

# The history and evolution of computers answers

[Technology](#), [Computer](#)



The Mesopotamia, Egyptians, Greeks, Romans, Chinese, Indians, Japanese, Koreans, Native Americans, and Russians have their own versions of the Abacus (different material was used, better suited to their own environments) 2. What were the major innovations of first-generation computers over the mechanical era? The major innovations of the first-generation computer includes the use of electronic switches, with the help of vacuum tubes they were able to make these electronic switches open or close approximately 1000 times faster than mechanical switches.

The inputs for these first-generation computers were primarily by the use of "punch cards". Information was stored on magnetic tape made of a thin unimagined coating on a very long and narrow strip of plastic tape. The memory of these computers were equivalent to about 20 words. Since these computers used a large number of vacuum tubes so a "small computer" was about the size of an entire room. Large power was necessary to run these machines. The "MANIAC", a machine built by John Macaulay and J. Prosper Cracker had a 29 power supplies to keep it up and running.

The MANIAC had 18,000 vacuum tubes which generated a very large amount of heat. A very coordinated and elaborated fan system was designed to cool it down. First generation computers had no memory (no ability to store data that can be retrievable at a later time. E. G. RAM, Heads Sods etc.) 3. What were the major innovations of second-generation computers? During the second-generation of computers, many changes were seen. Including the use of transistors, this replaced the vacuum tubes from the first-generation.

These transistors were very small and they improved speed from vacuum tubes by quite a lot, thus resulting in more compact computers, without the loss of speed. First time in history, high level languages for programming were created. With the use of assembler to create complex programs with the use of these codes. 4. What is a mainframe? " Mainframe" computers are known as very large and expensive first- and second- generation computers. They were used by major and big companies to handle corporate and business information and were very well capable of handling hundreds to thousands of users at a time.

These computers can still be used today in banks to handle all the transaction that are happening at the same time. A regular computer at that time would not be able to handle that many transactions and processes and would probably overheat because of the overload of information and data. .

What were the major innovations of third-generation computers? One major innovation and a thing that third-generation computers improved on over their former is speed and power (performance). Other things included, integrated circuit with built in transistors that were ranging in the thousands.

With integrated circuits that had wires connecting to one computer chip, that single chip was deemed to be faster and more powerful than the computers from the previous generations. They had computer chips that allowed more information to be stored on than ever before and all this large information was able to be accessed quickly at anytime. This generation of computers stand out greatly against others. Operating systems for

computers became mainstream and they had been developed to easily control the overall activity of the computer.

By using these operating systems, they were able to control the computer hardware efficiently with the software. 6. What were the major innovations of fourth-generation computers? The " Big Bang" of this generation was the development and opening of the " microprocessor". It was a single chip that could process data, as well as store information automatically in memory for further retrievable. It had the ability to produce output data. This innovation and invention led to smaller and more compact computers available at much lower prices, this indefinitely led to the making of the " PC" (or Personal Computer).

These computers were designed for specific purpose, for some who have real need for them. Computers of the previous generations weren't really designed for a purpose other than experiments and test. Thus, because of this need, many people saw real value in these computers and purchased them. More programming languages were created which provided extremely easier to use software for the " average Joe" and resulted in word processing and data spreadsheet footwear as well as some early game of the time.

These computers used large floppy disks and/or cassette tapes. . What were the major innovations of fifth-generation computers? Parallel processing means that more than one processor had the ability to do different parts of a task at the same time, which resulted in a major speed improvement as many and probably most applications at lots of different parts of a task and when different processor take up their own individual task, again, it resulted

in much faster performance. The use of computers that are networked can increase speed and allows user to complete tasks much faster.

As the prices dropped for PC's (Personal Computers) more people started buying them and thus improving their software ecosystem with multiple new applications and programs. In this generation the Internet grew help make it what it is today in the sixth-generation. The use of the internet allowed many people to connect over long distances. 8. What is a microprocessor? An integrated circuit that contains all the functions of a central processing unit of a computer but into single integrated circuit (though can sometimes be found in multiple circuits). In other words, a CUP].

