



# Evolution of Computer Science

▼ Class

Computer Science

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## History of Computer Technology

**Electronic Numerical Integrator and Computer (ENIAC):** first generally-recognized computer

- Moore School of Electrical Engineering at the University of Pennsylvania
- First high-speed, purely electronic digital computer that could be programmed and reprogrammed to handle tasks

ENIAC's main jobs were:

- Calculate artillery firing tables for the US Army
- Make atomic energy calculations
- Predict the weather

ENIAC was superior to other machines because it could be *reprogrammed*.

- Reprogramming was a difficult process
  - Required women to manually change the (over 3000) switches on the ENIAC

# Advent of Microprocessors

Dr. John von Neumann → advanced the idea of the **stored-program** computer

- Data stored in memory could be changed by a computer
- The program could also be stored in the computer

**von Neumann Architecture:** the art of storing a program in memory

1. Vacuum tubes were used
2. The transistor solved this problem.
  - **Transistor:** a semiconductor device used to amplify or switch electrical signals
    - Smaller, cooler, and more reliable than vacuum tubes
    - Allowed for mass production
3. Transistors were combined with other components to create the **integrated circuit**
4. Integrated circuits evolved into **microprocessors** used today
  - Gotten smaller, faster, and more powerful

# Computers of Today

Gordon Moore helped to advance transistor technology.

- Co-founded the Intel Corporation
- Made a prediction on transistor usage in same-size boards

**Moore's Law:** the number of cheaply-placed transistors within the same physical area would *double about every two years*

- Accurate to future trends

**Semiconductor:** a substance used to amplify or switch electronic signals

**Circuit Board:** a sheet of insulating material used for the mounting and interconnection of components in electronic equipment