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"History of computer development"

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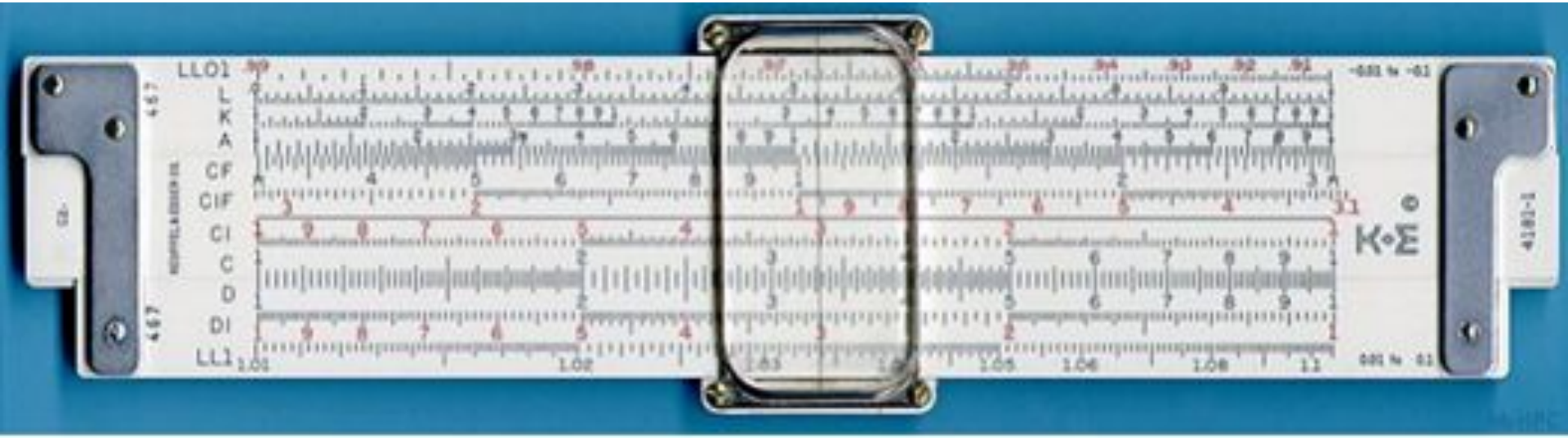
The first computers were …people

"Computer" was originally a job title: it was used to describe those human beings (usually women ☺) whose job it was to perform the repetitive calculations.

A typical computer operation back when computers were people.

In 1617 John Napier from Scotland invented ***logarithms***, which are a technology that allows multiplication to be performed via addition.

Napier's invention led directly to ***the slide rule***.

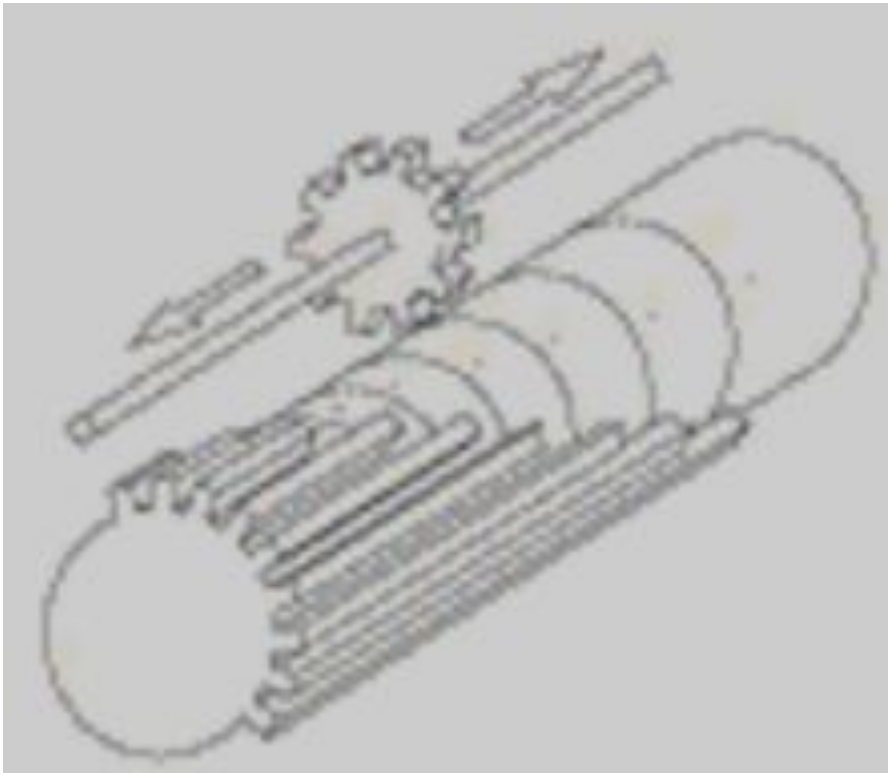


A slide rule

The Pascaline

Blaise Pascal invented it in 1642 , at age 19, to help his father who was a tax collector. Pascal built 50 of this gear-driven one-function calculator (it could only add). But they really weren't that accurate.

