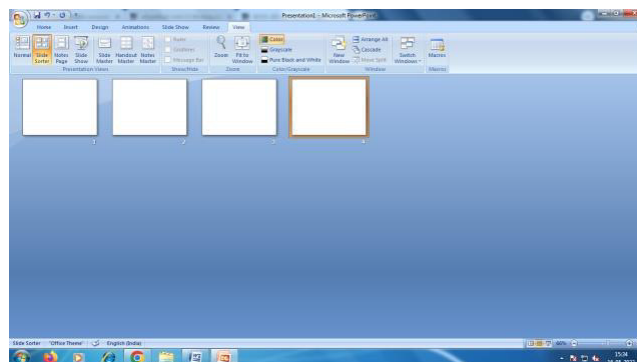


While using PowerPoint Presentation, you can quickly switch between views by clicking on the view icons.

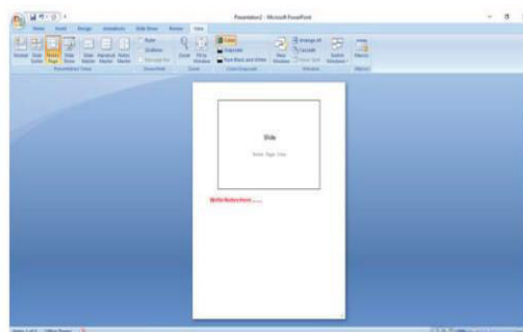
Normal View: It is the main editing view, which is used to write and design a presentation. Normal view displays slide thumbnails on the left, a large window showing the current slide, in which you do the content insertion or editing.



Slide Sorter View: This view displays all the slides in your presentation in horizontal sequenced. This view helps in selecting your slides and readjusting their positions in your presentation. You can just click and drag your slides to a new location and make meaningful grouping of the slides in your presentation. In Slide Sorter View, you cannot edit the contents of a slide. You have to switch to Slide View, where you can edit the contents.

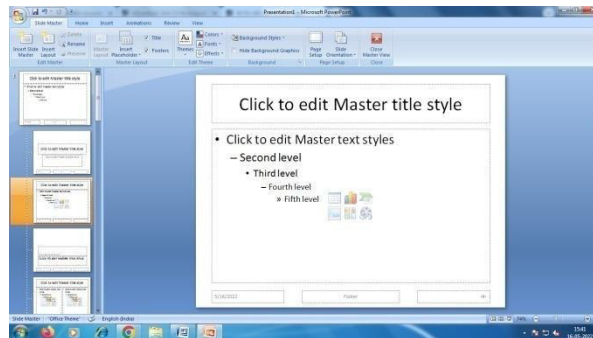


Notes Page View: The notes page is located below the slide window. This allows you to write some points as notes on that specific slide. You can print your notes for reference or also you can give notes to the audience. You can also use notes while you are making presentation of your slides.



Slide Master View: This view includes Slide, Handout, and Notes. Advantage of working in a master view is that you can make universal style changes to every slide, notes page, or handout associated with your presentation. When you want all your slides to contain the same fonts and

images, you need to change those in one place (in the Slide Master) and the changes will be applied to all your slides.



You change and manage slide layouts in Slide Master View. Every theme has a several slide layouts. Some layouts are better for text and some are better for graphics. You have to choose the layouts which are suitable for your slide content.

18.2. History and versions

On April 20, 1987, the first version of PowerPoint was released. Because we love the software so much (and we know many of you readers do, too!), we wanted to celebrate PowerPoint's 33rd birthday with a whole article dedicated to its origins, history, and use cases! 95% of presentations are created with PowerPoint, 30 Million PowerPoint presentations are given every day, and 500 million people all over the world are using the software. So without further ado, let's dive into the success story of PowerPoint - with the early beginnings and the development throughout the different versions

18.3. Summary

A PowerPoint is a software from Microsoft, which is used to create presentation. Generally, a presentation is created by logical collection of individual slides that contain information on a specific topic.

18.4. Keywords

PowerPoint inserts, delete, show and slide.

