

The First Electronic Computer

The first electronic computer and how it developed

Definition

- **com·put·er**

1. A device that computes, especially a programmable electronic machine that performs high-speed mathematical or logical operations or that assembles, stores, correlates, or otherwise processes information.

2. One who computes.

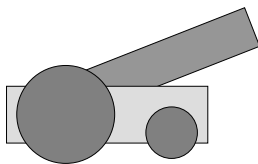
From www.dictionary.com

Origin: The Birth of the Electronic Computer

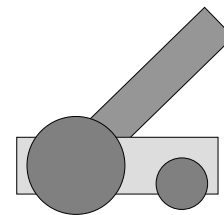
- 1944: in the middle of World War II
- The US military needed firing tables; lists of numbers to indicate which angle to aim a gun.



Firing Angle



Firing Angle



Different angles resulted in the shell being fired different distances

Firing Table

Distance (miles)	Angle (Degrees)
1	7
2	15
3	20
4	24
5	27
6	30

When the military produced a new type of gun they also needed a firing table, so that soldiers could accurately aim the gun.

The First 'Computers'

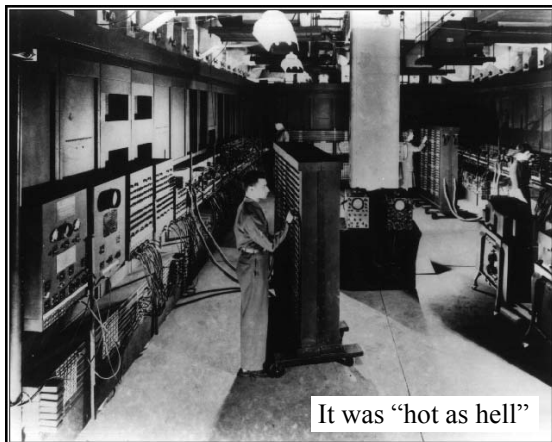
- All the men were off fighting, so the women performed the calculations
- They were called computers.
- Many new guns were being designed and there weren't enough human computers to calculate the firing tables.

Two Engineers

- John Mauchly and J. Presper Eckert wanted to build an electronic computer.
- They decided to approach the army for funding.
- They got half a million dollars and built a huge machine, the ENIAC.
- Completed in 1946 – too late for the war!

The ENIAC

- The ENIAC had 18000 valves. (A **valve** is an electronic switch that resembled a bulb).
- Every few hours one of the valves would burn out and would have to be replaced.
- Six female mathematicians were recruited to program it.
- It could multiply 500 numbers in a second.

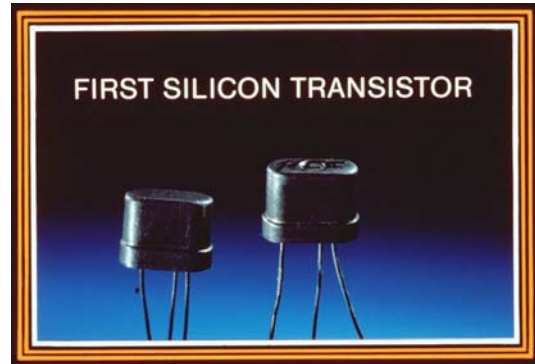


That was the brief look at the origin

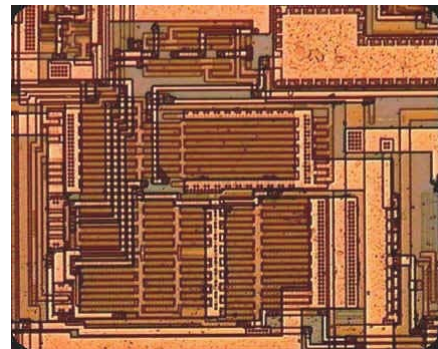
- Electronic computing is recent (less than 60 years old)
- Initially were used to solve mathematical equations. Computers are fast and don't get bored.
- Computers have become much faster, better, smaller and cheaper.
- How?

Transistors

- The Transistor was invented in 1947.
- A transistor performed the same function as a valve but was faster, cheaper and more reliable: Transistors were the real heroes of the computer revolution.
- A transistor was etched onto silicon.
- Ingenious techniques were developed to place millions of them on a single silicon chip. (An Integrated Circuit.)



Integrated
Circuits



The silicon chip - magnified

Current uses of Computers

- Solve mathematical problems.
- Store and present information.
- Process information.
- Play chess (and other games).
- DNA sequencing.
- In machinery; computers are in
 - every modern car engine (and most brakes)
 - every digital camera and ...
 - planes, boats, factories, video recorders, microwave ovens, medical equipment ...

TimeLine

- 1946 ENIAC 1st usable electronic computer
- 1947 Transistor invented
- 1978 Apple II: first popular computer
- 1984 Dell founded in Texas by 19-year old Michael Dell
- 1990 Web invented (Tim Berners-Lee) in Geneva
- 1997 A Computer (Deep Blue) defeats the Human World Chess Champion, Gary Kasparov.
- 1999 DCU doubles intake on Computing Degree.
- 2003 Panic causes students to avoid computing