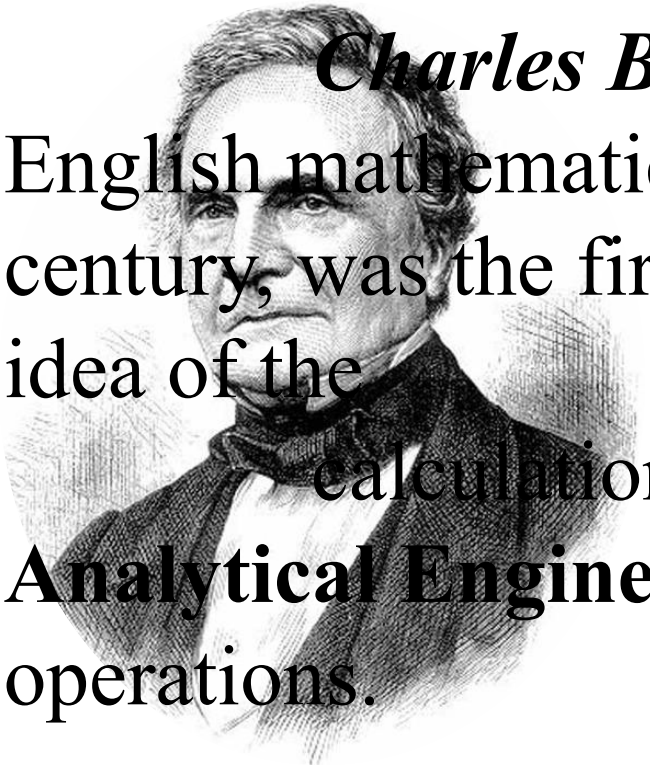
A few years after Pascal, the German ***Gottfried Wilhelm Leibniz*** built a four-function (addition, subtraction, multiplication, and division) calculator.



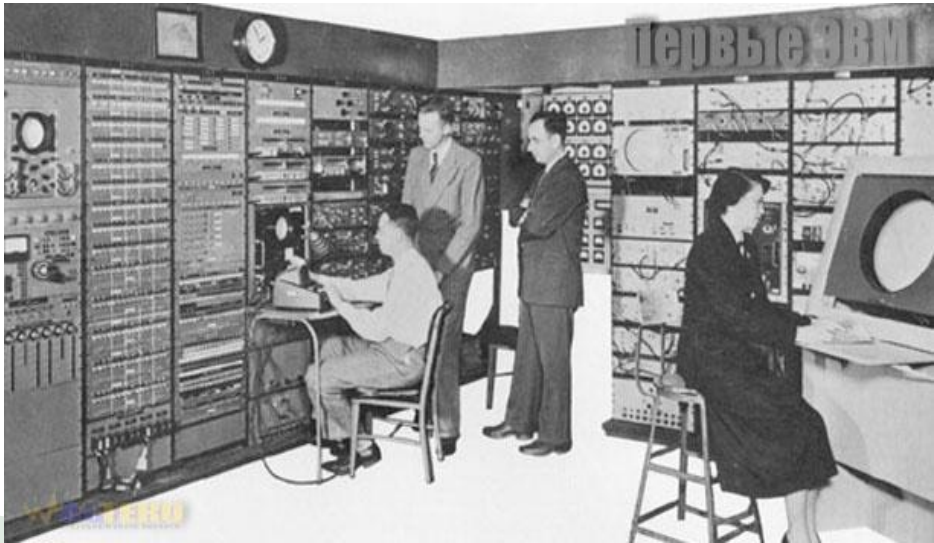

[Jacquard-card Making.]

In 1801 the Frenchman ***Joseph Marie Jacquard*** invented a power loom that could base its weave upon a pattern automatically read from punched wooden cards, held together in a long row by rope. Descendents of these punched cards have been in use ever since.

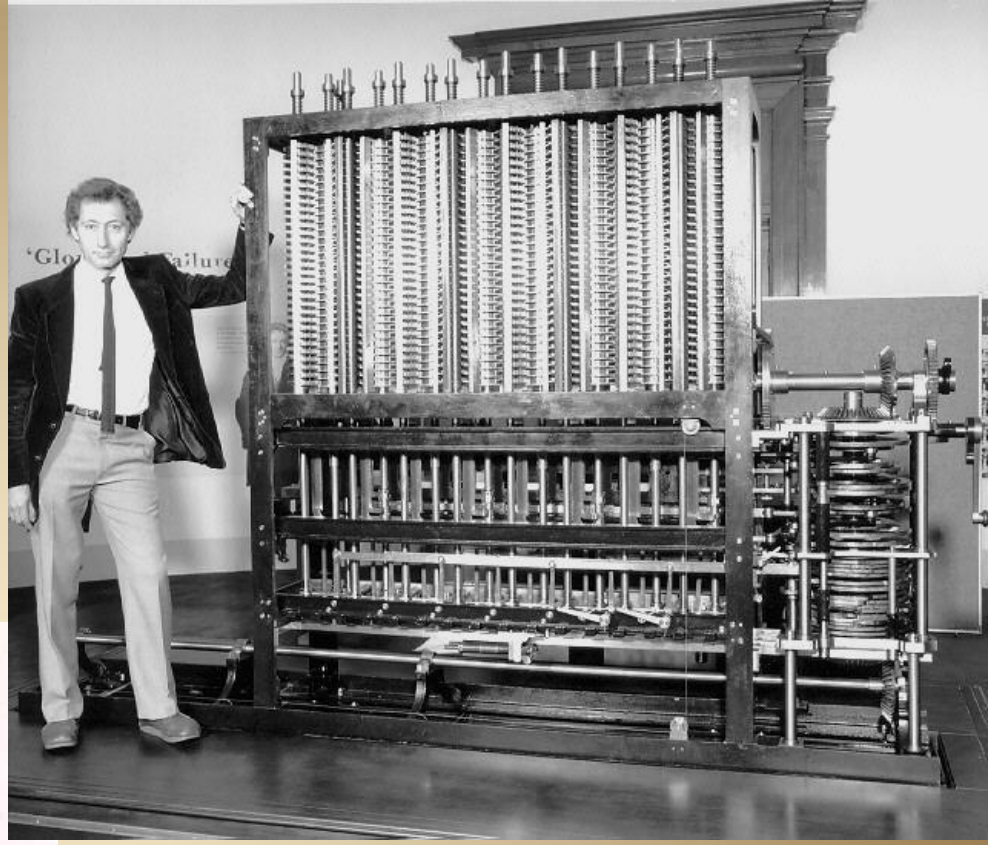
Jacquard's Loom showing the threads and the punched cards

