



COMP110: Principles of Computing
1: Computing Foundations



Learning outcomes

By the end of today's session, you will be able to:

- ▶ **Describe** the overall structure of the module and its assessments
- ▶ **Recall** the historical context of computing and gaming technology
- ▶ **Explain** the basic architecture of a computer

Today's agenda

- ▶ COMP110 course outline
- ▶ History of computing

Module introduction



Aim

To enable you to apply basic computing and mathematical theory to practical programming activities.

Description

On this module, you will learn the basic principles of computing, discrete mathematics, and technical notation (e.g. pseudocode, UML, etc.). You start the process of learning to use basic methods and core concepts to solve practical problems and leverage algorithms in your solutions. You will become acquainted in a practical way with the techniques and methods that help you to work effectively and efficiently to build and annotate computing solutions with reference to relevant scholarly sources. You acquire experience of working on basic computing problems and solving them.

Learning Outcomes

ID	NAME	DESCRIPTION	ASSESSMENT CRITERIA CATEGORY
1	Code	Translate technical notation into executable code.	PROCESS
3	Solve	Demonstrate computational thinking and numeracy skills.	PROCESS
3	Contextualise	Locate the broader development context of relevant industries.	COMMUNICATE
5	Research	Report on an issue using appropriate sources and academic conventions.	RESEARCH

Topic schedule

On LearningSpace

Timetable

<http://mytimetable.falmouth.ac.uk>

Assignments

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- ▶ Assignment 1: worksheet tasks

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 - ▶ **Nine** worksheets — programming, annotation, problem solving, mathematics

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- ▶ See MyFalmouth for deadlines

Worksheet A

- ▶ SpaceChem
- ▶ Due **next Friday (4th October)**

What was the first computer?



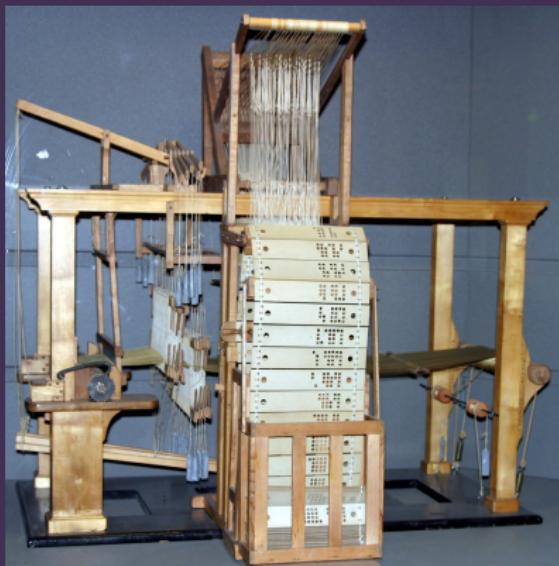
Antikythera Mechanism (~150 BC)

First mechanical computer?



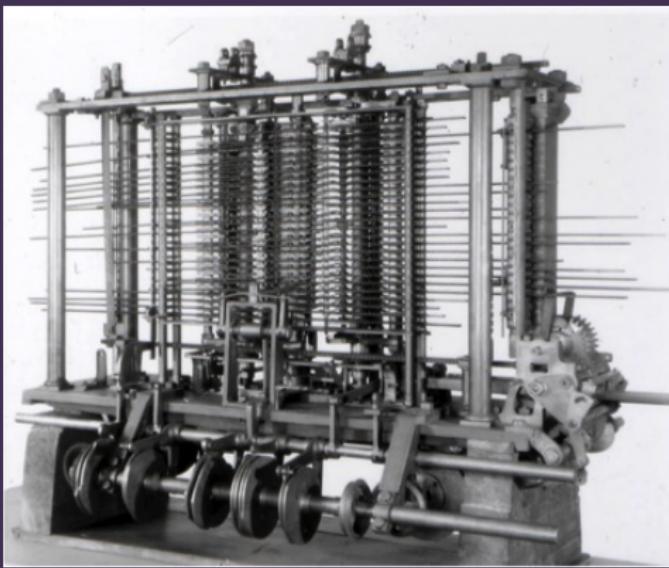
Jacquard Loom (1804)