It can also be defined as a chip of silicon because of its semi-conductive features) that contains a CUP]. In most cases it is noted that higher the frequency that the CPU runs at, the faster the microprocessor, though in some cases, this is not the story. For example, the fastest computer in the world at Thursday, September 5th, 2013 is the " Titian-2 (Milky-2)" and is made up of a bunch of Intel Xenon EH-2692 processors and they all run at a frequency of 2. 2 GHz. This computer is in China and belongs to the National University of Defense Technology.

My Intel 13 550 runs at 3. 2 GHz, and my friend's Intel 17 KIOSK (overcooked) runs at 4. GHz, but my main point is that these computers are no match for that Xenon. Even if they used a single processor that Xenon would still have a much greater performance. So, higher frequency of the CPU doesn't necessarily mean a faster microprocessor, but it usually does. 9. How did microprocessors change computers? Microprocessors changed

<https://assignbuster.com/the-history-and-evolution-of-computers-answers/>

computers in a way that made them faster, more reliable, and energy efficient, as well as compact than the "mechanical processors" of the older generations.

By limiting the amount of moving parts of a processor and using mainly one single integrated circuit board, it made microprocessors use less power because of the less amount of moving parts, used large amounts of transistors in them (this made them faster), more reliable by using built-in memory (cache), as well as the integrated circuit board which made them more compact (smaller or taking up less space), which also made them cheaper and more affordable to the consumer markets. 10. What were the major innovations of sixth-generation computers?

One of the main and major innovations of the sixth-generation computers are that greatly improved speed. An improvement to networking for computers included the rapid and vast growth of the Wide Area Networks (WAN). Eventually as the 21st century turned in, the number of transistors and the overall speed of microprocessors increased around every 18 months or so (this is like "Moor's Law"), parts of computer became real cheap - more affordable for others and became more compact and portable so that we now see much faster ones in our latest computers, tablets, cell phones, smart-watches, and also TV's. 11. What trends can you identify over the first six generations of computing? That technology kept advancing over the years and that every time that a new type of innovation and its computers were made, people were tired of them and decided to make another version of them. People always keep inventing innovating and they will go on till the

physical limit. We never stick to one type of computer, we try to find and make a better version of it in order to suit our hard and very much required needs.

Though what I actually saw is that things started moving from mechanical to electronic, we need to do more stuff with the least amount of effort possible. For example, we used the Abacus in our early times with math and computing, then all of sudden the 20th and 21st century saw a much major improvement that changed the world, how we communicate, how we interact. Storage space and the speed of reading/writing onto that storage space kept improving, so that it doesn't take very long to complete a desired task.

Over the generations, people wanted more speed, more portability, and less power consumption which are the things that mostly differed each generation from each other. 12. What competencies would a " computer expert" need at each generation? A " computer expert" would first need to know the how the computer first came to be. They would need to know the parts of the computers. How they used to work, how they work now, and how they might work in the future. At the first-generation they would need to know how the vacuums work and how they affect performance and other related stuff.

Second -generation, they would mainly need to know how transistors work as they were pretty much one of the main innovations of the generation. Third-generation- they would need to know much more about transistors capacitors and resistors as they were mainly involved with computer chips

<https://assignbuster.com/the-history-and-evolution-of-computers-answers/>

(which were mainstream at that time). For fourth-generation, a "computer expert", in order to be called an expert would need to have good knowledge of how a microprocessor works and about the input/output of data.

As well as some basic knowledge in computer coding in software and programs (as they just started rolling at that time). For the fifth- and sixth-generations I believe a computer expert would be required to know all about the Internet and HTML as well as other graphic and site coding used online. They should be able to create a great number of software for computers to enhance user experience and should be able to do the rest listed in this paragraph.