

► Most of the contents of the table are going to be presented in detail later in the book. However, you can study the table to get a more thorough picture of the evolution of computers:

	1st Generation	2nd Generation	3rd Generation	4th Generation	5th Generation (present & future)
Main electronic component	vacuum tube	transistor	integrated circuits (ICs)	Very Large-Scale Integration (VLSI= thousands of transistors on a single microchip) and microprocessor	artificial intelligence, Ultra Large-Scale Integration (ULSI= millions of transistors on a single microchip) & Parallel Processing Method (= use of 2 or more microprocessors to run tasks simultaneously)
Memory	magnetic drums and magnetic tapes	magnetic core and magnetic tape / disk	large magnetic core, magnetic tape / disk	semiconductor memory (RAM, ROM, etc.)	
Programming Language	machine language	assembly language	high level language (FORTRAN, BASIC, Pascal, COBOL, C, etc.)	* high level language (Python, C#, Java, JavaScript, Rust, Kotlin, etc.) * a mix of both third- and fourth-generation languages	understanding of natural language (human language)
Power	consume a lot of electricity and generate a lot of heat	low power consumption, generate less heat			consume less power and generate less heat
Speed and size	very slow and very large in size	smaller in size; improvement of speed and reliability	smaller, cheaper, and more efficient; improvement of speed and reliability	smaller, cheaper and more efficient; improvement of speed, accuracy, and reliability	remarkable improvement of speed, accuracy and reliability; portable and small in size; huge storage capacity
Input/output devices	punched cards and paper tape	punched cards and magnetic tape	magnetic tape, keyboard, monitor, printer, etc.	keyboard, pointing devices, optical scanning, monitor, printer, etc.	keyboard, monitor, mouse, trackpad (or touchpad), touchscreen, pen, speech input (recognize voice / speech), light scanner, printer, etc.
Examples	ENIAC, UNIVAC1, IBM 650, IBM 701, etc.	IBM 1401, IBM 7090 and 7094, UNIVAC 1107, etc.	IBM 360, IBM 370, PDP-11, UNIVAC 1108, etc.	IBM PC, STAR 1000, APPLE II, Apple Macintosh, etc.	desktops, laptops, tablets, smartphones, etc.

Based on material available at: <https://opentextbc.ca/computerstudies/chapter/classification-of-generations-of-computers/>