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PROBLEM STATEMENT Introduction to Components of PC.

ALGORITHM & CODE :

Components of a Computer System

Some Parts you will not see because they are inside

CPU:

The CPU (Central Processing Unit) is the brains behind your Computer. The CPU is responsible for Performing calculations and tasks that make Programs work.

RAM: A fast CPU is useless without an adequate amount of RAM. RAM is usually referred to as a computer memory - meaning it stores information that is used by running Programs or applications.

Hard Disk Drive: The Hard Disk Drive (HDD) of the Computer is where Permanent information is Stored. The larger the hard disk, the more you can fit on the drive.

Video card: The video card is a board that Plugs into the PC motherboard to give it Display Capabilities. The computer is going to

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Sound Card: Like video cards, sound cards are expansion boards used for enabling a computer to manipulate sound. As with video cards, many computers come with sound chips, making it unnecessary to buy a separate card, unless you need higher sound quality for your work.

modem: The modem allows your computer to use a telephone line to communicate and connect to the internet.

Network card: A network card allows your computer to be connected either to be others computers or to the internet if you are using a fast internet connection such as such as cable or dse.

fans:

One or more fan inside the computer keep air moving and keep your computer cool.

Cables: Numerous wires and flat, ribbon like cable provide power and communication to be various parts inside your computer.

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PROBLEM STATEMENT

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The basic components of a PC are:

1. Input Unit
2. Output Unit
3. memory Unit
4. Control Unit
5. Arithmatic logic Unit

Input Unit:

It is the unit through which data/instructions can be entered into the computers.

e.g. keyboard, mouse etc.

Output Unit:

It is the unit by which can get output from the entered input from the computer.

e.g. Monitors, Printers, Speakers etc.

memory Unit

It Stores the Information by Providing facility to the CPU actively by Providing necessary data to CPU.

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memory units are of two types:

1. Primary memory
2. Secondary memory

Primary memory :- It is also of two types :-
(i) RAM (ii) ROM

RAM: It can be randomly accessed.
memory is temporarily used because when the power goes off, all the data stored in it are erased. So, it is volatile in nature. It can be read and the data can be written into it.

ROM: It is also randomly accessed. It is only read memory unit. It is non-volatile. It can be read only but data can't be written into it.

ALU: It performs arithmatic operation like addition, subtraction etc and logical operation like AND, OR, NAND etc. It works in electronic speed but the device attached to it works in low speed. That's why Processor can handle

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all the Peripheral devices at a time.

CU: It is the unit which controls the flow of information through the Processor and co-ordination through the processor and co-ordinate the activities. the activities of other unit which are within it.

So, it is the brain within the brain as it controls what happens inside the Processor.

Processor: The microprocessor accepts inputs from the user in the form of data and instruction it process the information and instruction and then send the processed information to the output device.

motherboard: It is the main circuit of Pc. it contains the interface for the microProcessor, BIOS, memory and Storage device need to control Peripheral, devices such as monitor, keyboard, mouse etc.

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ALGORITHM & CODE :	RAM: It stores data temporarily, so it is called volatile. HDD: It is a secondary storage device for permanent data storage device i.e. placed in the system. It is similar to human brain where all the past to present events are stored. DVD Rom: The Digital Versatile disc stored digitally. A DVD writer is a DVD Player as well as writer. FDD: It is an external storage device, It is magnetic round disc enclosed in a Plastic Jacket. key board: It is a Primary Input device of the PC similar to type writer. mouse: It is used to point to the desired position in the Computer. It is also an input device. UPS: It is the device that Produces supply to the PC. Speaker: It is an output device through which CPU can Produce Sound for the user. Cabinet: Outer covering of CPU.			
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ALGORITHM & CODE :

Objectives : To understand how the different components of PC.

Components Required :

1. Cabinet
2. Smps
3. HDD
4. Processor
5. motherboard
6. Ram
7. IDE cable
8. Rom
9. System fan and CPU fan
10. Tool kit.

Description :

- The required components are taken and checked whether the components are good condition or not.
- At first & Clean the required components and it should be done with paint brush.
- All the components handled with care.
- The step by step Procedure should be followed for dismantaling and assembing of the PC.

The Procedure dismantling and assembling are as follow :-

0- remove the Power cable from computer & smps.

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1. Remove Side Panel :

Remove the side panel from the case in order to gain access to the cabinet as well as the motherboard properly.

2. Remove front external drive Panel :

Remove the drive bay blanking the spaces. So that we can install the req. drives properly and freely.

3. Remove all components one by one like Smps, HDD, CDROMDRIVE, FDD, SSD, RAM, MOTHER BOARD, CPU FAN, CPU etc. one by One.

Assembly the computer :

Step-1 : Preparce the case.

Remove the empty computer case from its packing and remove both side panels and take out any items that may be inside the case.

Step-2 : Installing the motherboard rises are installed properly, if not then install it properly so that the motherboard will not be direct contact with the metal case.

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Step-3: Installing the drives and mother board in the case.

1. Remove Side Panel

Remove the side panel from the case. In order to gain access to the cabinet as well as the mother board Properly.

