

# Technology

## Invention of the computer

### The computer age

Computers are a huge part of modern life, and most of us use them every day. Yet the computer was never really "invented" – it developed gradually. No single inventor thought it up.

Who invented the computer?

### Mathematical machines

A computer is basically a machine that computes. That means it takes in numbers, does mathematical calculations on them and gives out the results. In some ways it's just a much more complicated version of the abacus – a set of beads on a wooden frame. By moving the beads, you can store numbers and do calculations. People were using abacuses in Babylonia (in what is now Iraq) up to 3,000 years ago, and in some places they still do.

From the 1600s, inventors began to develop more complex calculating machines. The most important was the analytical engine, designed by English mathematician

Charles Babbage in the 1840s. He never finished building it, but it was the forerunner of modern computers.

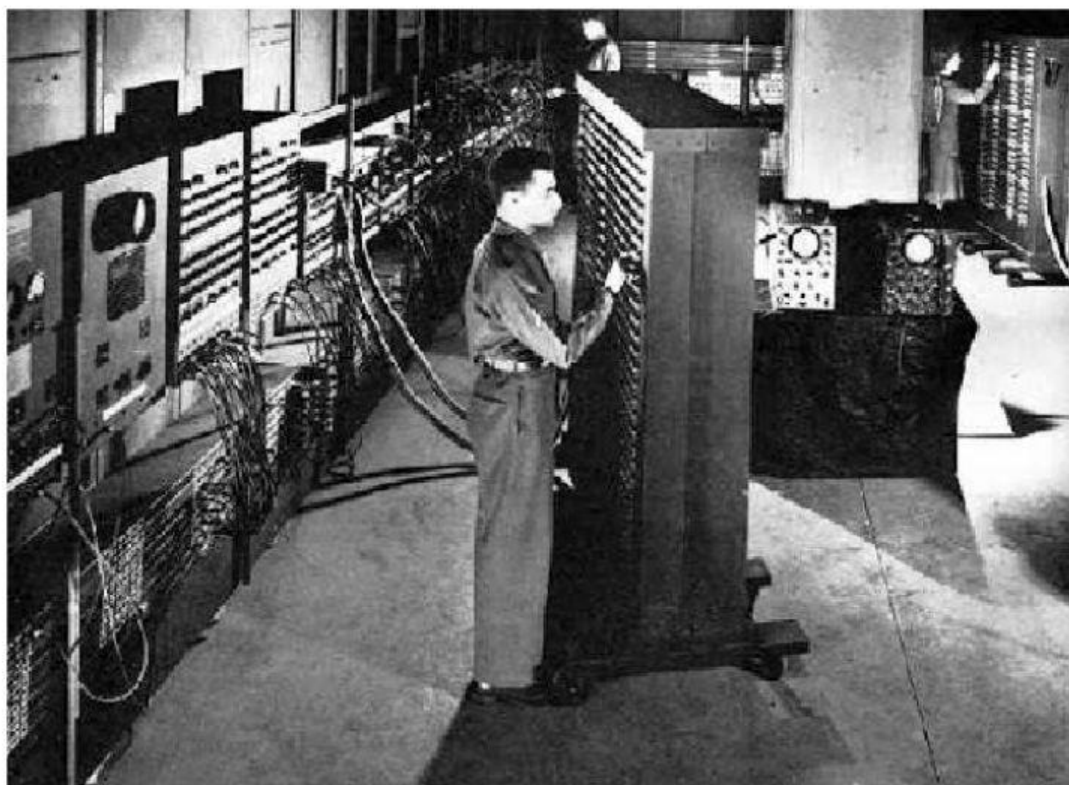
Unlike an abacus, the analytical engine could follow a set of instructions – a computer program.

A computer is a machine that \_\_\_\_\_.

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## Electric computers

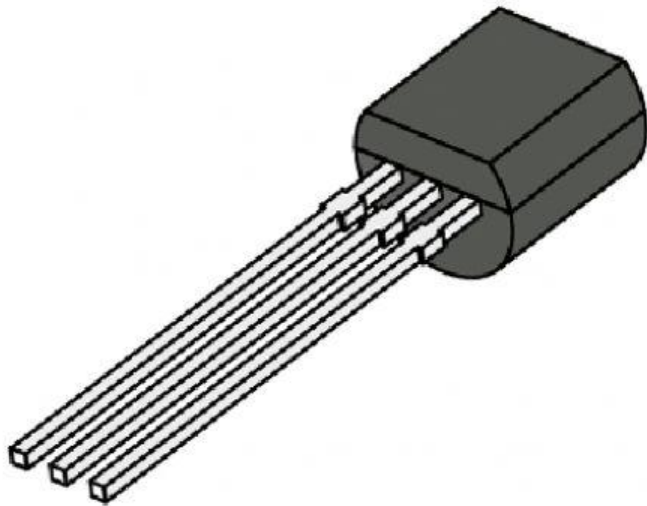
Babbage's work was forgotten for a while. But during the Second World War, governments needed computers to crack codes and plot missile paths. Instead of using cogs and wheels, inventors designed new electric computers that used devices called vacuum tubes. A flow of electricity through each tube could set it to an "on" or "off" position, allowing the tubes to store and process numbers.