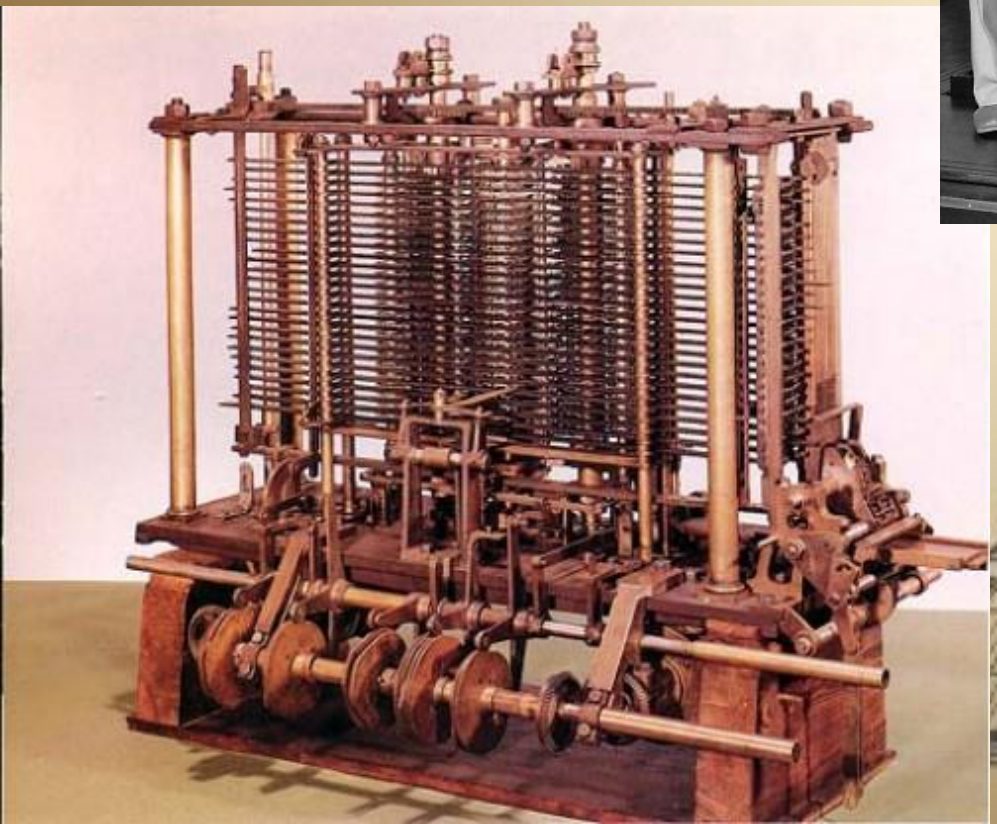


Charles Babbage, the English mathematician of the 19th century, was the first who conceived the idea of the automatic machine for complex calculations. He designed his **Analytical Engine** to perform four arithmetic operations.