18.5 Terminal Questions

1. What is use of power point?
2. What are the advantages of power point?
3. Write about slide show and view.
4. Write about transition.
5. How the image and picture insert into PowerPoint?

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. PowerPoint is used to _____
2. PowerPoint is based on _____
3. PowerPoint is add table is _____
4. Table and Image are _____ in slide is possible.

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Deliver summary in short form
2. Slide
3. Possible in slide
4. Insert

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava (2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-19

Features of PowerPoint

STURCTURE

Overview

Objectives

19.1. PPT file creation

19.2. Slide creation

19.3. Formatting of slide

19.4. Summary

19.5. Keywords

19.6. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the basic functionality of PPT file creation, Slide creation and Formatting of slide.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To understand slide show creation
- To understand different types of transition to apply
- To understand slide designing

19.1. PPT file creation

Create a presentation in PowerPoint

With PowerPoint on your PC, Mac, or mobile device:

- Create presentations from scratch or a template.
- Add text, images, art, and videos.

- Select a professional design with PowerPoint Designer.
- Add transitions, animations, and motion.
- Save to OneDrive, to get to your presentations from your computer, tablet, or phone.
- Share and work with others, wherever they are.

Create a presentation

1. Open PowerPoint.
2. In the left pane, select New.
3. Select an option:
 - To create a presentation from scratch, select Blank Presentation.
 - To use a prepared design, select one of the templates.
 - To see tips for using PowerPoint, select Take a Tour, and then select Create,

Add a slide

4. In the thumbnails on the left pane, select the slide you want your new slide to follow.
5. In the Home tab, in the Slides section, select New Slide.
6. In the Slides section, select Layout, and then select the layout you want from the menu.

Add and format text

7. Place the cursor inside a text box, and then type something.
8. Select the text, and then select one or more options from the Font section of the Home tab, such as Font, Increase Font Size, Decrease Font Size, Bold, Italic, Underline, etc.
9. To create bulleted or numbered lists, select the text, and then select Bullets or Numbering.

19.2. Slide Creation

Add a picture, shape, and more

1. Go to the Insert tab.
2. To add a picture:
 - In the Images section, select Pictures.

- In the Insert Picture From menu, select the source you want.
 - Browse for the picture you want, select it, and then select Insert.
3. To add illustrations:
- In the Illustrations section, select Shapes, Icons, 3D Models, SmartArt, or Chart.
 - In the dialog box that opens when you click one of the illustration types, select the item you want and follow the prompts to insert it.

19.3. Formatting of slide

In the previous chapter, you learned how to massage text into perfectly indented paragraphs, columns, and lists. Now it's time for the big picture. This chapter shows you how to format slide using layouts, and how to reapply a theme or colour scheme (a list of coordinating font colours). Finally and most important when you're in a time crunch you'll learn how to turn on PowerPoint's automatic formatting options.

- Apply canned layouts to your slides. You can tell PowerPoint to put a title at the top of a slide and two content placeholders (for text, pictures, and so on) side-by-side in the body of the slide.
- Change orientation. You can change a landscape orientation (where the slide's wider than it is tall) to a portrait orientation (where the slide's taller than it is wide).
- Reposition elements. You can drag text boxes and other objects (such as pictures) around on your slide to reposition them.

Changing Background Colour

- In most cases, you won't want to change the background colour of your slides. Instead, you'll rely on the professionally designed themes that ship with PowerPoint (and that you can find for free or purchase on the Web), which coordinate text and background colour and effects into an aesthetically pleasing package.
- Of course, there's an exception or two to every rule. In the case of background colour, one exception to the don't-change-it rule is when you need to match your presentation to a specific (non-PowerPoint) corporate or organizational palette, such as the one your Marketing department uses for brochures and four-color ads.

19.4. Summary

This chapter shows you how to format slide using layouts, and how to reapply theme or colour scheme

19.5. Keywords

Slide, text, format, view and show

19.6. Terminal Questions

1. How does the font changed in slide?
2. What is slide show?
3. What is slide transition?

Let us Sum Up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. The combination of audio and video is called _____
2. Slide show apply automatically based on _____
3. Slide Transition are called _____
4. Slide show is also added sound is _____.

