IT, ICT 역사

- **Computing**

- Pascal, Babbage/Ada
- Von Neumann
- Hardware Generations
- Software
- User Interface
- Cloud computing
- Convergence

- **Network**

- Telephone
- Data network
- Internet
- Mobile/wireless network
- LAN
- IoT network
- Realtime

History of Computing

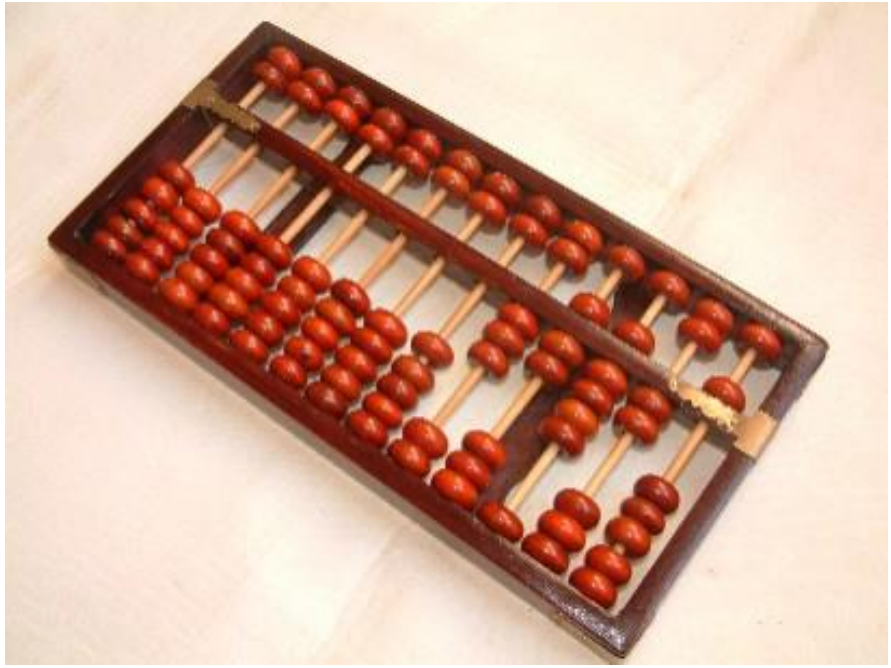
https://en.wikipedia.org/wiki/History_of_computing

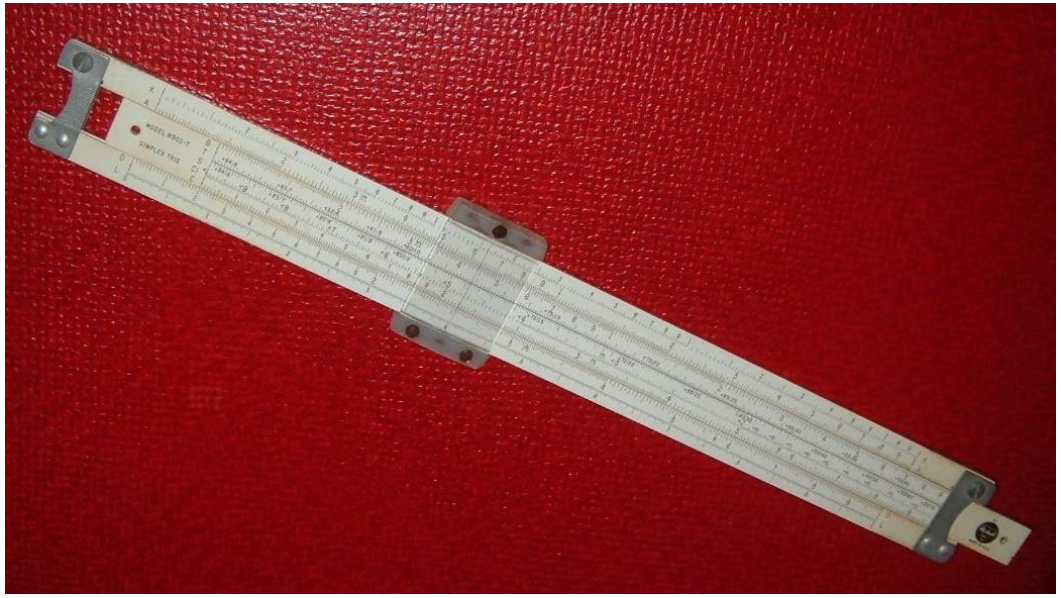
http://www.computerhistory.org/timeline/computers/

