

18/07/23

Assignment -> 1.

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- ① Apple's Macintosh was described as a game changer for the Computer industry in 1980's. Justify the features and performance when compared to the Computers of earlier versions.

→ Graphic User Interface :-

The Macintosh introduced a revolutionary graphical user interface, which allowed users to interact with the Computer using icons, windows and a mouse. This was a significant departure from the Command line interface of earlier Computers.

→ WYSIWYG (What You See Is What You Get).

The Macintosh was one of the first Computers to incorporate WYSIWYG capabilities, meaning that the documents displayed on the screen closely resembled how they would appear when printed.

→ Desktop Publishing :-

With its graphical capabilities and WYSIWYG functionality, the Macintosh became a popular choice for desktop publishing. Applications like Aldus, Pagemaker, released for the Macintosh allowed users to design professional looking documents with ease.

→ Third party Software Support :-

The Macintosh gained significant third party Software Support, offering a wide range of applications for various tasks. Developers are attracted to the Macintosh's user friendly interface.

⇒ These features and advancements of the Macintosh set new standards for Computer usability, design and Software development.

② Classify the power Computers based on functionality and computing power and identify their applications.

①

→ Personal Computers (pc's) :-

- pc's are general purpose computers designed for individual use.
- pc's can arrange from basic entry level system to high performance machines.
- pc's are used for a wide range of applications, including web browsing, productivity tasks.

→ Work Stations :-

- Work Stations are high performance Computer designed.
- Work Stations are typically more powerful than pc's with faster processor, large memory and graphics.
- Workstations are used for demanding task that require significant computing power. Such as Computer aided design, video editing, 3D animation scientific research.

→ Servers :-

- Servers are Computers designed to serve and manage resources and data for multiple users or clients.
- Servers can easily vary widely in terms of computing power depending upon the intended use and scale of operations.

→ Super Computers :-

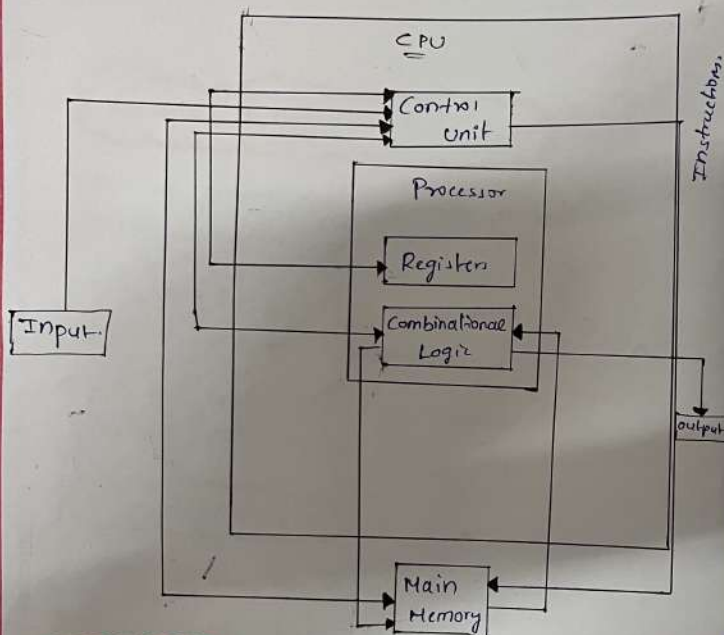
- Super Computers are high performance Computers designed for processing massive amounts of data and performing complex calculations.
- Super Computers are used for scientific research, weather modelling, climate simulation, molecular modelling, Computational fluid dynamics.

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CPU Architecture :-



→ Control Unit :-

- The control unit is responsible for co-ordinating and controlling the operations of CPU.
- The CU also manages the flow of data b/w different components of CPU and controls external devices.

→ Arithmetic Logic Unit :-

- The arithmetic logic unit performs arithmetic operations (ADD, SUB, MUL, DIV) and logical (AND, OR, NOT) on data.
- The ALU also produces results that are stored in registers or sent to the memory or output devices.

→ Registers :-

Registers are small, high speed memory locations within the CPU that hold data, instructions and addresses.

→ Memory Interface :-

The CPU has a memory interface that allows to communicate with main memory, where they are stored.

→ Cache :-

The CPU often has a small but fast cache memory, located closer to the CPU than the main memory.

→ Instruction Pipeline :-

To improve performance, many CPUs use an instruction pipeline which allows multiple instructions to be processed simultaneously.