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Multimedia file
2. Time
3. To show in different ways
4. Possible

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
3. Er. Meera Goyal, Dr. Sandeep Srivastava (2022), Computer Applications in Business, 1st Edition , SBPD Publications.

Unit-20

Editing and Animation

STURCTURE

Overview

Objectives

20.1. Editing of Power point

20.2. Adding Transition and animation in PowerPoint

20.3. Print and review using PowerPoint

20.4. Summary

20.5. Keywords

20.6. Terminal Questions

Let us Sum up

Check your progress

Glossary

Answer to check your progress

Suggested Reading

Overview

In this unit the learners will learn and study about the Editing of Power point Adding Transition and animation in PowerPoint Print and review using PowerPoint.

Objectives

After completion of this unit, you will be able to:

- Describe the purpose computer devices
- Identify the roles, skills and functions of computer functionality
- To clear idea of computer utilizations.
- To understand the concept Editing of slide show.
- To understand the concept of animation and image moving in slide.

20.1. Editing of Power point

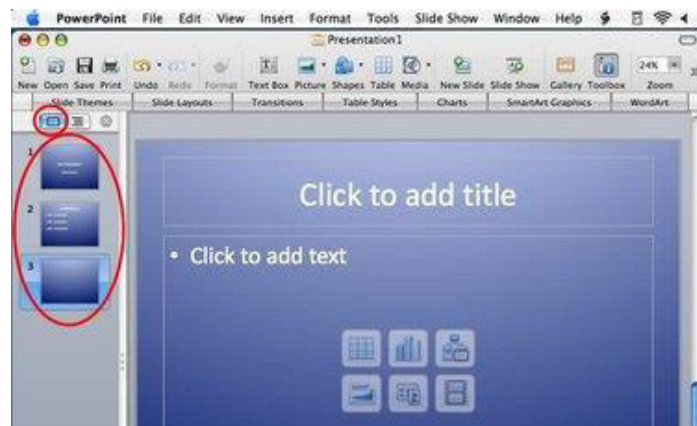
Microsoft PowerPoint is part of the Microsoft Office Suite program library and is used to create slide presentations. To edit a PowerPoint presentation, it must be in PowerPoint format (.ppt or .pptx). For example, a presentation that has been converted to a QuickTime movie and is now

in .mov format, cannot be edited in PowerPoint. However, if you still have the original .ppt or .pptx file used to create the movie, you can edit that and create an updated movie.

Step 1

Open the PowerPoint file with your PowerPoint Software. Click the "New Slide" button at the top of the screen if you want to add a new slide to the presentation file.

Step 2



Slide Thumbnails

Click the slide thumbnails along the left side of the screen to move to a specific slide you want to edit.

Step 3

Click the "Slide Sort View" button in the bottom left of the corner to view all your slides as thumbnails. Then, click and drag to rearrange the slide order. Click the "Slide Themes" button at the top of the screen if you want to change the colour theme for the entire presentation to something new.

Step 4

Selected Object

Click slide objects to select them. Press delete if you want to remove a selected object. Use the formatting palette to change settings for a selected object.



20.2. Adding Transition and animation in Power point

Add Animations

You can animate the objects on your PowerPoint slides. PowerPoint provides four types of animations: Entrance, Emphasis, Exit, and Motion Paths. An Entrance animation determines the manner in which an object


appears on a slide; for example, an object can move onto a slide. An Emphasis animation does something to draw attention to an object; for example, the object can become larger. An Exit animation determines the manner in which an object leaves a slide; for example, an object can move off a slide. A Motion Paths animation determines how an object moves around a slide; for example, an object can move from left to right.

To choose an effect:

1. Select the object you want to animate.
2. Choose the Animations tab.
3. Click the Custom Animation button  Custom Animation . The Custom Animation pane appears.
4. Click the Add Effect button  Add Effect . A menu appears.
5. Choose the type of effect you want. A submenu appears.
6. Click the effect you want. PowerPoint applies the effect.