First programmable machine in modern age



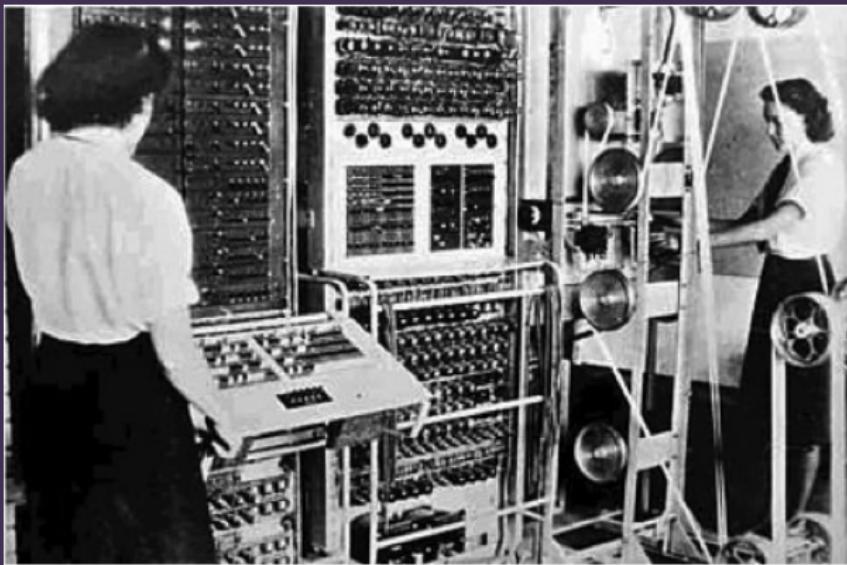
Babbage's Difference and Analytical Engines (1837)

First mechanical computer in modern age



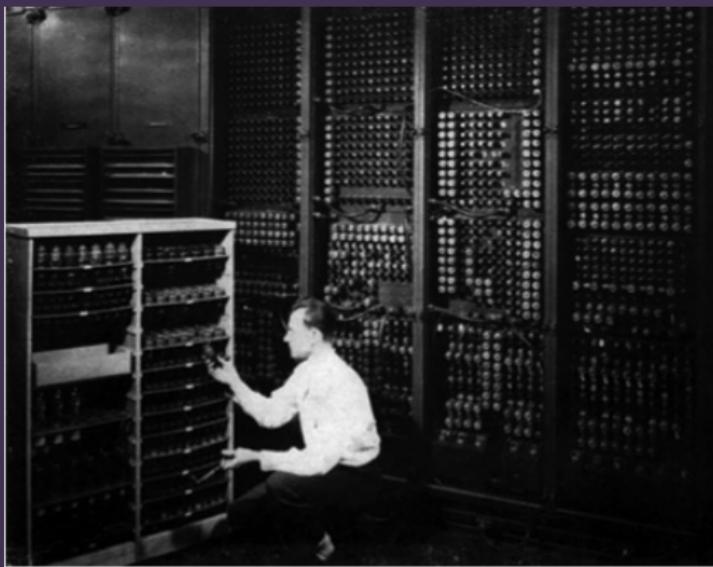
Colossus (1943)

First programmable electronic computer



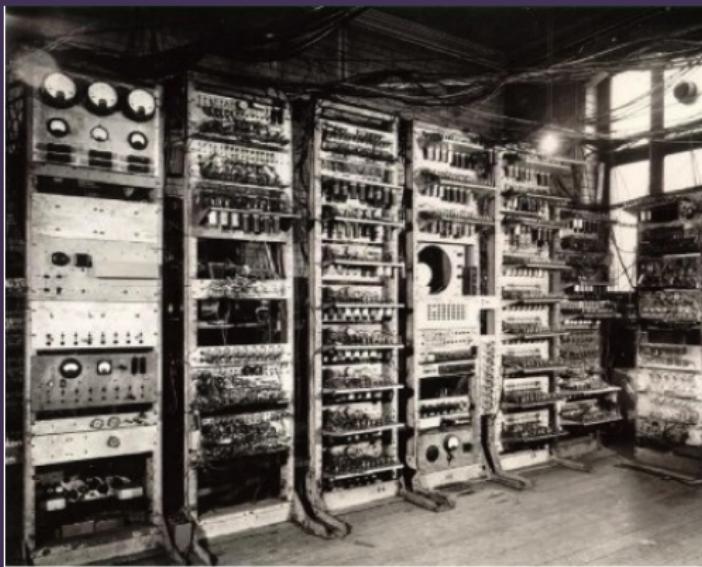
ENIAC (1946)