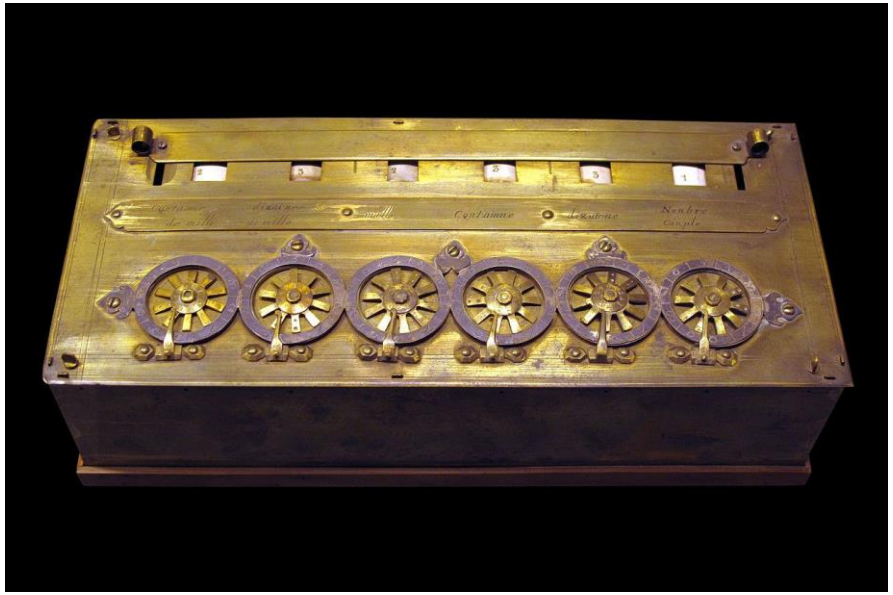
https://www.ictlounge.com/html/timeline_of_ict.htm

Computer History

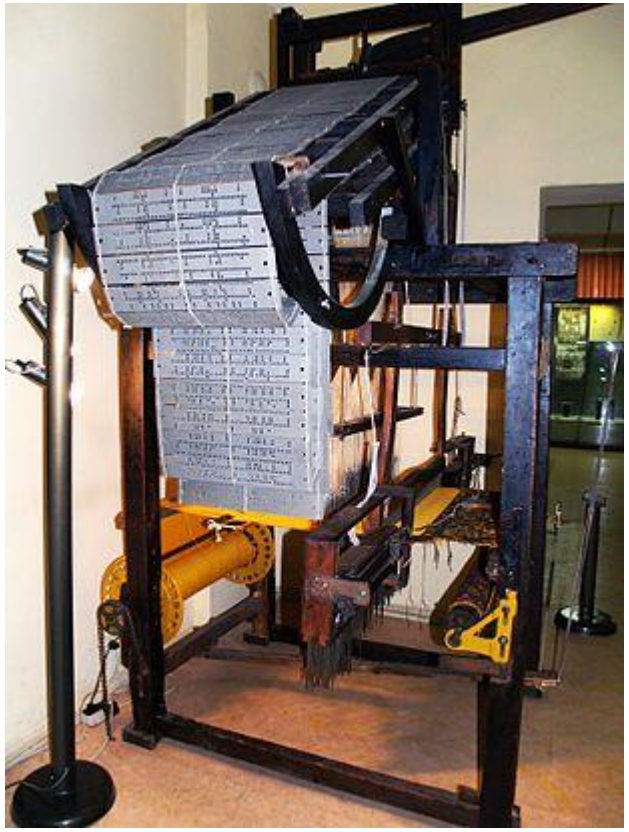
- 주판 (2000BC)
- 계산자 (1620)
- Pascal Calculator (1652)