2. Remove front External drive panel.

Remove the drive bay blanking the spaces. So, that we can install the required drives Properly.

3. Installing External drives:

With the blanking Places removed slide the drives into their corresponding bays.

4. Case Screws

fix the drives using the case Screw Provided It may harm the respective components of the Pc.

5 fixing the drives

Fix the optical and floppy drives into its Place with Screwed Properly.

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6. Drives Installed

The Optical and Floppy drives located in the correct bay in the PC case.

7. motherboard mask :

8. Discard Unwanted Parts:

After everything is in its place just discard the unwanted parts that were present initially in the case.

Step-4: Installing motherboard in the case.

1. Installing the Processor

Place the CPU into its slot Properly seeing the cut marks present in the Processor for identification. Then Place the Sink and CPU fan Properly and lock it with the lock Provided.

2. CPU and FAN

The CPU FAN should be Placed over the CPU to keep the Processor cool.

3. Installing the RAM

Place the RAM into its Slots . Press it to

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get the RAM locked. If the RAM is not Placed. Properly then the PC will not start. And will give a beep Sound.

4. Installing the Power Supply.

Use the SMPS (Switch mode Power Supply) Cables to give Power Supply to the Individual components of the PC.

5. Installing the HDD:

The HDD should be Placed in its Proper Place and should be connected with the ATA Cable or The SATA Cable as the Port may be.

6. Connecting the case cable :-

Connect the below cables Properly as Per Instruction.

Step-5 Closing the System case by Cover.

Once all the Parts of the PC are connected to its Slots Properly and firmly Just close the System Case and screco it Properly.

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PROBLEM STATEMENT BIOS SETUP

ALGORITHM & CODE :

What is BIOS?

The basic input/output system of our computers, commonly knows as the BIOS (Pronounced "bye-ose"). On virtually every computer available, the BIOS makes sure all the other chips, hard drives, Ports and ~~CPU~~ CPU function together.

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PROBLEM STATEMENT : FLOPPY DISK DRIVE (FDD)

ALGORITHM & CODE :

A floppy disk drive is a hardware device that reads and writes data to floppy disks - a type of removable storage that was widely ~~use~~ used from the 1970s to the early 2000s. Floppy disks were popular for storing files, transferring data between computers, and booting operating systems before USB drives and cloud storage becomes common.

Key features:

- Storage capacity: Early disks stored about 360KB, with later versions like the 3.5-inch disk holding up to 1.44 MB.
- Disk type:
  - 8 inch
  - 5.25 inch
  - 3.5 inch
- Portability: Small & light weight, making them easy to transport.
- magnetic storage: Data is stored magnetically on a thin desk inside the

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Protecting Casing.

Usage :

- Installing Software
- Backing up small files
- Booting into DOS or early windows versions.

Why it becomes absolute :

- Very limited storage capacity
- Slow read/write speeds
- Prone to physical damage and data corruption.
- Replaced by CDs, USB flash drives and cloud storage.

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PROBLEM STATEMENT: DOT MATRIX PRINTER

ALGORITHM & CODE:

A dot matrix printer is a type of impact printer that creates text and images by striking tiny pins against an ink ribbon to form dots on the paper. These dots make up characters and graphics.

Key features:

- Printing mechanism: Uses a print head with pins (usually 9 or 24) that strike the ribbon to print dots in specific pattern.
- Paper type: Works well with continuous paper.
- Speed: Slower than modern printers.
- Noise: Known for being quite loud due to the impact-based printing.

Advantage:

- Can print multi-part of form out ones.
- Durable and reliable in harsh environments.
- low printing cost over time.

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Disadvantages:

- Noisy operating
- low Print Quality
- Slower than newer printers

Common Uses :

- Invoices and receipts
- Banking systems
- logistics and shipping
- factories or warehouse

1. Print Head

- Containing a vertical array of tiny Pins
- Pins Strike the ribbon to form characters as a matrix of ~~dots~~ dots.

2. Carriage assembly

- Holds the Print head and moves it horizontally across the Paper.
- Driven by a Stepper motor and belt system.

3. Platen (Roller)

- A rubber cylinder that feeds the Paper and Provides a backing for the Print.
- Rotates to move Paper Vertically.

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4. Paper feed mechanism:
   - Can include :
     - Tractor feed (For Continuous Paper)
     - Friction feed (for Single sheet)
   - Ensures precise paper movement.

5. Ribbon cartridge
   - An ink-soaked fabric ribbon that passes between the Print head and the paper.
   - Needs regular replacement or re-linking.

Electronic Components :

6. Control circuit Board :
   - The 'brain' of the printer.

7. Stepper motors
   - One control horizontal movement of the Printer head.
   - ~~A~~ Another controls the vertical feed of the Paper.

8. Sensors :
   - Detect Paper presence, Print head position, ribbon status etc.

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Interface Components:

9. Interface Ports
   - Typically Parallel (centronics), Serial, or USB Ports for connecting to a Computer.

10. Power Supply Unit:
   - Converts AC to the required DC voltages for Printers components.

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