Analytical Engine

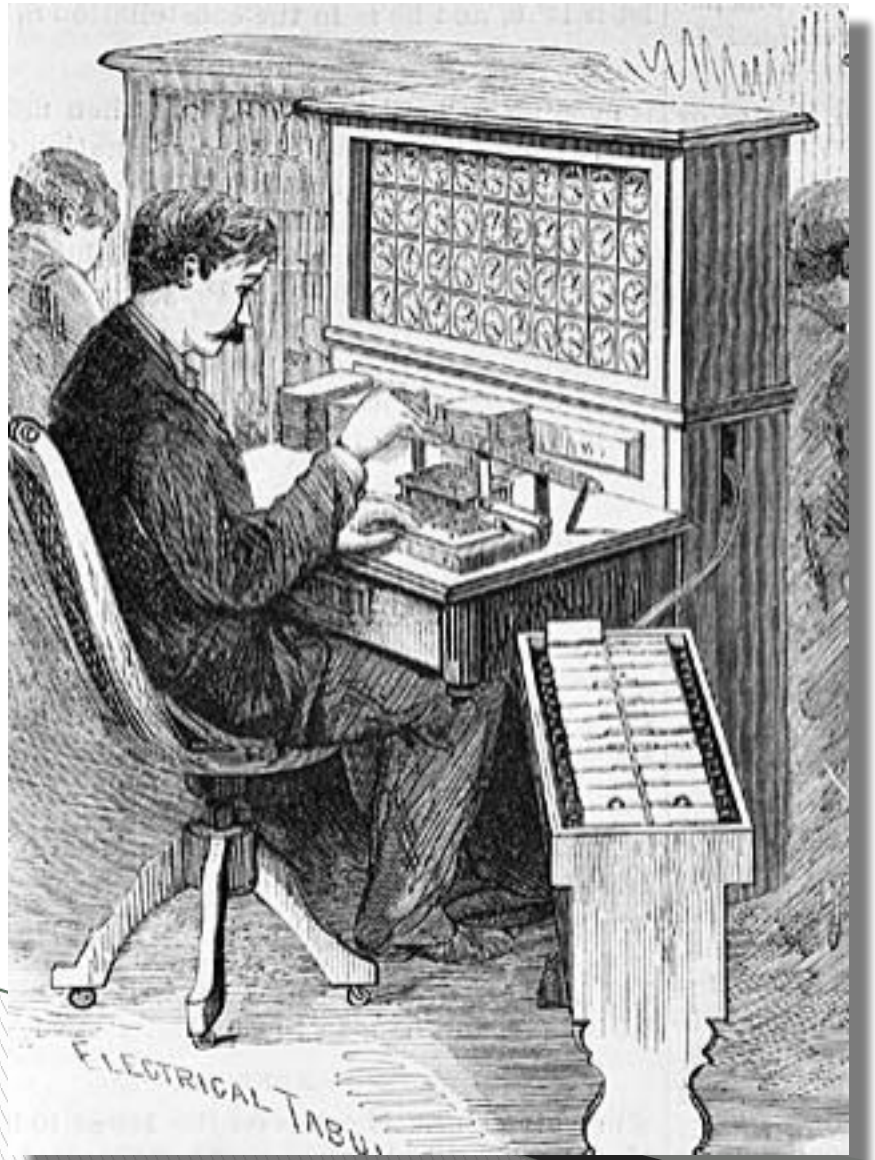




4 Charles Babbage and ***Lady*** Byron's daughter, worked ed program. Lady brilliant mathematician. She active part in Babbage's experiments.

So, it is fair to say that she was the world's first computer programmer.

Hollerith Desk



In 1884 Hollerit invented ***Hollerith Desk***. It consisted of a card reader and a large wall of dial indicators to display the results of the count.

Abb. 7 Titelseite.
Scientific American 63(1890) No. 9.
(August 30, 1890)

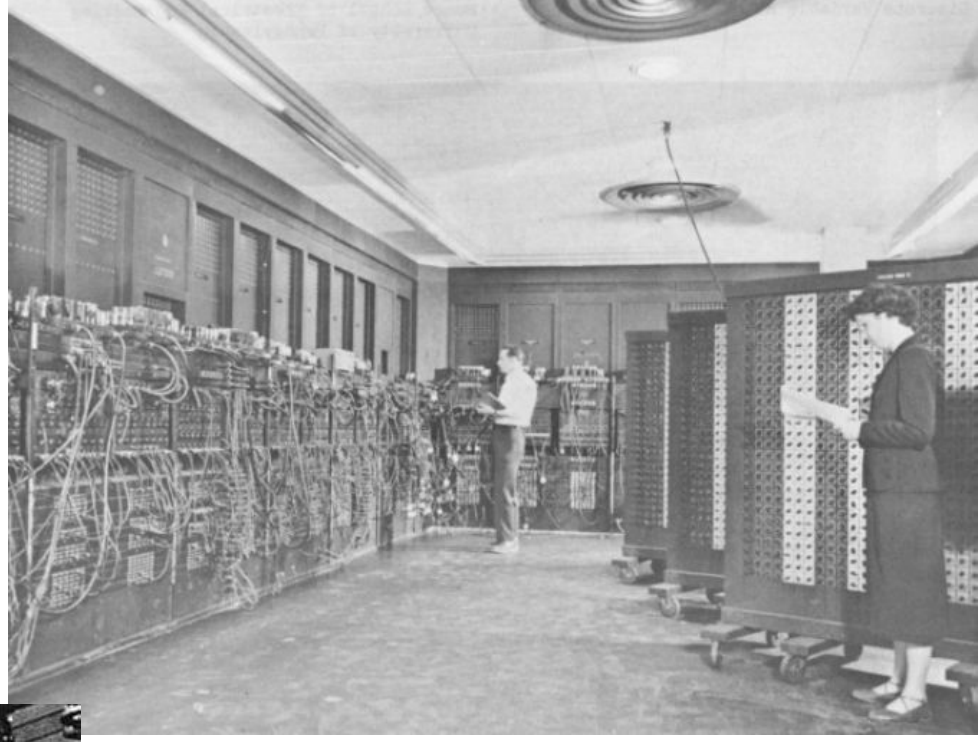
The Hollerith census machine was the first machine to ever be featured on a magazine cover.

