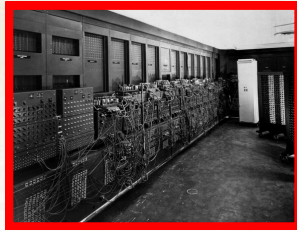The concept of generations of computers refers to the evolution of computer technology, which has gone through several phases since its inception. Each "generation" is defined by a major technological development or innovation that significantly improved the capabilities of computers. There are generally five recognized generations of computers:

1st Generation (1940s–1950s): Vacuum Tubes

- Technology: Computers in the first generation were powered by vacuum tubes, which were large, bulky, and produced a lot of heat.
- Characteristics:
- Huge size and high power consumption.
- Programs had to be written in machine language.
- Output was primarily in the form of punched cards or paper tape.
- Examples: ENIAC (Electronic Numerical Integrator and Computer), UNIVAC (Universal Automatic Computer).

2nd Generation (1950s–1960s): Transistors

- Technology: Transistors replaced vacuum tubes, which made computers smaller, faster, more reliable, and energy-efficient.
- Characteristics:
- More compact and less prone to failure.
- Still used machine-level programming languages, but assembly language was introduced.
- Magnetic core memory was used.
- Examples: IBM 7090, CDC 1604.
- Limitations: Limited by the size and complexity of early transistor-based systems.

3rd Generation (1960s–1970s): Integrated Circuits (ICs)

- Technology: The introduction of integrated circuits (ICs), which allowed multiple transistors to be placed on a single chip, greatly increased the speed and efficiency of computers.
- Characteristics:
- Smaller, more powerful, and more reliable than previous generations.
- High-level programming languages (e.g., FORTRAN, COBOL) were used.
- Batch processing and time-sharing allowed multiple users to use the

"असफलता के डर को अपने सपनों के बीच की बाधा मत बनने दें, बल्कि उसे अपने सफल होने की प्रेरणा बनाएं।"

4th Generation (1970s–1990s): Microprocessors

- Technology: The development of the microprocessor, a single-chip CPU, marked the beginning of the fourth generation of computers.
- Characteristics:
- The advent of personal computers (PCs).
- Vastly smaller size and more affordable.
- Graphical user interfaces (GUIs) became common.
- Use of high-level programming languages such as C, Pascal, and later, object-oriented programming languages.
- Examples: IBM PCs, Apple II, early versions of Windows.

5th Generation (1990s–Present): Artificial Intelligence (AI) and Parallel Processing

- Technology: This generation focuses on the development of artificial intelligence (AI), parallel processing, and quantum computing.
- Characteristics:
- Computers became more intelligent, capable of learning, and performing tasks that previously required human intervention.
- Use of parallel processing (using multiple processors to perform tasks simultaneously) and quantum computing (in early stages) for faster and more efficient computing.
- The rise of cloud computing, big data, and internet of things (IoT) technologies.
- Computers are now extremely compact, mobile (smartphones, tablets), and powerful.
- Examples: Modern PCs, smartphones, supercomputers like IBM's Watson, Google's quantum computing research.

5G
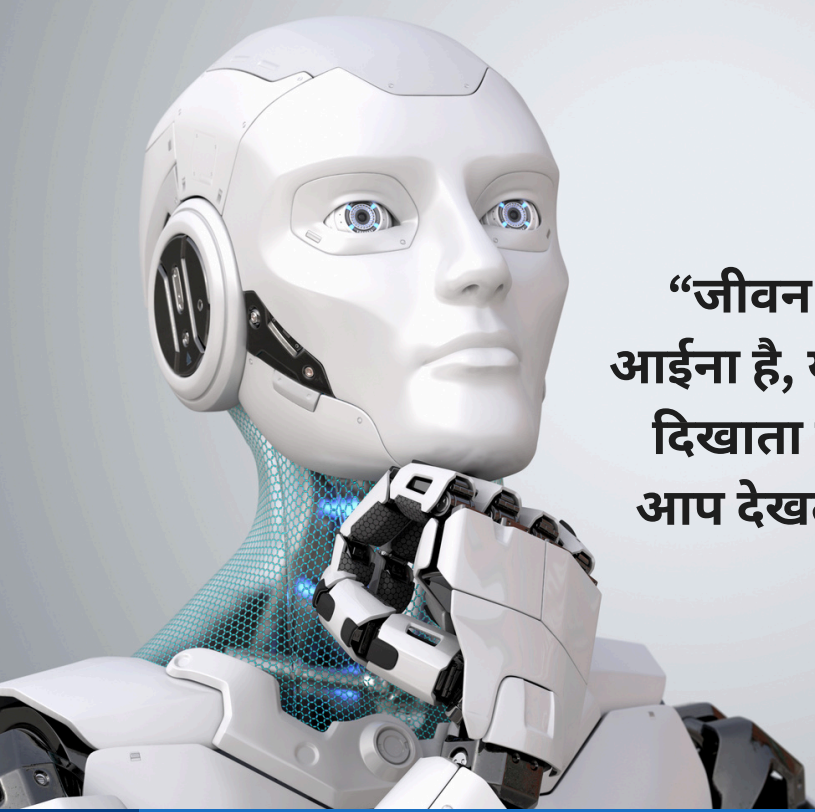
"जीवन एक आईना है, यह वही दिखाता है जो आप देखते हैं।"

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