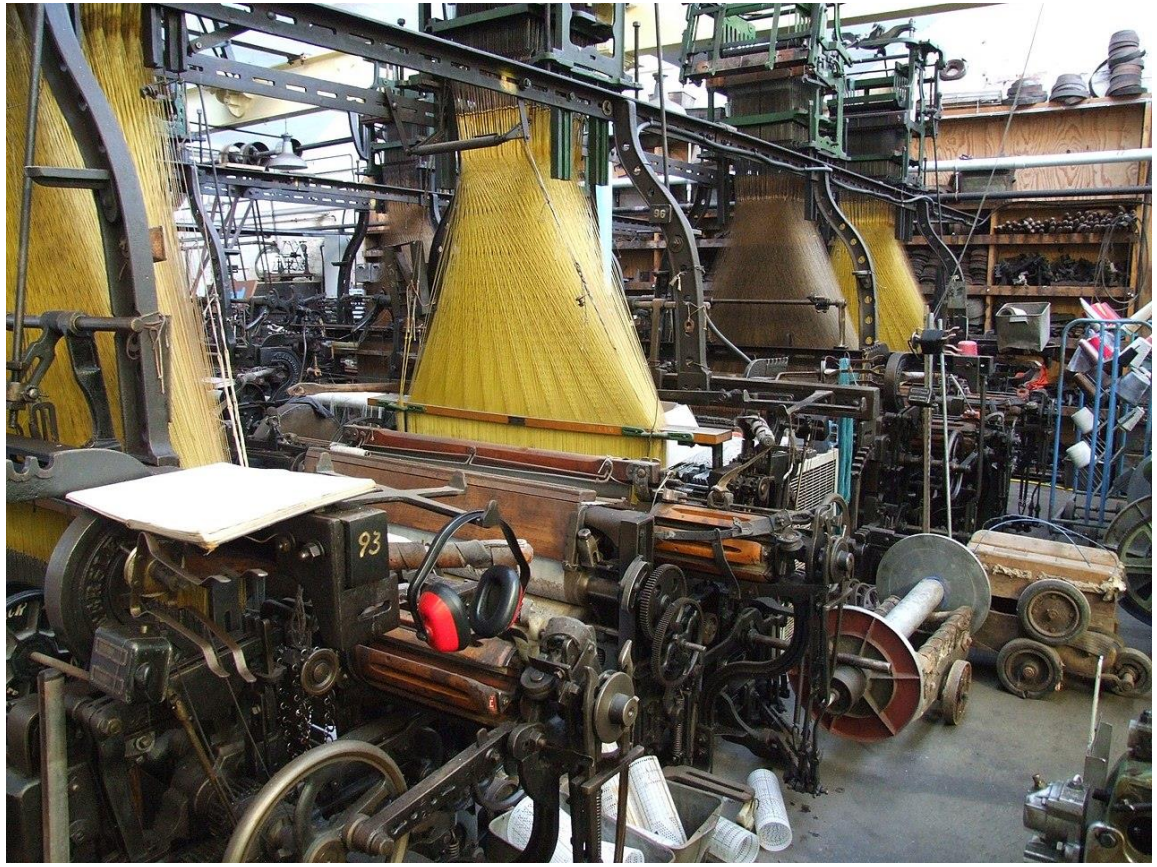






1801: In France, **Joseph Marie Jacquard** invents a loom that uses punched wooden cards to automatically weave fabric designs. Early computers would use similar punch cards.