First general-purpose computer



Manchester Small-Scale Experimental Machine (1948)

First stored program computer



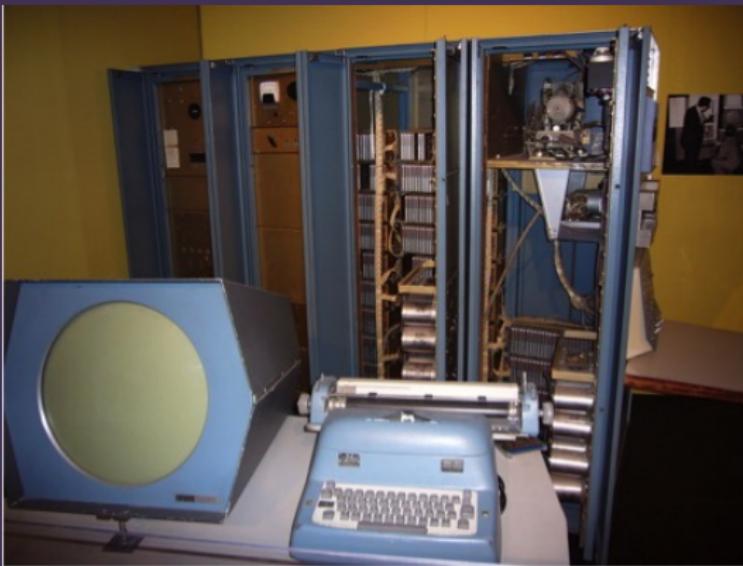
TRADIC (1949)

First transistor computer



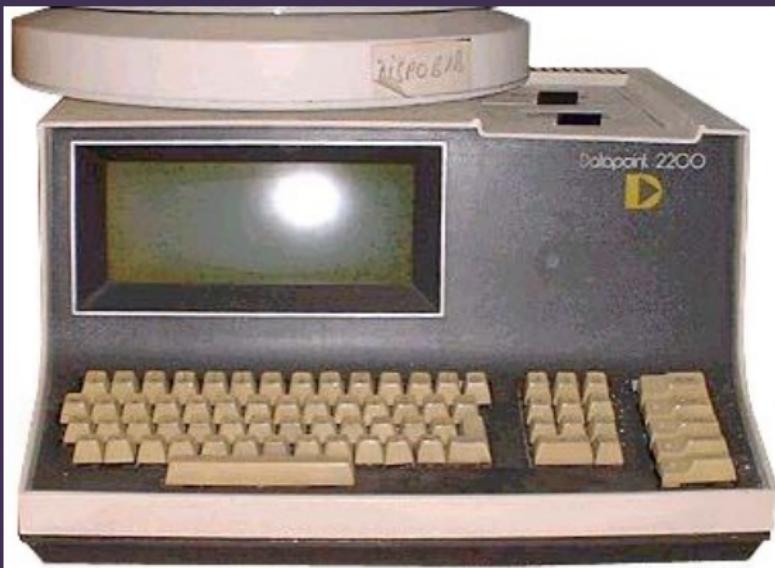
PDP-1 (1959)