To modify an effect:

1. Click the down arrow next to the Start field on the Custom Animations pane and then select the start method you want.
2. Click the down arrow next to the Property field on the Custom Animations pane and then select the property you want. The Property field might be labeled Direction, Size, or some other property.
3. Click the down arrow next to the Speed field on the Custom Animations pane and then select the speed you want to apply to your animation.

To preview the animation, click the Play button  Play on the Custom Animations pane.

20.3. Print and review using power point

To preview your file, click Print Preview. To go back to your file and make changes before you print it, click the File tab again. To print your file and check or change the properties for your printer, click Print. To print your file without checking or changing the properties for your printer, click Quick Print.

The Print Preview feature lets you see how your PowerPoint slides will appear before you print them. To use the PowerPoint Print Preview feature, choose Office— Print — Print Preview. Or you can click the

Preview button from the Print dialog box. Either way, a preview of the printed page appears.

Print Your PowerPoint Poster- To print a poster: Go to File > Print. On a Mac, in the Print dialog box, check the print settings, select Scale to Fit Paper, and then select Print. Select Print Full Page Slides.

20.4 .Summary

The Print Preview feature lets you see how your PowerPoint slides will appear before you print them.

20.5. Keywords

File, button, animation, view and display

20.6 Terminal Questions

1. What is meant by effect in ppt?
2. How does the ppt will display different method?
3. What are the user of print command?

Let us Sum up

In this unit you have learned the followings:

- Creating documents are business system
- Program is set of coding or source code that will fulfil the user need or user expectation.
- Input and output are insert data and display a result.

Check your Progress

1. The DEL key is used to _____
2. Adding table content in PowerPoint is _____
3. Text colour and text size are arranged in PowerPoint is _____
4. Adding animation in PowerPoint is _____ file .

Glossary

Program	:	The set of instruction is called program.
Data	:	used to construct program
Input	:	used to raw material
Output	:	To display the result or value

Answer to Check your Progress

1. Delete particular data
 2. Possible
 3. Editing
 4. Multimedia file
-

Suggested Reading

1. H N Tiwari and Hem Chand Jain (2020), Computer Applications in Business CBCS (Choice Based Credit System), 6th Edition, Taxmann Publications.
2. Dr. Sandeep Srivastava, Dr. Mirza Shab Shah, Er. Meera Goyal (2021), Computer Applications in Business (Latest Edition), 1st Edition, SBPD Publications.
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WEB LINKS

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https://www.oakton.edu/academics/academic_departments/computer_app_business/index.php.

<https://visionarybusinessperson.com/computer-application-in-business/>

Model End Semester Examination Question Paper

Master of Business Administration (MBA)

Course Code: **DCMBA-17**

Course Title: **Computer Applications for Business**

Max. Marks: 70

Time: 3 hours

PART – A (10x2 =20 Marks)

Answer any TEN questions out of TWELVE questions

[All questions carry equal marks]

1. List the main uses of computer
2. Examine the role of memory management.
3. List the three basic devices of computer.
4. Justify the importance input devices.
5. Predict the importance of output devices.
6. Outline the diagram of computer systems.
7. Explain the role of primary memory.
8. Outline the importance central process unit.
9. Categorize different types of computer systems
10. Comment on shortcut keys in cut, copy and paste.
11. Summarize the Advantages and Disadvantages of computer systems.
12. Elaborate the generation of computers.

PART – B (5X8=40 Marks)

Answer any FIVE questions out of SEVEN questions

[All questions carry equal marks]

13. Discuss the characteristics primary and secondary memory.
14. Discuss the first generation of computer.
15. Explain the uses of Ms-word document.
16. Explain about Ms excel and its uses.
17. Explain the values central process and arithmetic logical unit.
18. Summarize the different computer based technology.
19. Draw a sketch of uses of PowerPoint presentation.

PART - C (1x10=10 Marks)

CASE STUDY (Covering the Whole Course)

20. Write a mail merge command for the following documentation, assume that you have invite your friends for the New year celebration at your office to create one get to gather function and write your friend a letter to at least 25 members using mail merge wizard, based on one document is letter another one document is your friend envelop address using table format.

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BLOCK I - INTRODUCTION
UNIT 1 - HISTORY OF COMPUTER – DEFINITION
11

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