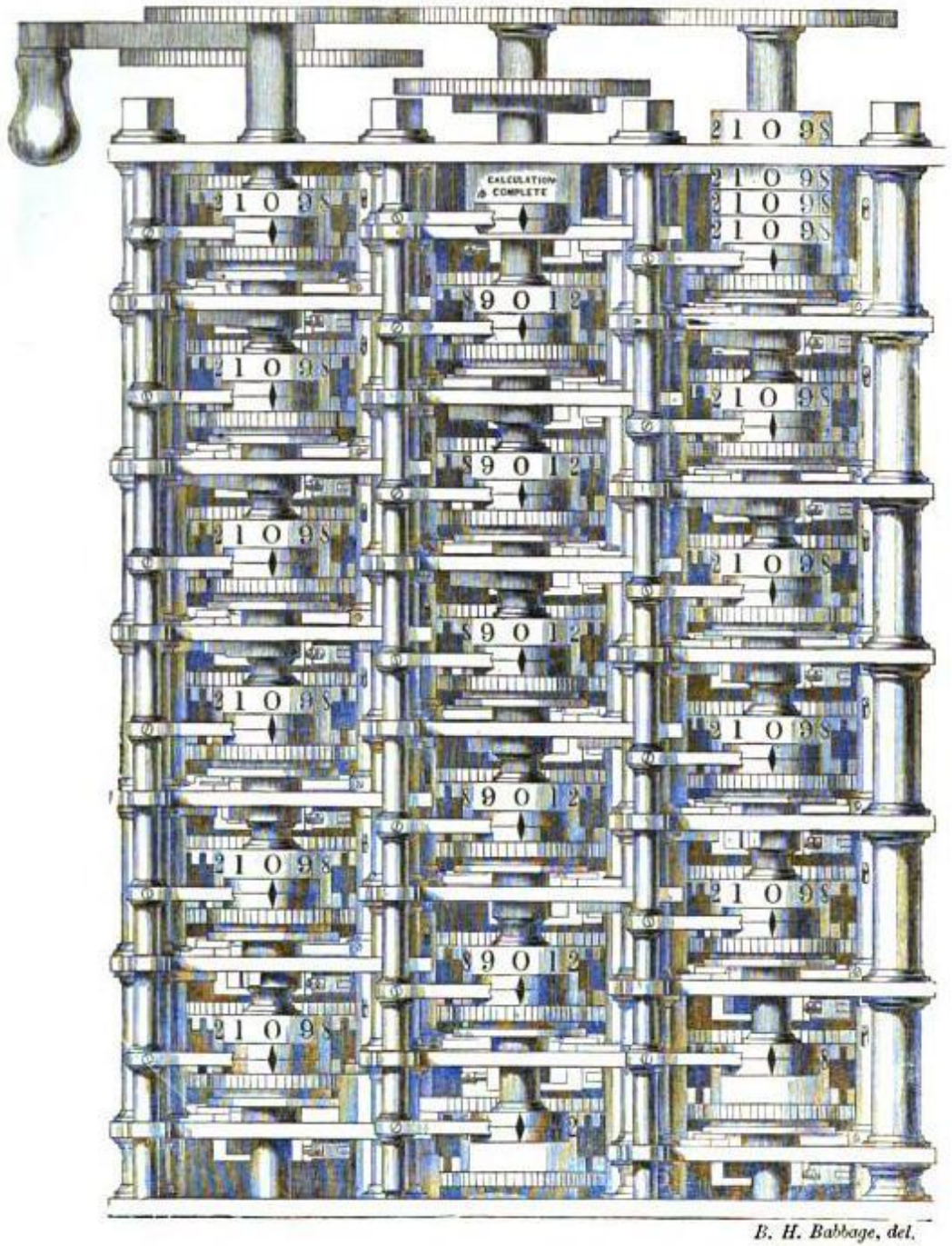




1822: English mathematician **Charles Babbage** conceives of a steam-driven calculating machine that would be able to compute tables of numbers. The project, funded by the English government, is a failure. More than a century later, however, the world's first computer was actually built.