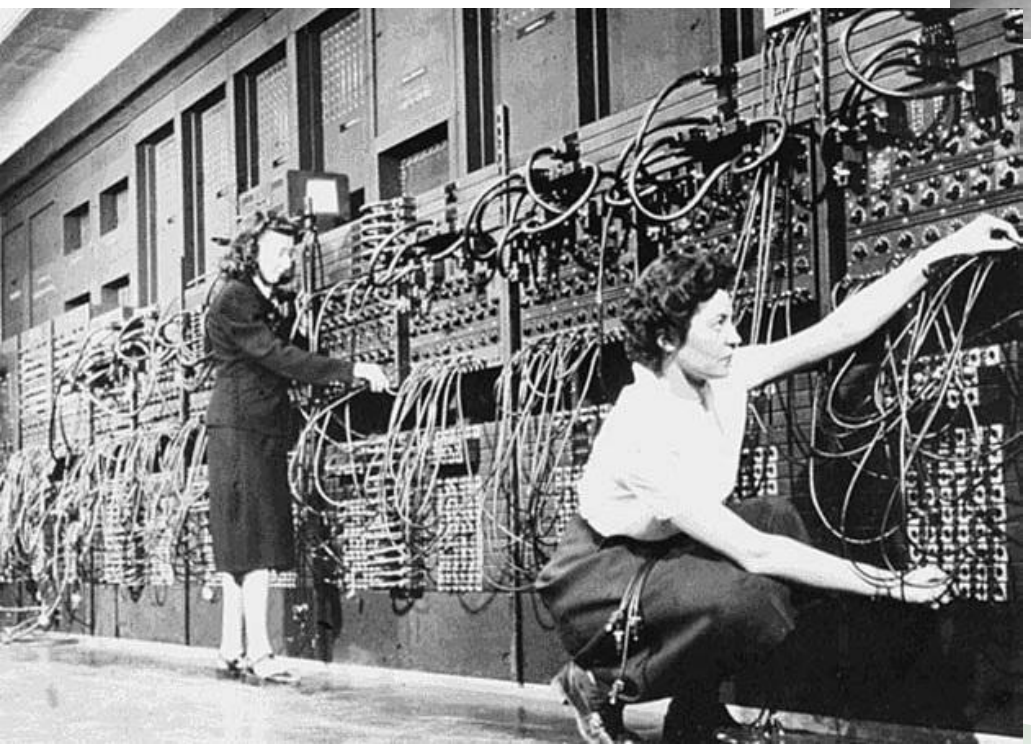
Hollerith built a company, the Tabulating Machine Company which eventually became International Business Machines,

known today as *IBM*.

In 1937 ***Dr. H. Aiken*** of Harvard University began to work at the first completely automatic digital computer which he called the ***Mark1***. He completed it in 1944. One of the primary programmers for the Mark1 was a woman, ***Grace Hopper***.

The first electronic computer, ***the Electronic Numerical Integrator and Calculator (ENIAC)***

