

lasses are like boxes  
for creating objects

- Q. Classify the power computers based on functionality and computing power and identify their applications.

⇒ Personal Computers (PC's):

- \* PC's are general purpose computer designed for individual use.
- \* PC's can range 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 for specialized tasks.
- \* Work stations are typically more powerful than standard PC's, with faster processors, large memory capacities and advanced graphics capabilities.
- \* Workstations are used for demanding tasks that require significant computing power, such as computer aided design, video editing, 3D animation, scientific research.

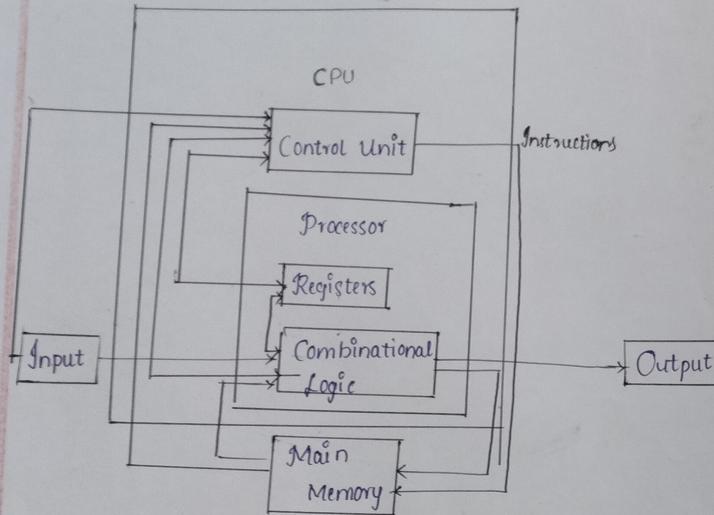
⇒ Servers:

- \* Servers are computers designed to serve and manage resources and data for multiple users or clients.
- \* Servers can vary widely in terms of computing power depending upon the intended use and scale of operations.
- \* Servers are used to host websites, manage databases, provide file storage and sharing, deliver email services and support enterprise applications and services.

⇒ Super Computers:

- \* Supercomputers are high performance computers designed for processing massive amounts of data and performing complex calculations.
- \* Supercomputers are the most powerful computers available capable of delivering exceptionally high processing speeds.
- \* Supercomputers are used for scientific research, weather modelling, climate simulation, molecular modelling, computational fluid dynamics.

## COMPUTER ARCHITECTURE:



### \* Control Unit (CU):

⇒ The control unit is responsible for coordinating and controlling the operations of CPU.

⇒ The CU also manages the flow of data between different components of the CPU and controls external devices.

### \* Arithmetic Logic Unit:

⇒ The arithmetic logic unit performs arithmetic operations (ADD, SUB, DIV & MUL) and logical operations (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 instructions and data are stored.

### ⇒ Cache :

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

⇒ Cache memory operates on the principle of locality, exploiting the fact that recently accessed data is likely to be accessed again soon.

### \* Instruction Pipeline:

⇒ To improve performance, many CPU's use an instruction pipeline which allows multiple instructions to be processed simultaneously.

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## Assignment - 1

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

### ⇒ Graphical 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.

### Compact Design

The macintosh featured a compact, all-in-one design with an integrated monitor and a built-in floppy disk drive. This was a departure from the large, bulky computer systems of the time, making the macintosh more space efficient and visually appealing.

### Developer Friendly Environment

The macintosh introduced a developer friendly environment with macintosh toolbox, a set of programming tools and resources that allowed software developers to create applications for the platform easily. The macintosh's consistent hardware and software architecture.

### Third Party Software Support

The macintosh gained significant third party software support, offering a wide range of applications for various tasks. Developers were attracted to the macintosh's user friendly interface and the opportunities it provided.

These features and advancements of the macintosh set new standards for computer usability, design and software development.