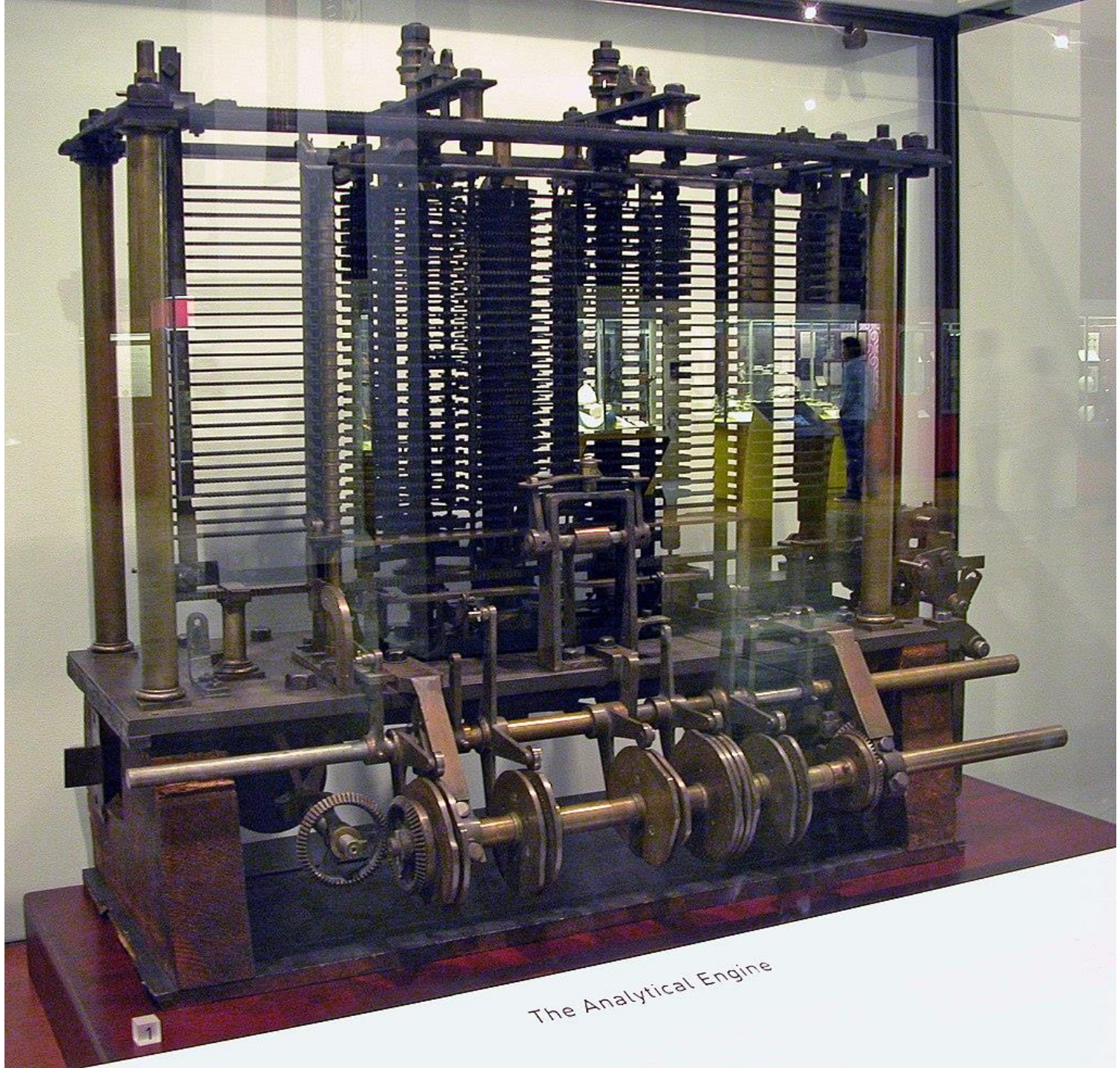
Difference Engine

1822



Analytical Engine

1937

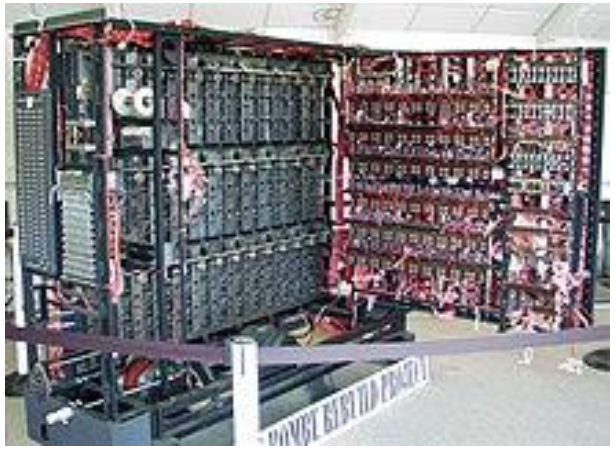


1890: **Herman Hollerith** designs a punch card system to calculate the 1880 census, accomplishing the task in just three years and saving the government $5 million. He establishes a company that would ultimately become IBM.