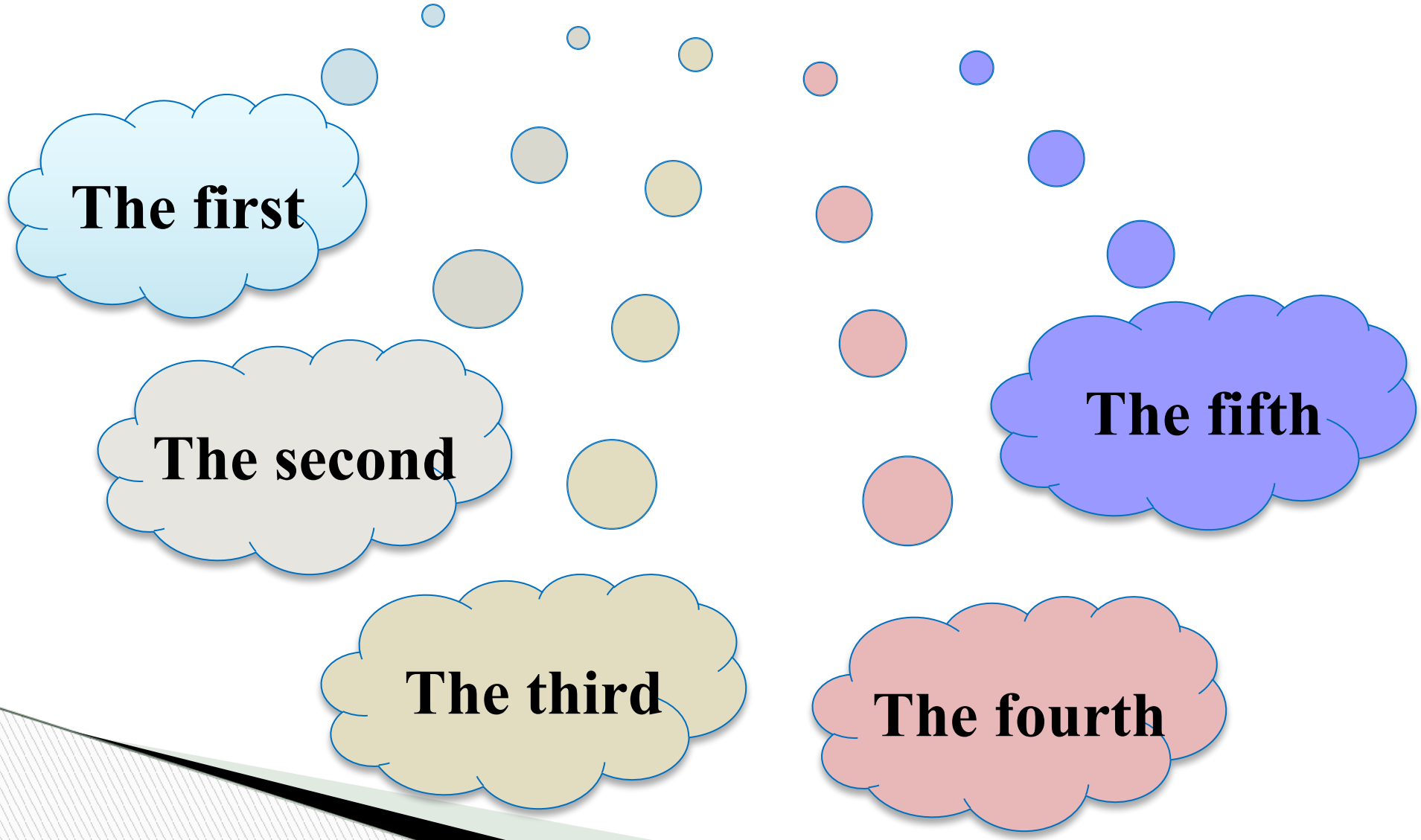




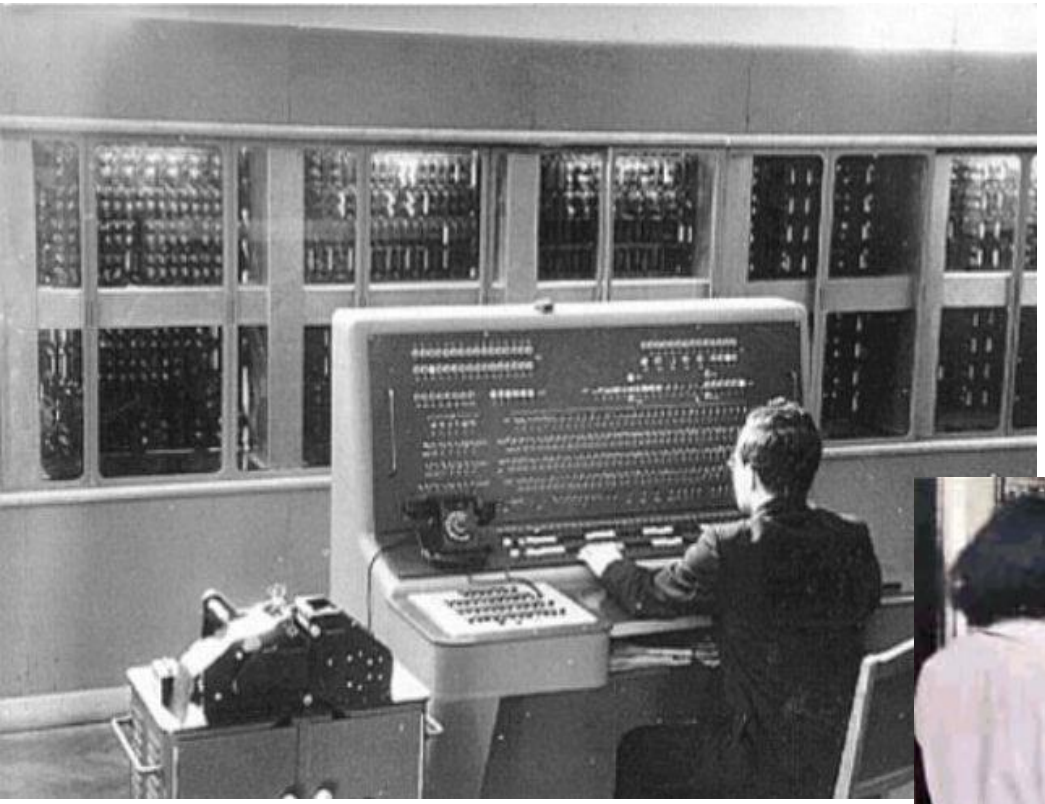
was constructed in 1946 at the University of Pennsylvania.

In 1945 John von Neuman worked out the concept of the stored program.

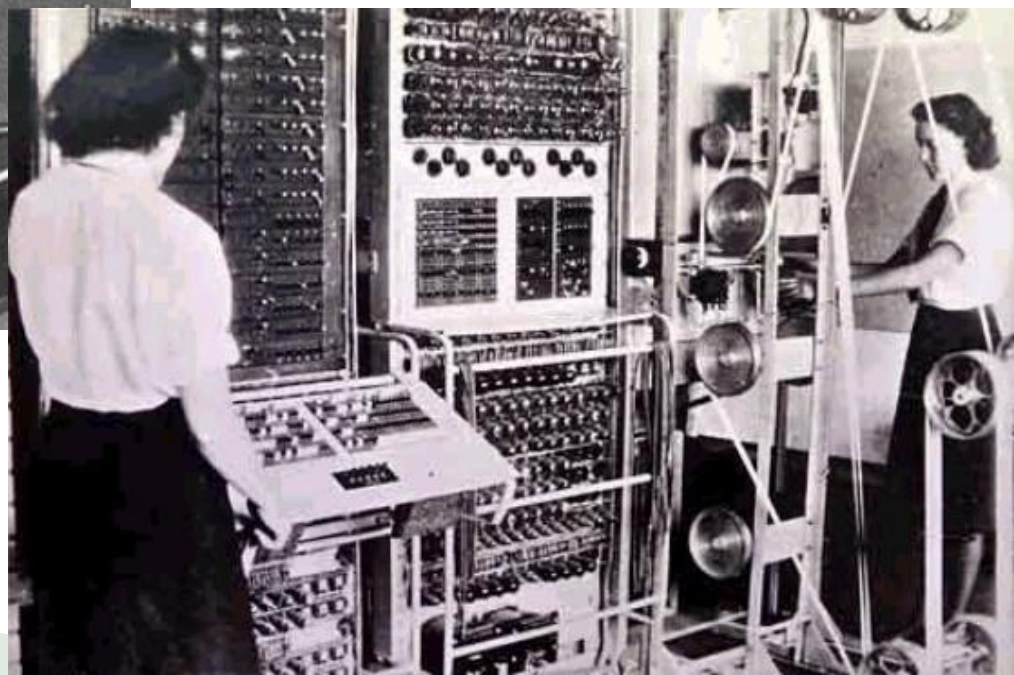
Today we can speak about 5 generations of computer development:



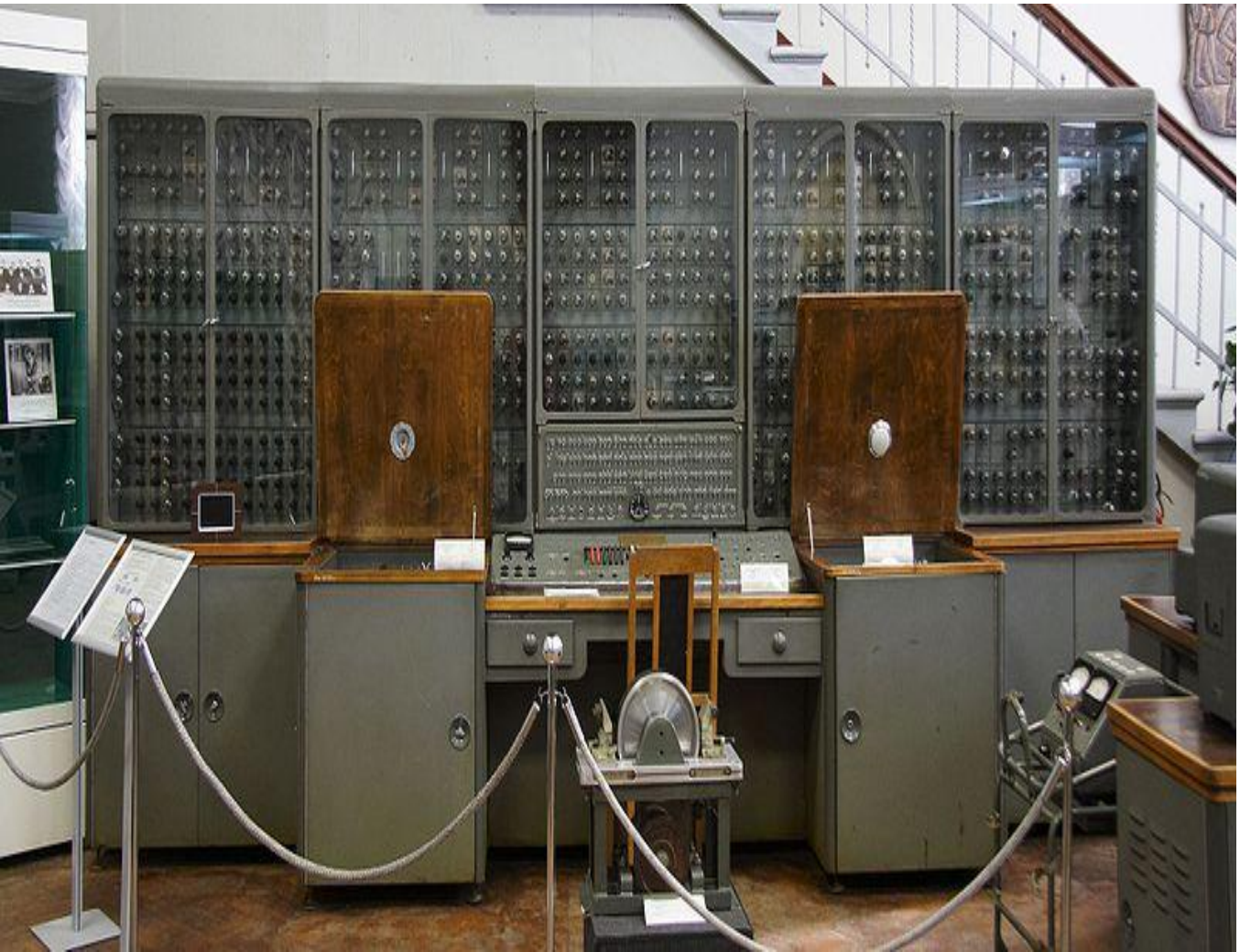
The first generation computers (from 1940s till 1959)



- large in size
- thousands of vacuum tubes
- slow



The second generation (*began in 1959*)



- use of transistors
- smaller, more powerful, and more reliable
- programming languages

The third generation

- silicon chips
- small size
- large capabilities

The fourth generation

- All computers of the present time, from the microcomputer to the supercomputer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Dear Journal,
Today was a very fun day. At school I learned how to do multiplication, and the teacher asked me to answer many questions. At lunch I played with my friends and we found a bird that was hurt. We took the bird to the nurse and she said it had a broken wing. I hope it gets better soon.
In science class I learned about solar energy. We used our computers to go on the internet and find pictures of solar panels. They look really neat.
The dinner Mama made tonight was very delicious. Papa made me laugh a lot. I love my parents very much. I


