MRS. LEENA J JACOB

CLASS : IX

SUBJECT : COMPUTER APPLICATION

BOOK: COMPUTER APPLICATION (DR. VIPAN ARORA) DINESH
        PUBLICATION.
        ONE TWO LINE COPY 200 PAGES.

NOTE:
*FOR NOW STUDENTS NEED NOT WORRY ABOUT THE TEXT BOOK OR
  COPY.

*THIS PDF FILE IS PROVIDING YOU WITH NOTES OF THE FIRST CHAPTER,
  WHICH SHOULD BE WRITTEN IN ANY   ROUGH COPY.

*ASSIGNMENT IS ALSO PROVIDED AT THE END OF THE CHAPTER WHICH
  SHOULD BE DONE, IN THE SAME COPY.

CHAPTER 1: COMPUTER SYSTEM OVERVIEW

- COMPUTER IS A CACULATING DEVICE WHICH PERFORMS MATHEMATICAL CALCULATIONS AT ENORMOUS SPEED
- COMPUTER IS BASICALLY A DATA PROCESSING MACHINE., A MULTIMEDIA DEVICE FOR ENTERTAINMENT

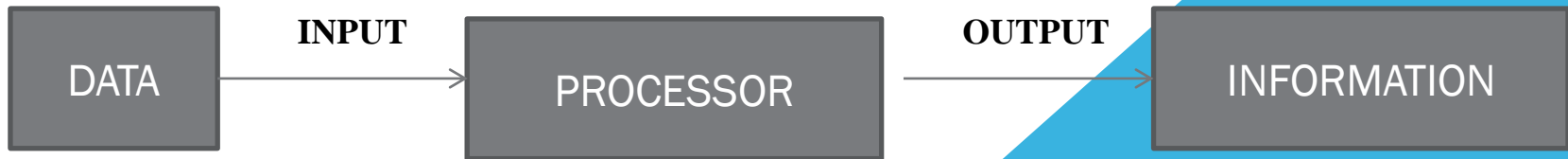- **COMPUTER IS DERIVED FROM THE WORD COMPUTE WHICH MEANS TO CALCULATE.**

DEFINITION OF A COMPUTER –

ACOMPUTER IS AN ELECTRONIC DEVICE CAPABLE OF ACCEPTING DATA THROUGH INPUT DEVICES, PROCESSING DATA WITH THE HELP OF CENTRAL PROCESSING UNIT , STORING PROCESSED DATA (INFORMATION) AND INTERMEDIATE DATA IN THE MEMORY AND DISPLAYING MEANINGFUL RESULT USING OUTPUT DEVICES.

TWO IMPORTANT TERMS –   **1) DATA**   **2) INFORMATION**

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┌──────────┐   INPUT    ┌──────────────┐   OUTPUT   ┌──────────────┐
│   DATA   │ ─────────> │  PROCESSOR   │ ─────────> │ INFORMATION  │
└──────────┘            └──────────────┘            └──────────────┘
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DATA	INFORMATION
• UNORGANISED FACTS AND FIGURES	• PROCESSED, ORGANISED AND STRUCTURED DATA.
• RAW AND NOT SPECIFIC	• MEANINGFUL AND SPECIFIC
• USED AS INPUT FOR COMPUTER SYSTEM	• OUTPUT DISPLAYED BY THE COMPUTER
• EXAMPLE- MARKS OBTAINED BY A STUDENT IN EACH SUBJECT	• EXAMPLE - MARKSHEET PREPARED BY THE TEACHER

DESIGN OF SOME EARLY COMPUTERS

ABACUS: Abacus is the earliest calculating machine, which was developed by Chinese . It consists of a rectangular wooden frame with horizontal rods which carry round beads. Counting is done by shifting the beads from one side to another. Abacus is still being used in China, Japan and part of Soviet Russia for Primary Education.

NAPIER BONES: The next pioneering contribution was made in 1614AD by a Scottish mathematician named John Napier. He evolved the system of the logarithm, by 1617 he had improved on his device which could perform multiplication and division as well. This was later known as Napier's bones.

PASCAL'S ADDING MACHINDE: The first mechanical calculating machine was made in 1642 by the great French mathematician and philosopher B. Pascal. His machine was a simple calculating device used for addition and subtraction purposes.

LEIBNITZ CALCULATOR: Gottfried Von Leibnitz a German mathematician developed a calculating machine that was based on the same principle as that of the PASCAL's. The only added feature was a system of shift mechanism, operating through a series of the slide.

JACQUARD LOOM : A French textile manufacture devised an automatic mechanical method of controlling weaving looms to create intricate and complex patterned woven cloth. He initiated the storage of information on a system of Punched CARD.

BABBAGE ENGINE: Charles Babbage's main aim was to devise a machine that would store and read data or information prior to working out the defined process. The first machine came to be known as the 'Difference Engine'. Babbage improved on the Difference Engine and designed a more sophisticated and larger calculating machine known as Analytical Engine. He initiated the first motion of inputting data via a device and the storage of data and information prior to the process. It is for his pioneering effort that he is known as the "Father of Computers'.