IBM 029 Card Punch.

Punched card from a Fortran program:
Z(1) = Y + W(1)

1936: **Alan Turing** presents the notion of a universal machine, later called the Turing machine, capable of computing anything that is computable. The central concept of the modern computer was based on his ideas.

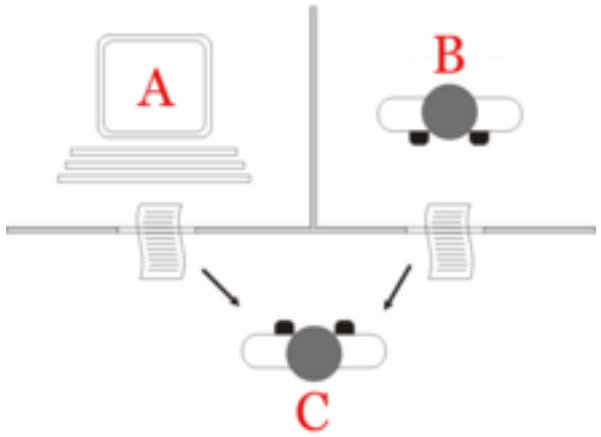


A complete and working replica of a bombe at the National Codes Centre at Bletchley Park

Algorithm
Stored Program Computer
Cryptography
Artificial Intelligence
Turing Test

Turing Test

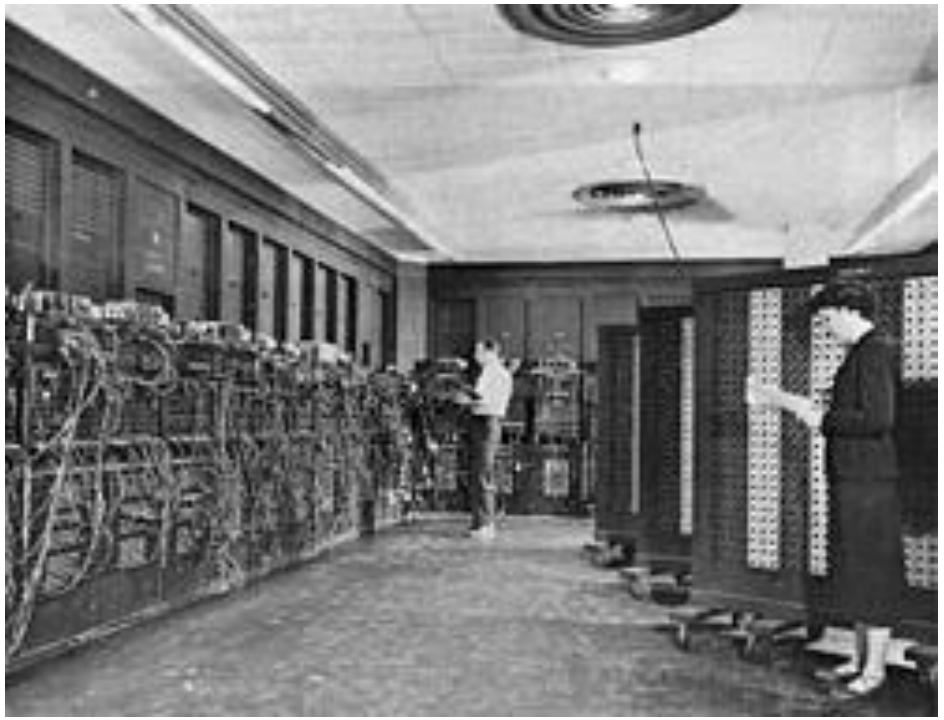
- a test of a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human (1950)
- Kurzweil prediction : 2029



The "standard interpretation" of the Turing Test, in which player C, the interrogator, is given the task of trying to determine which player – A or B – is a computer and which is a human. The interrogator is limited to using the responses to written questions to make the determination.