ESC Q W E R T Y U I O P
CAP A S D F G H J K L
Z X C V B N M
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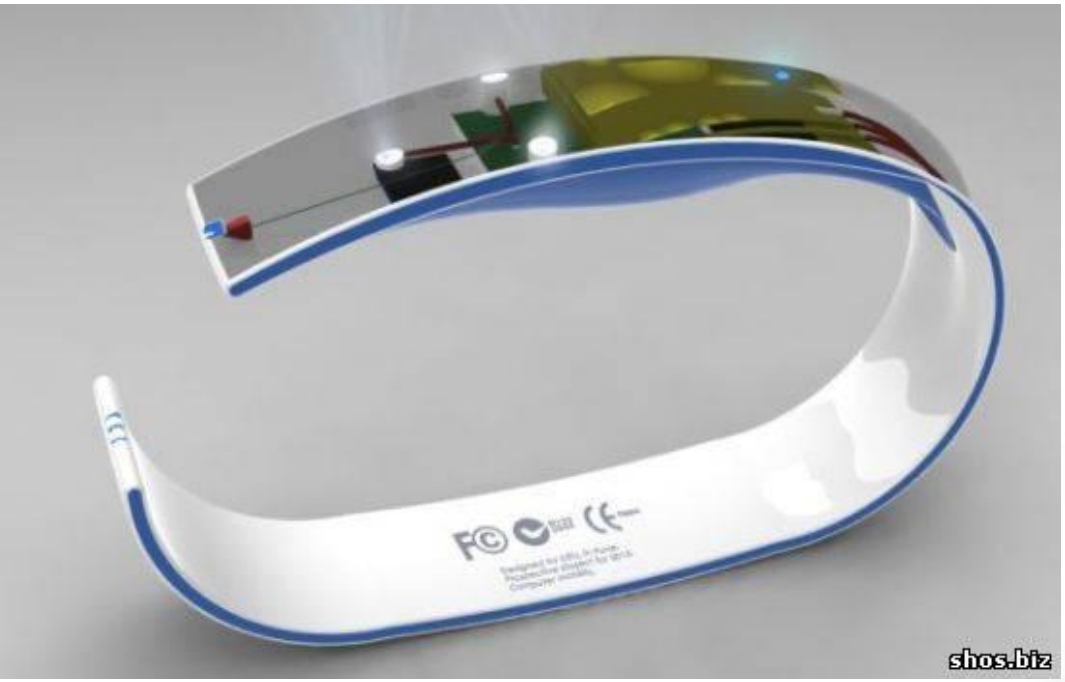
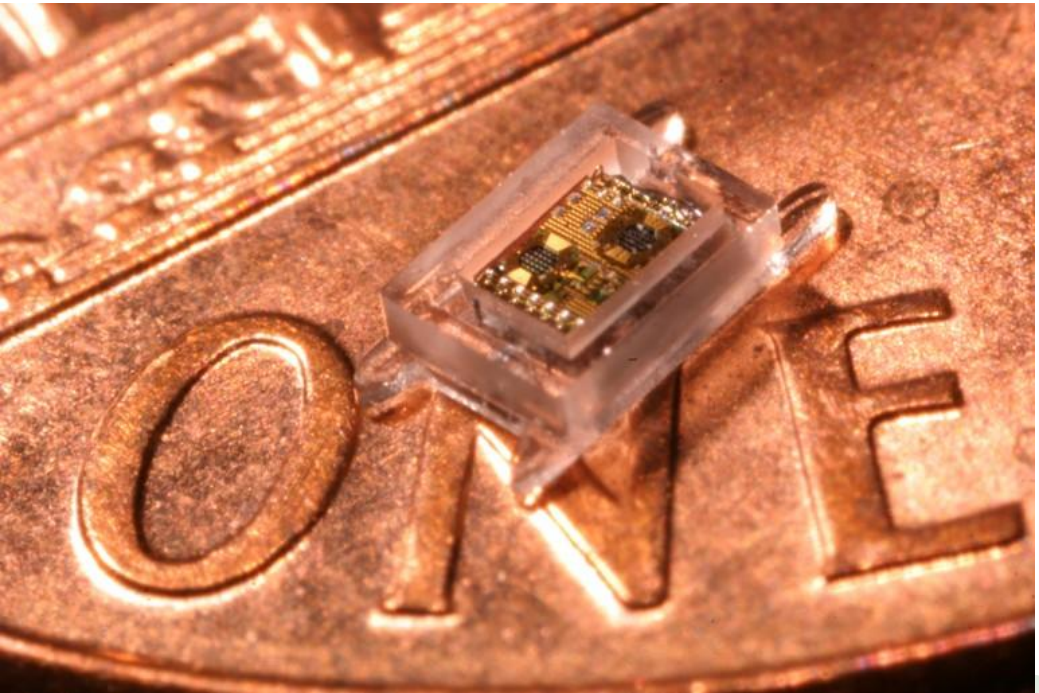
The fifth generation computer



- differ in size, speed, and storage capacity
- artificial intelligence

- natural languages
- large-scale integration technologies




APPLE
To be
continued...