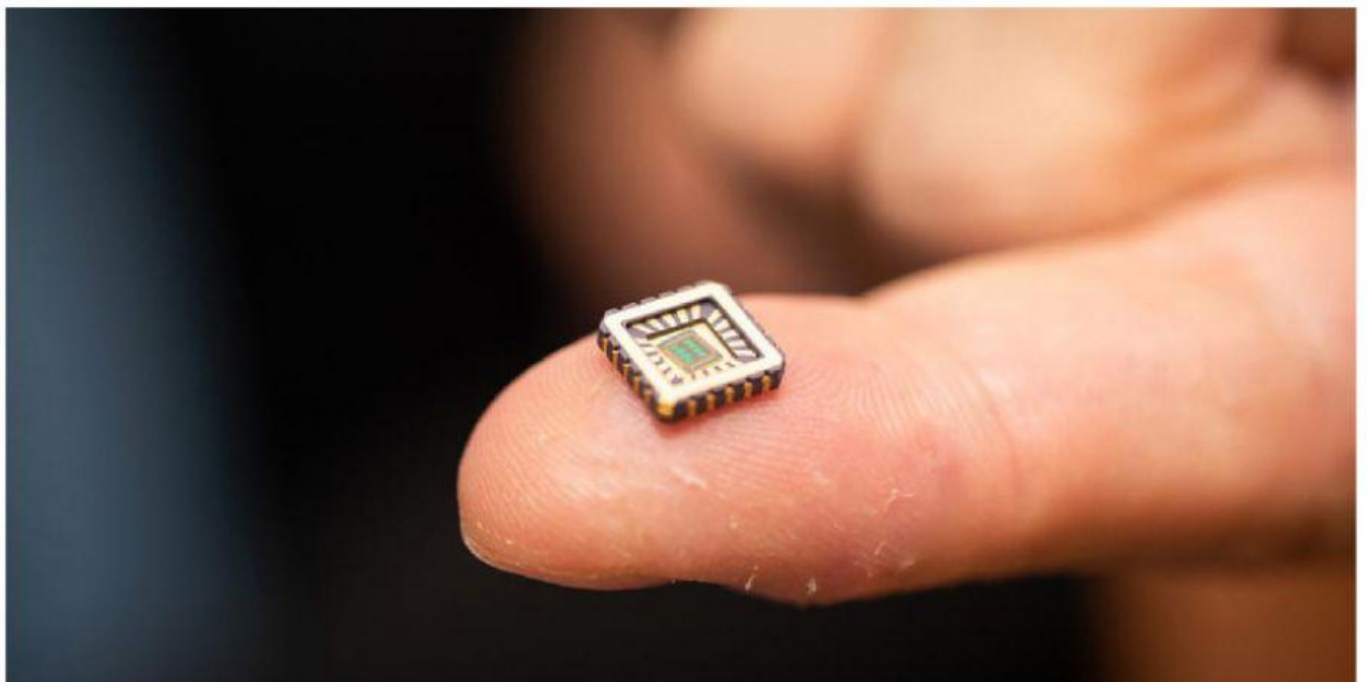


## Getting smaller

In 1947, US scientists Walter Brattain and John Bardeen invented the transistor, a kind of tiny electronic switch. Transistors were soon used to replace bulky vacuum tubes in computers. This made computers much smaller.



They became smaller still when Jack Kilby and Robert Noyce invented the integrated circuit, or silicon chip, in 1958. Instead of being made up of lots of separate transistors, a computer's electrical circuits could be fit onto a tiny slice, or chip, of the mineral silicon.



# Computers for the people

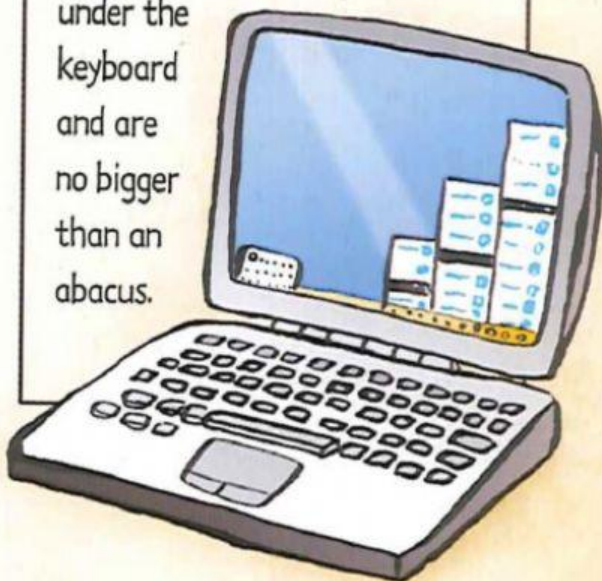
Gradually, computers became small and cheap enough to be used in offices, and then at home. The MITS Altair 8800, launched in 1975, was the first home computer. Today, most homes have at least one computer.



**Do you think this is a good invention? Why?**

## On the move

Computers can now be made small enough to carry around in a bag or even a pocket. Laptop or notebook computers have their circuits and chips hidden under the keyboard and are no bigger than an abacus.



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