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.

In the 1980s, Apple's Macintosh computer was indeed a game changer for the computer industry, revolutionizing personal computing in several ways.

The key aspects that justified its game-changing status.

(1). Graphical user interface (GUI): The Macintosh was one of the first computers to popularize the graphical user interface, which allowed user to interact with the computer using icons, windows and menu rather than complex command-line interfaces.

(2) Mouse input: Along with the GUI, the Macintosh introduced the use of a mouse as a standard input device.

(3) Compact design: The Macintosh was relatively compact and all-in-one which meant it didn't require a separate system unit and monitor like many other earlier computers.

(4) Faster processing: The Macintosh featured more powerful processors than many of its contemporaries, providing better overall performance and multitasking capabilities.

192210430, V.V. Sunil

⑤ User-friendly software.

Apple's early commitment to developing user-friendly software contributed to the Macintosh's appeal.

⑥ Iconic design.

The Macintosh's iconic design, featuring a unique all-in-one form factor with a 9-inch black and white display and beige casing.

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

Classifying computers based on functionality and computing power.

Functionality: They are designed for complex scientific calculations, simulations, weather forecasting, nuclear research, and other tasks that require massive computational power.

Applications: Climate Modelling, Molecular dynamic simulators.

① Super computers: Super computers are the most powerfu computers available, capable of performing trillions of calculations per second.

(2) Main frame computers:

- Computing power: Mainframes have substantial computing power, typically measured in MIPS or FLOPS.
- Functionality: Mainframes are designed to manage large amounts of data and support multiple users simultaneously, making them ideal for handling critical business applications and database management.
- Applications: Financial transactions, airline reservation system.

(3) Mini computers:

- Computing power: Minicomputers are less powerful than super computers and mainframe but more powerful than PC's.

Functionality: Mini computers are used for multi-user tasks, handling moderate work loads, and running department.

Applications: Engineering simulations.

③ Explain the CPU architecture in detail.

Explaining the CPU architecture detail is a vast and complex topic.

① Control Unit (CU): The control unit is responsible for managing and coordinating the operations of the CPU. It fetches instructions from memory, decodes them and issues control signals to the other components to execute those instructions.

② Arithmetic Logic Unit (ALU): The ALU is the heart of the CPU. It performs arithmetic operations on data fetched from registers or memory. The ALU's output is stored back in registers or sent to other parts of the CPU for further processing.

③ Registers: Registers are small fast storage locations located within the CPU. They hold data and intermediate results used during the execution of instructions. Registers provide faster access than memory, making them crucial for speeding up computations.

④ Cache Memory:

Cache memory is a small, extremely fast memory that sits between the CPU and main memory.