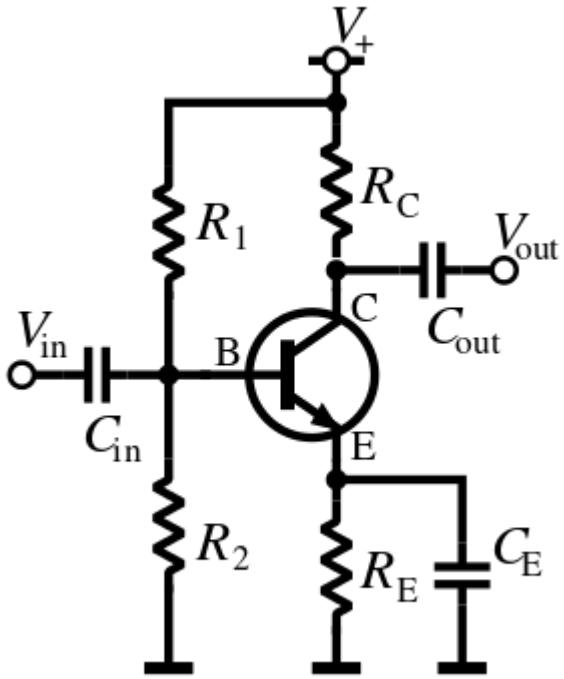
1943-1944: Two University of Pennsylvania professors, John Mauchly and J. Presper Eckert, build the Electronic Numerical Integrator and Calculator (**ENIAC**). Considered the grandfather of digital computers, it fills a 20-foot by 40-foot room and has 18,000 vacuum tubes.

used to calculate artillery firing tables for the United States Army's Ballistic Research Laboratory



Detail of the back of a section of ENIAC, showing vacuum tubes

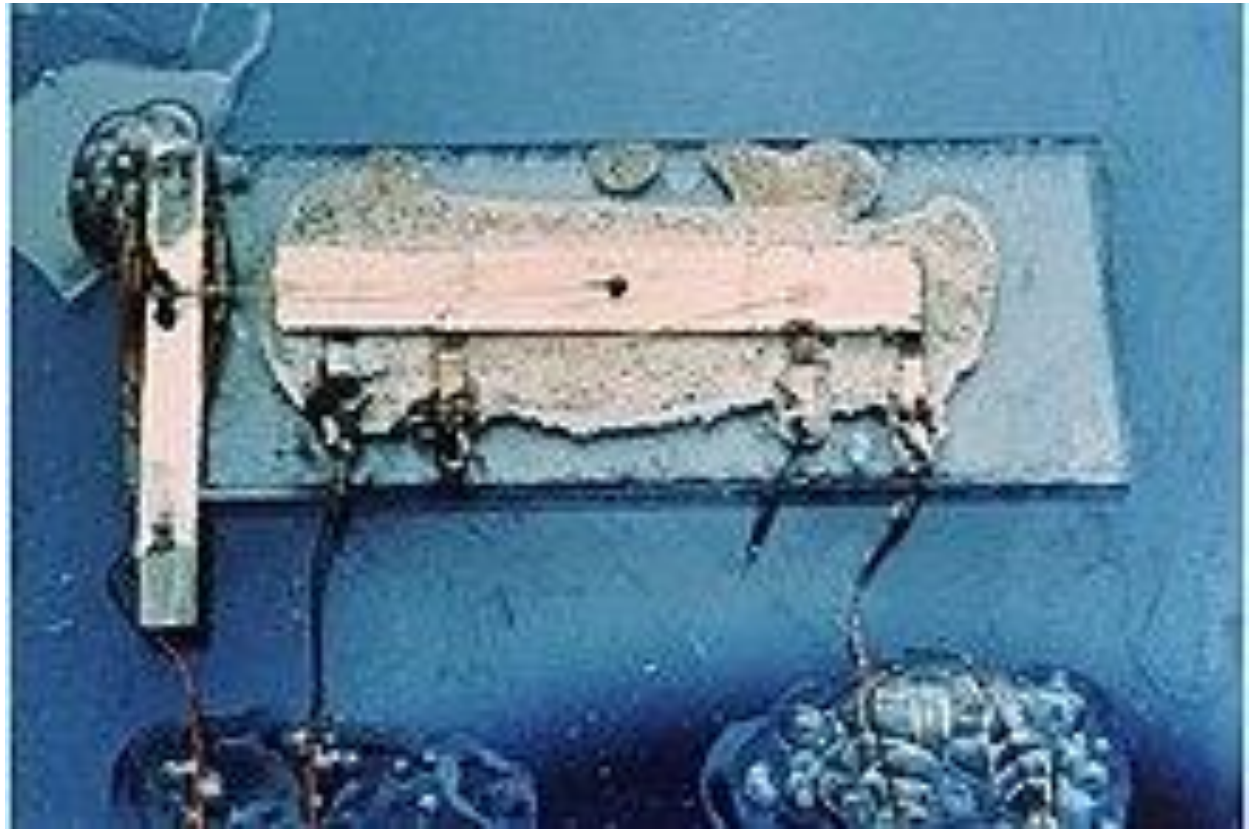
1947: **William Shockley, John Bardeen and Walter Brattain** of Bell Laboratories invent the transistor. They discovered how to make an electric switch with solid materials and no need for a vacuum.