SOME EARLY COMPUTERS

MARK-1: It was between 1937-1944 the Howard Aiken, with the support of IBM, built the first automatic electro-mechanical computer capable of performing arithmetic and logical operations by a series of electrically driven mechanical relays and switches. This machine, named Mark-1 was very reliable and is regarded by some as the finished dream of Charles Babbage with respect to his Analytical Engine.

ENIAC: During the 2nd world war they need to calculate the artillery firing table, led to the invented in 1964, of the first electronic digital Computer viz ENIAC i.e. the Electronic Numerical Integrator and Calculator. The other machine produced are EDVAC(Electronic Discrete Variable Automatic Computer,1943), EDSAC(Electronic delay storage automatic computer, 1949) and UNIVAC-I (Universal Automatic Computer,1959)

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COMMUNICATION TECHNOLOGIES

COMMUNICATION TECHNOLOGY REFERS TO ALL EQUIPMENTS AND PROGRAMS THAT ARE USED TO PROCESS AND COMMUNICATE INFORMATION. THE IMPACT OF COMMUNICATION TECHNOLOGY IS AS FOLLOWS:-

1. ACCLERATES THE SPEED OF SENDING INFORMATION.
2. IMPROVES ORGANISATIONAL COMMUNICATION.
3. SPEEDS UP THE PROCESSES OF DECISION MAKING IN AN ORGANISATION.
4. INCREASES PARTICIPATION IN ORGANISATIONAL PROCESSES.
5. SUPPORTS OPEN DISCUSSION.
6. PROVIDES A VOICE TO THOSE WHO NORMALLY WOULD NOT SPEAK UP IN GROUPS.

BASICS OF COMPUTER SYSTEM

IN A DIGITAL SYSTEM THE INFORMATION IS USUALLY REPRESENTED IN THE FORM OF 0'S AND 1'S, THAT IS BINARY FORM. BINARY QUANTITIES CAN BE REPRESENTED BY ANY DEVICE THAT HAS ONLY TWO OPERATING STATES OR POSSIBLE CONDITIONS : OPEN AND CLOSED. MEANINGFUL INFORMATION IS REPRESENTED AS BITS , A GROUP OF 8 BITS MAKE A BYTE AND A GROUP OF FOUR BITS IS KNOWN AS A NIBBLE.

HARDWARE AND SOFTWARE

ALL PHYSICAL DEVICES THAT MAKE UP THE COMPUTER SYSTEM ARE KNOWN AS HARDWARE, WHILE THE SET OF INSTRUCTIONS CONSISTING OF COMPLEX CODES THAT MAKE THE COMPUTER SYSTEM WORK IS KNOWN AS SOFTWARE.

COMPONENTS OF A COMPUTER SYSTEM

THE BASIC STRUCTURE OF A COMPUTER SYSTEM IS AS FOLLOWS:-
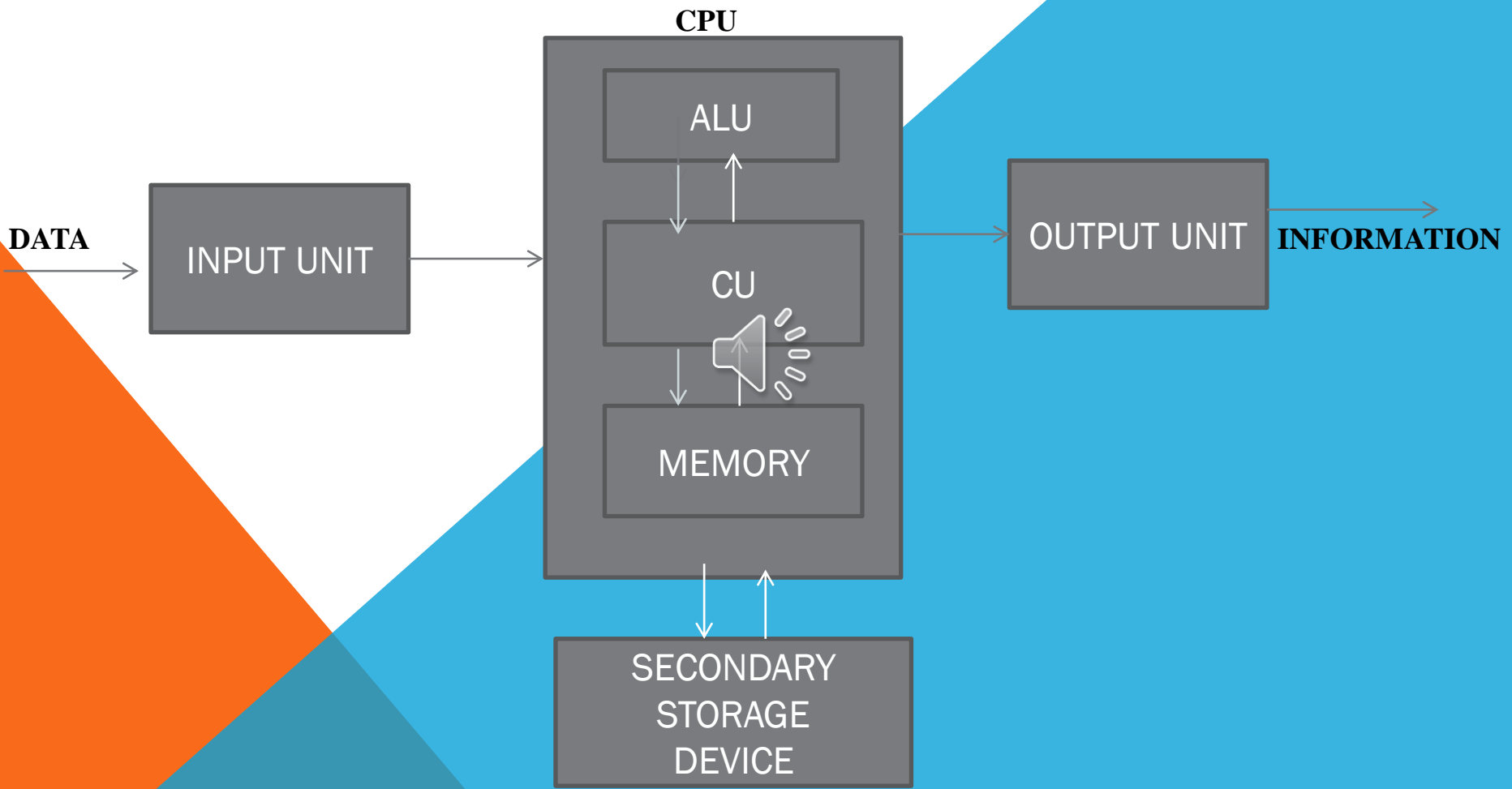
BLOCK DIAGRAM OF A COMPUTER

