



COMP110: Principles of Computing

1: Computing History and Profession

What was the first computer?

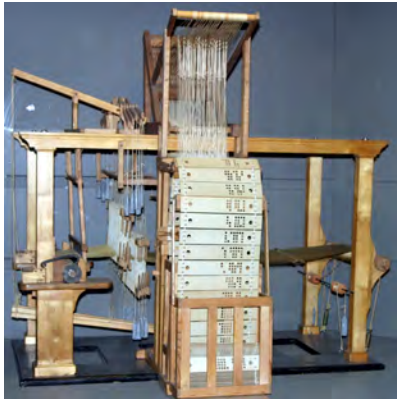
Antikythera Mechanism (~150 BC)

First mechanical computer?



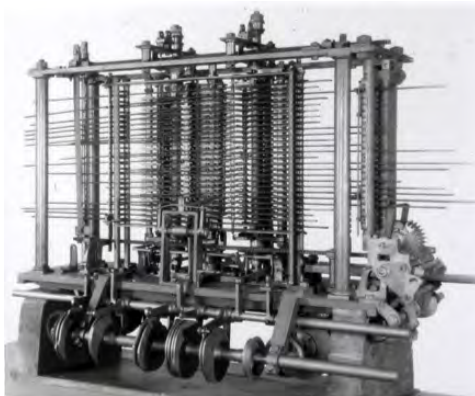
Jacquard Loom (1804)

First programmable machine in modern age



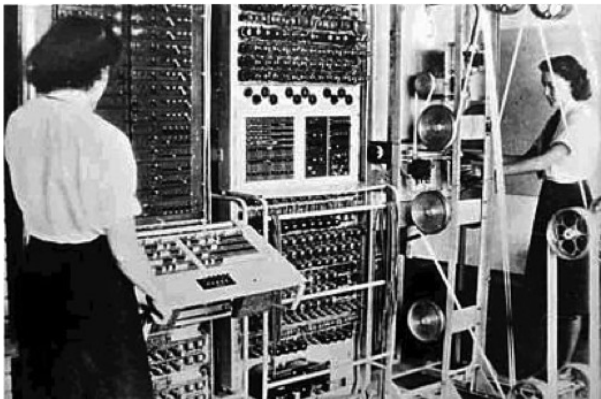
Babbage's Difference and Analytical Engines (1837)

First mechanical computer in modern age



Colossus (1943)

First programmable electronic computer



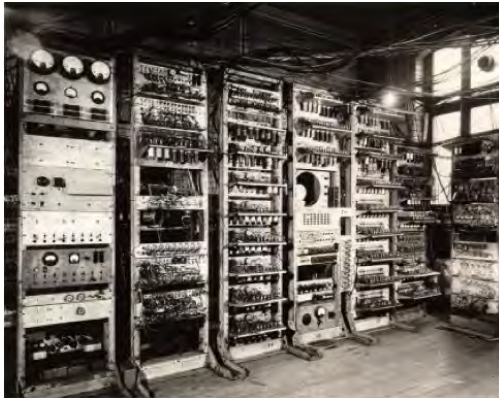
ENIAC (1946)

First general-purpose computer



Manchester Small-Scale Experimental Machine (1948)

First stored program computer



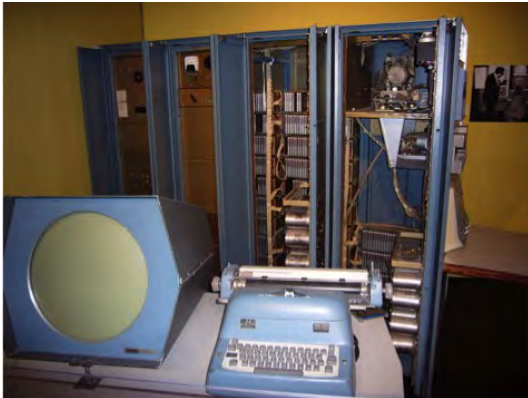
TRADIC (1949)

First transistor computer



PDP-1 (1959)

Influenced “hacker culture”



Datapoint 2200 (1970)

First microcomputer



Commodore VIC 20 (1980)

First computer to sell 1 million units



IBM Personal Computer Model 5150 (1981)

