Examrace

Competitive Exams What Are Computers?

Computers have been around since the Chinese Abacus. They are here to stay. There is a certain feel and flow to the logic that directs their activities.

Electronically, all computers work about the same. Computers vary widely in size and use. However all computers are similar in what the hardware does. So-called microcomputers (like your desktop Personal Computer (PC)) are designed for personal use, relatively low price, and modest data processing tasks.

Minicomputers are moderate sized (a small refrigerator size) and perform more complex tasks with larger amounts of data. Minicomputers might be used in a small engineering office or a local bank branch to send transaction data to a head office computer.

Mainframe computers are large, expensive and process billions of characters of data rapidly and fill entire rooms.

Finally, supercomputers are built to minimize distance between circuit boards and operate at very high speed for complex uses such as designing airplanes, animating complex movie sequences graphically or solving complex engineering formulas having billions of steps mathematically. Supercomputers are built for raw speed. Supercomputers are the main servers in the Internet System.

Some terms apply to all computers. INPUT is how data gets into a computer. The keyboard and mouse are familiar INPUT devices. OUTPUT references how data is provided from the computer. A Monitor or printer are good examples of OUTPUT devices.

A computer system includes computer hardware, software and people. A computer is a device capable of solving problems or manipulating data by accepting data, performing prescribed operations on the data, and displaying the results in the desired form. The computer is a useful tool for data (or Information) Input, storage, processing and output.

- Primary Storage or Memory is the computer's immediate data storage area-usually this is in small integrated circuit chips which hold data ONLY while power is supplied. This PRIMARY STORAGE area is thus temporary.
- More permanent Secondary Storage is used when computer power is off or when data overflows primary storage. This is usually floppy or hard disk drives but can include paper tapes, punch cards, or even non-volatile magnetic bubble memories.

History-How, Where, when Did It All Start?

The first computational device was the abacus. This has been in continuous use for thousands of years. During the 1600's the Pascal adding machine was developed. This was a mechanical device that laid the groundwork for today's odometers and gas meters. The 1800's saw many machines developed that were controlled by punch cards-weaving looms. The theoretical basis for electronic circuitry was developed in the mid 1800's.

In 1947, just after the first electronic computer was built, the transistor was invented, enabling the birth of vastly less expensive, more reliable computers. Even with transistors, computers were still too complex and costly for widespread use until the advent of the integrated circuit (IC) in 1961 made truly inexpensive computers possible at last.

From this point forth there were many firsts as computers became less mechanical, smaller, faster and cheaper. In 1971, IC technology progressed to a point where a complete central processing unit-the heart of the computer-could be integrated on a single piece off silicon, giving birth to the microprocessor. The microprocessor led to the personal computer. The Personal Computer is distinguished by its size, cost, and applications for small business and the home. The first one appeared in January 1975 and was the Altair 8800 kit. Only hobbyists bought these. Then the Radio Shack TRS 80 and Apple computers hit the market as the first pre-assembled microcomputers.

Market growth remained sluggish until two business students-Dan Bricklin and Dan Fylstra-developed a program to run on Apple computers to handle the tedious recalculations in their school assignments. This program was called VisiCalc and is the forerunner to the spreadsheet program Lotus 123.

With VisiCalc as a useful tool, Apple sales took off. Apple became the standard because all programs were written for Apple. Today in the US, Apple still dominates the school market.

In 1981 IBM introduced its PC. IBM's legacy still dominates the industry today. The PC was unable to run Apple software. Unlike Apple or other IBM products, the IBM PC had an open architecture. This means the technical details of how it operated were published with the product's introduction. This permitted hundreds of companies to write software (programs) for the IBM PC and a variety of hardware accessories. Adding IBM's sterling reputation, the open architecture did enable rapid market penetration. The microcomputer was no longer a toy, it was a business tool.

The open architecture also allowed for the generation of a host of lower cost compatible computers. IBM had traded quick initial market entry for eventual erosion of market share. In both instances, the consumers'benefit. In the early 90s Computers were applied variously in the fields of Science, Technology and Space exploration.

Initially, PCs revolutionized how businesses are run, but today, computers deepest impact are felt in the merging of Communications and Information. The emergence of the World Wide Web and the explosion of Internet usage is having far-reaching effects on all aspects of society.

Success and progress in all spheres of life, is now driven by Information and Technology. The future is bright, but it is up to every user of the technology to see that it is used to positive effect.

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