CHARACTERISTICS OF A COMPUTER

1. SPEED
2. ACCURACY
3. DELIGENCE
4. VERSATILE
5. POWER OF REMEMBERING
6. NO   I.Q.
7. NO FEELINGS

CLASSIFICATION OF COMPUTER

1) ACCORDING TO PURPOSE

    A) SPECIFIC PURPOSE ------ WEATHER FORECASTING, SATELLITE LAUNCHING ETC.

    B) GENERAL PURPOSE ------ USED IN SCHOOLS COLLEGES ETC.

2) ACCORDING TO TECHNOLOGY USED

    A) DIGITAL COMPUTERS ----- ACCEPTS STORES AND PROCESS DATA, COMPLEX PROGRAMMING, EXPENSIVE

    B) ANALOG COMPUTERS -----STORES DATA IN THE FORM OF CONTINOUS VARYING QUANTITIES SUCH AS CURRENT, VOLTAGE OR FREQUENCY (SPEEDOMETER, THERMOMETER ETC)

    C) HYBRID COMPUTERS ----- COMBINES FEATURES OF BOTH DIGITAL AND ANALOG (USED BASICALLY IN AI AND CAD)

3) ACCORDING TO SIZE AND STORAGE

A)   **MICRO COMPUTERS** Micro computers are small in size and based on the use of microprocessors. Microprocessor is combined or integrated circuit which contains all the elements of processing. Smaller than mainframe and have low speed, low storage capacity. Basically used for small business applications.

B)   **MINI COMPUTERS** Minicomputers are little larger than micro computes also use same microprocessor but with more speed. They can be lined with other systems to form network. Supports multiuser and multi tasking. These are used in business and commerce such as payroll, stock control etc.

C)   **MAINFRAME COMPUTERS** Mainframe computer can handle hundreds of users at same time because of high speed and large memory. They are designed for distributing system . Data is physically separate but logically they are treated as one unit. These computers are mainly used in website or internet. Act as nodes to National and International Communication network.

D)   **SUPER COMPUTERS** Supercomputers are the fastest computers. They can solve a wide range of large scale problems which require exclusive arithmetic operations . Super computer uses ` John -Von Neumann' Design. These computers are used in multiprocessing, multitasking and parallel processing of different tasks. Specially these computers are used in molecular structural analysis, weather forecasting etc.

APPLICATION OF COMPUTERS:-

A)   COMPUTERS IN BUSINESS
B)   COMPUTERS IN ENGINEERING
C)   COMPUTERS AT HOME
D)   COMPUTERS IN MANUFACTURING
E)   COMPUTERS IN SCHOOL
F)   COMPUTERS IN SCIENCE
G)   COMPUTERS IN HEALTH AND MEDICINE
H)   COMPUTERS IN AGRICULTURE
I)   COMPUTERS IN TRAINING

ASSIGNMENT: -

1.   EXPLAIN THE APPLICATION OF COMPUTERS IN ANY TWO FIELDS IN YOUR OWN WORDS.

2.   WRITE THE CONFIGURATION OF YOUR PERSONAL COMPUTER AND ALSO MENTION THE NAME OF PERIPHERAL DEVICES ATTACHED TO IT.

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