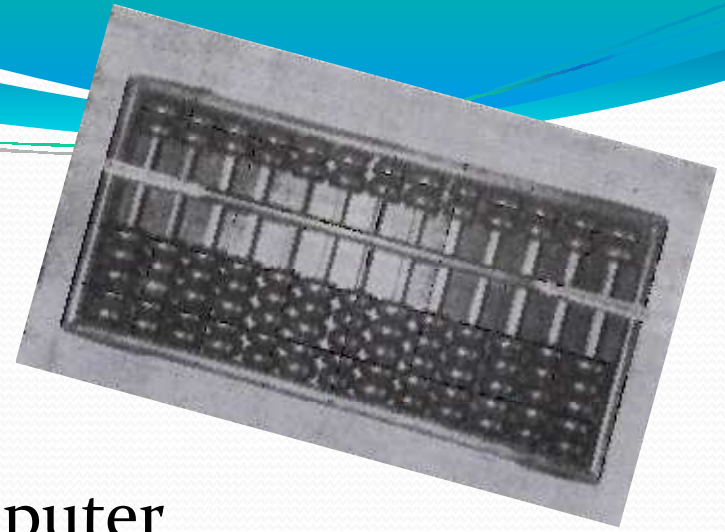# History of Computers

The Abacus:

- The First "Automatic" Computer
  - The abacus
  - first attempt at automating the counting process.
  - The abacus is not really an automatic machine it is more a machine which allows the user to remember his current state of calculations while performing more complex mathematical operation.

The **Antikythera mechanism**

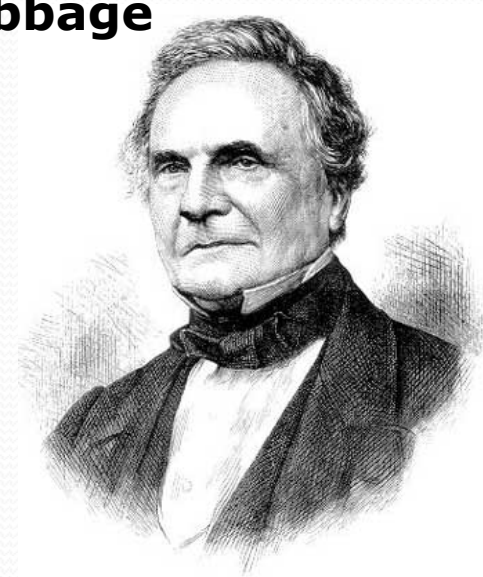- Analog computer used to calculate Astronomical positions.

Forefathers of Computing

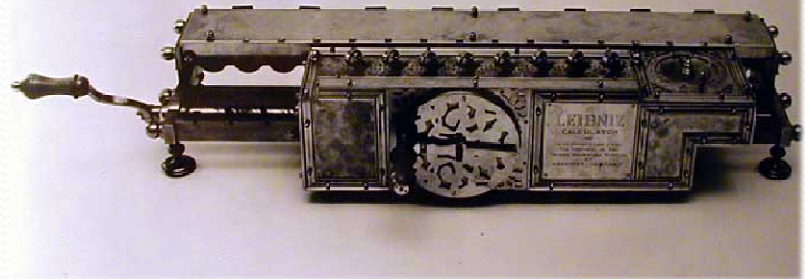- Forefathers of Modern Computers

Charles Babbage

Gottfried Wilhelm

Blaise Pascal

The First Mechanical Calculator

- Pascal's Gear System
  - A one tooth gear engages its single tooth with a ten-teeth gear once every time it revolves; the result will be that it must make ten revolutions in order to rotate then ten-teeth gear once.