Precursor to the modern PC

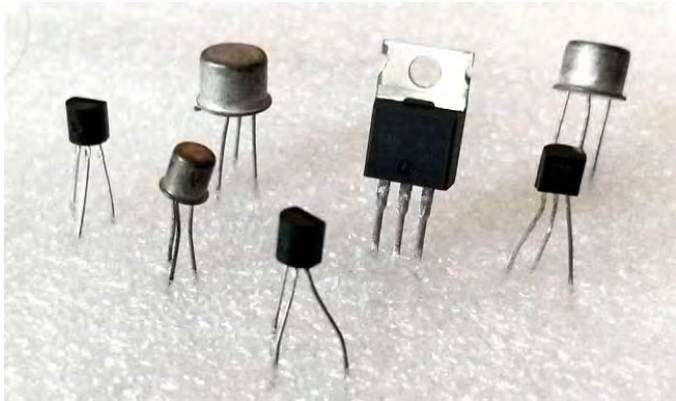


Electronic computer technologies

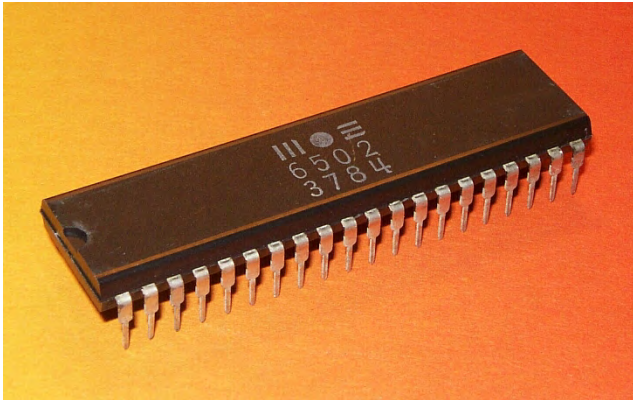
Vacuum tubes (valves)



Transistors



Integrated circuits (ICs)

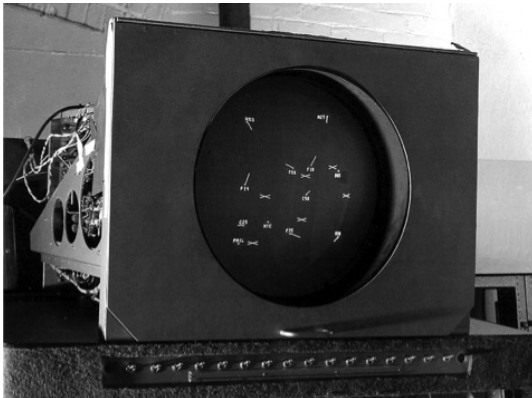


1943	Colossus	1700 valves
1946	ENIAC	20000 valves
1949	TRADIC	800 transistors
1959	PDP-1	2700 transistors
1975	MOS 6502	3510 transistors
1979	Intel 8088	29000 transistors
1998	Intel Pentium II	7.5 million transistors
2016	Intel Core i7 Broadwell-E	3.2 billion transistors
2018	Apple A12	6.9 billion transistors

What was the first computer game?

Cathode Ray Tube Amusement Device (1948)

First interactive electronic game



Chess AI on the Ferranti Mark I (1951)

First chess program



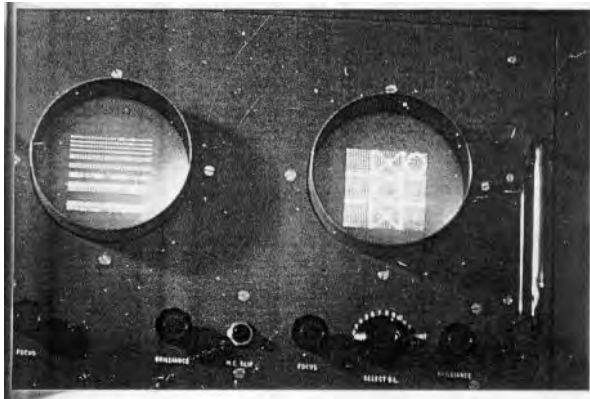
Bertie the Brain (1950)

First computer game with a visual display



OXO (1951)

First game with visuals on a general-purpose computer



Tennis for Two (1959)

First to be created purely for entertainment



SpaceWar! (1962)

First widely available game, inspired first arcade games



Pong (1972)

First commercially successful game



What was the first games console?

The Brown Box (1967)

First prototype console



Ralph H. Baer

TheGameConsole.com

Magnavox Odyssey (1972)

First commercial console



Game console timeline

[http://www.onlineeducation.net/videogame_
timeline/video-game-timeline.jpg](http://www.onlineeducation.net/videogame_timeline/video-game-timeline.jpg)

(A little out of date!)

Computing professionals

Computing professionals

- ▶ A degree in computing prepares you for a wide variety of careers
- ▶ How many can you think of?
- ▶ Get into groups of 4–5
- ▶ Brainstorm as many careers (job titles) that are wholly or partly classified as computing as you can

Skills for computing professionals

- ▶ What **skills** might you need to be successful in a computing career?
- ▶ Again in your groups of 4–5
- ▶ I will give each group a computing career from our list
- ▶ Discuss what skills might be required for success in that career

The future of computing

- ▶ Computing is a fast-moving field, and the world you graduate into may not look much like the world of today!
- ▶ Again in your groups of 4–5
- ▶ How might the landscape of the computing profession change in the next 5–10 years?
- ▶ What careers will become more or less important, or disappear entirely?
- ▶ Will the important skills be the same or different?