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



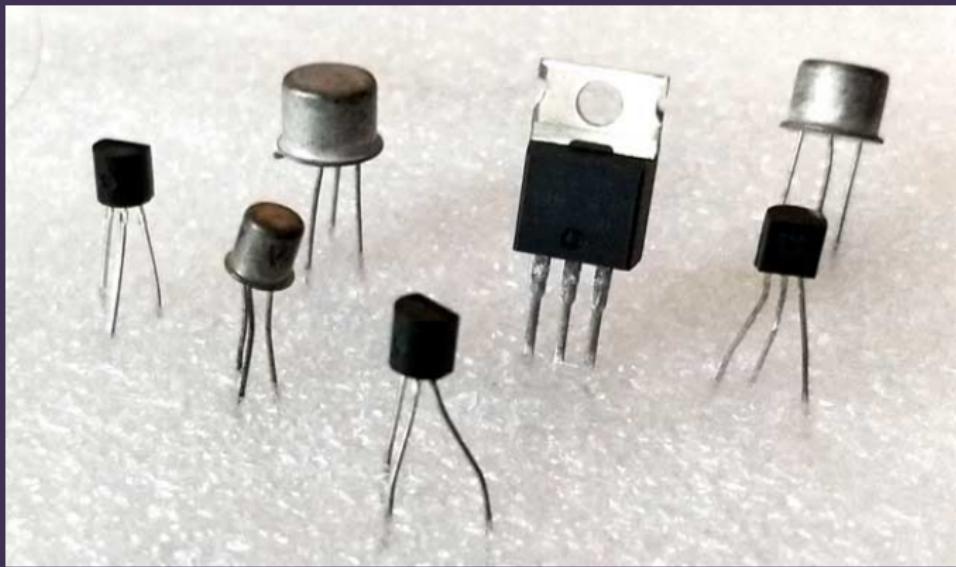
Electronic computer technologies



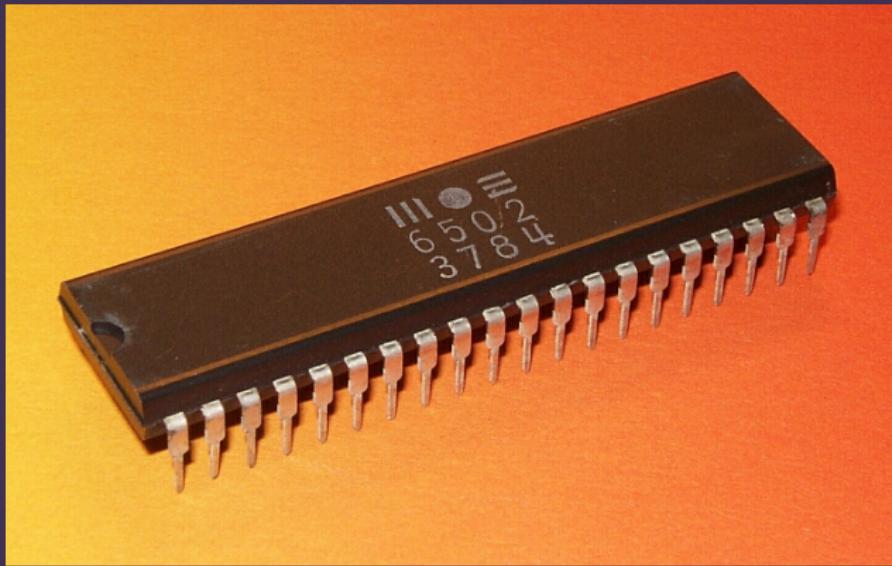
Vacuum tubes (valves)



Transistors



Integrated circuits (ICs)



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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



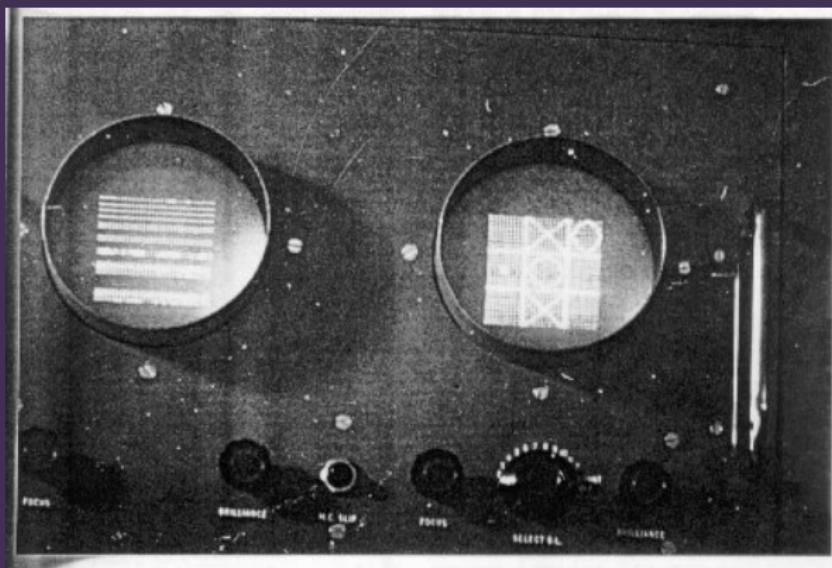
Bertie the Brain (1950)

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



Magnavox Odyssey (1972)

First commercial console



Game console timeline

http://www.onlineeducation.net/videogame_timeline/video-game-timeline.jpg
(A little out of date!)

Debrief

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