  - This is the way that an odometer works for counting kilometers. The one tooth gear is large enough so that it only engages the next size gear after 1km has passed.
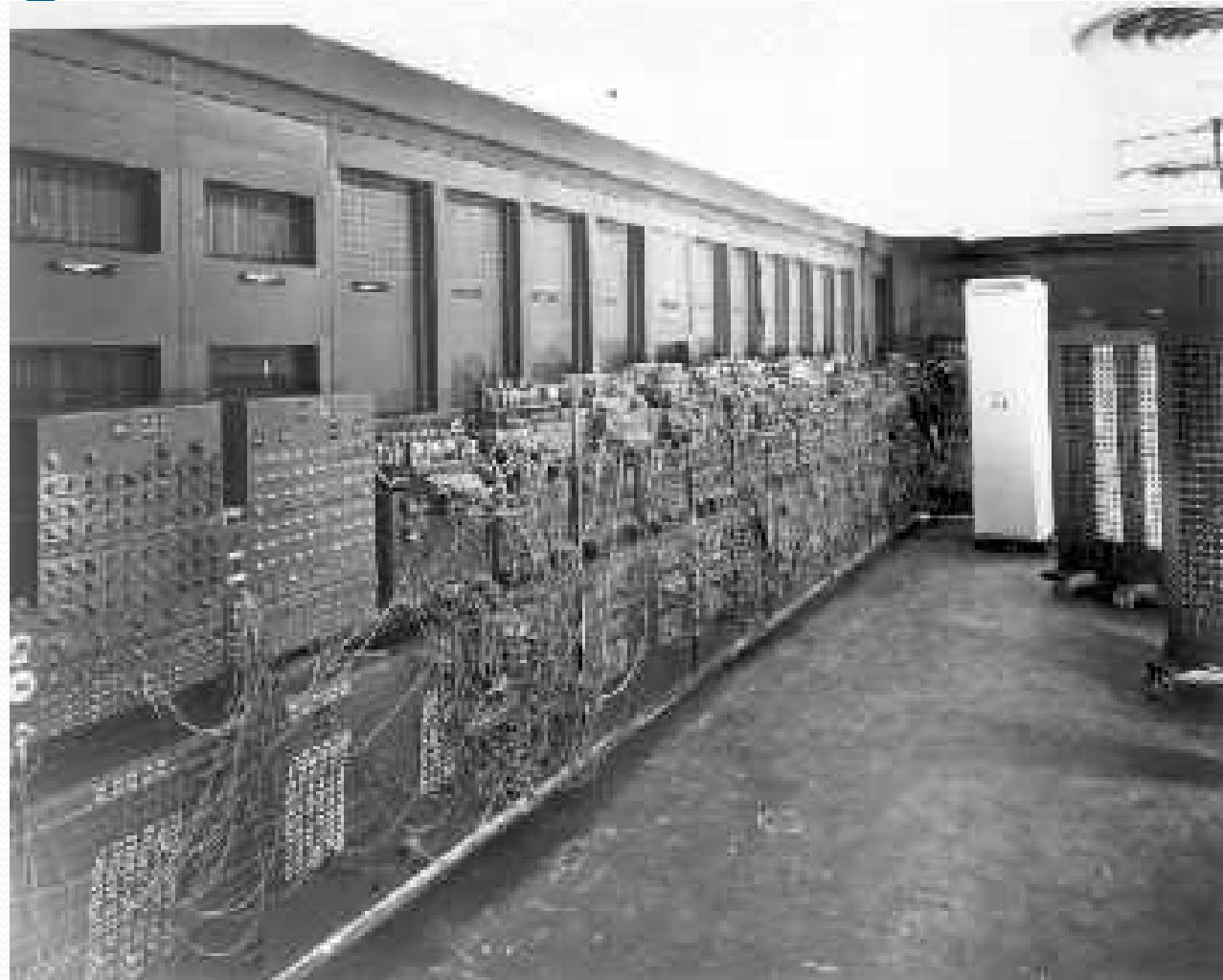
The Conditional

- Babbage's Conditional
  - The conditional point allows us to check to see what the current value of "S" is. If "s" is greater than "3", then we want the computer to output the value of "s" (4 in this case.) If "s" is less than or equal to 3, then we want the computer to output the value "0"

Hermann Hollerith's Tabulating Machine

- This machine was so successful that Hollerith started a firm to market it which later became known as IBM
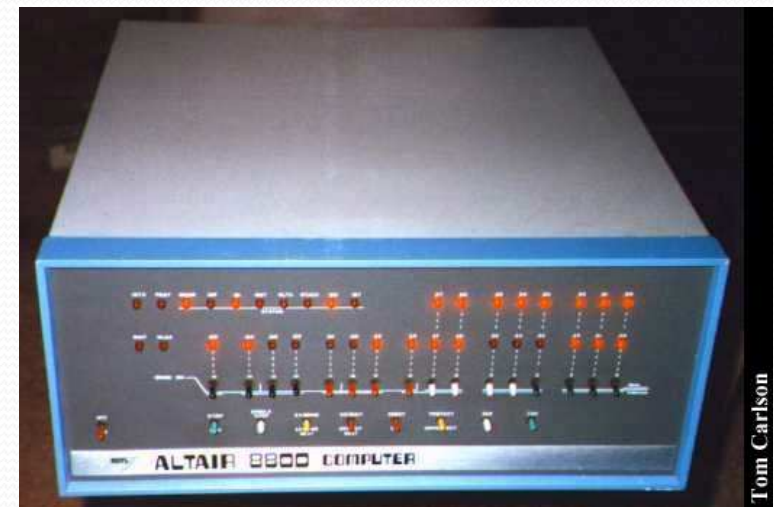
ENIAC

Advances in the 1950's

- Transistors
  - Freedom from vacuum tubes, which were extremely bulky
- Integrated Circuits
  - Allowed the placement of many transistors into a small area.
  - Both these advances enables machines to become smaller and more economical to build and maintain

The Altair

- Bill Gates and Paul Allen in 1975 approached Ed Roberts if MITS, the company who developed the Altair, and promised to deliver the BASIC complier.
- They did so and   from the sale Microsoft was born

Other Languages

- FORTRAN
  - FORmula Translator
  - Used for science, math, & engineering
- PASCAL
  - Developed by Niklaus Wirth in the 60's
  - Disciplined approach to structure and data description
- COBOL
  - Common Business Oriented Language
    - Data description stored separately from the pgram.
- C
  - Derivative of ALGOL
  - It and its decendant's very popular today for system programming

The PC Explosion

- IBM
  - Acorn released under the unassuming name PC in 1981
  - 1984, 286-AT
  - Whole Host of clones introduced & Compaq releases a portable
- Apple
  - Apple II, 1977
  - Apple III, 1980
  - Lisa, 1983; first machine with a mouse and graphical user interface
  - Macintosh introducted in 1984
- Other
  - TRS-80 from Radio Shack 1977
  - Commodore PET 1980's
  - 1981, journalist Adam Osborn commissions design of Osborne I which used CP/M

PCs Today

- Fast
- Graphical User Interfaces (GUI)
  - Allows you to use a mouse to control the computer
  - Can run thousands of different sets of instructions (programs)