

# EVOLUTION OF COMPUTING TECHNOLOGY

A Historical Timeline Reference

**1940s - 1956**

**First Generation: Vacuum Tubes**

Mainframes like ENIAC and UNIVAC. These machines used magnetic drums for memory and occupied entire rooms.

**1956 - 1963**

**Second Generation: Transistors**

Replacement of vacuum tubes with transistors allowed for smaller, faster, and more energy-efficient computers. High-level languages like COBOL and FORTRAN emerged.

**1964 - 1971**

**Third Generation: Integrated Circuits**

Miniaturized transistors placed on silicon chips (semiconductors). Users interacted via keyboards and monitors instead of punched cards.

**1971 - Present**

**Fourth Generation: Microprocessors**

Thousands of integrated circuits built onto a single silicon chip. Rise of the Personal Computer (PC), GUI, and handheld devices.

**Present - Future**

**Fifth Generation: Artificial Intelligence**

Based on parallel processing and superconductors. Focus on natural language processing, quantum computing, and self-learning systems.