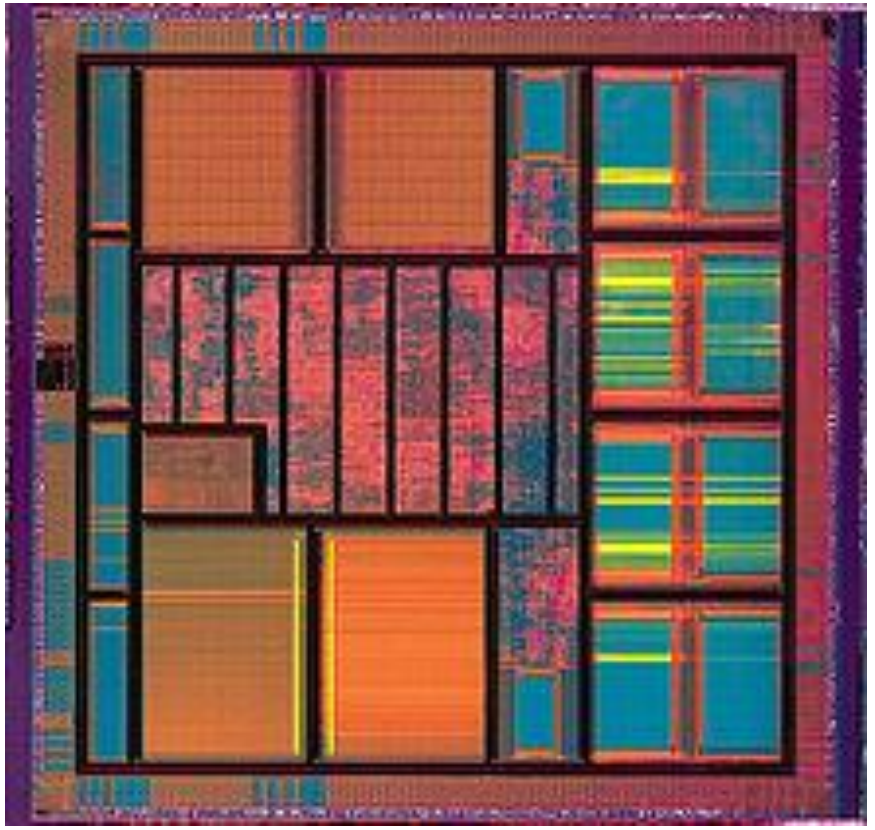
1954: The **FORTRAN** programming language, an acronym for FORmula TRANslation, is developed by a team of programmers at IBM led by John Backus, according to the University of Michigan.

a more practical alternative to assembly language for programming their IBM 704 mainframe computer

1958: **Jack Kilby and Robert Noyce** unveil the integrated circuit, known as the computer chip. Kilby was awarded the Nobel Prize in Physics in 2000 for his work.



Jack Kilby's original integrated circuit



VLSI die

1964: **Douglas Engelbart** shows a prototype of the modern computer, with a **mouse** and a graphical user interface (GUI). This marks the evolution of the computer from a specialized machine for scientists and mathematicians to technology that is more accessible to the general public.

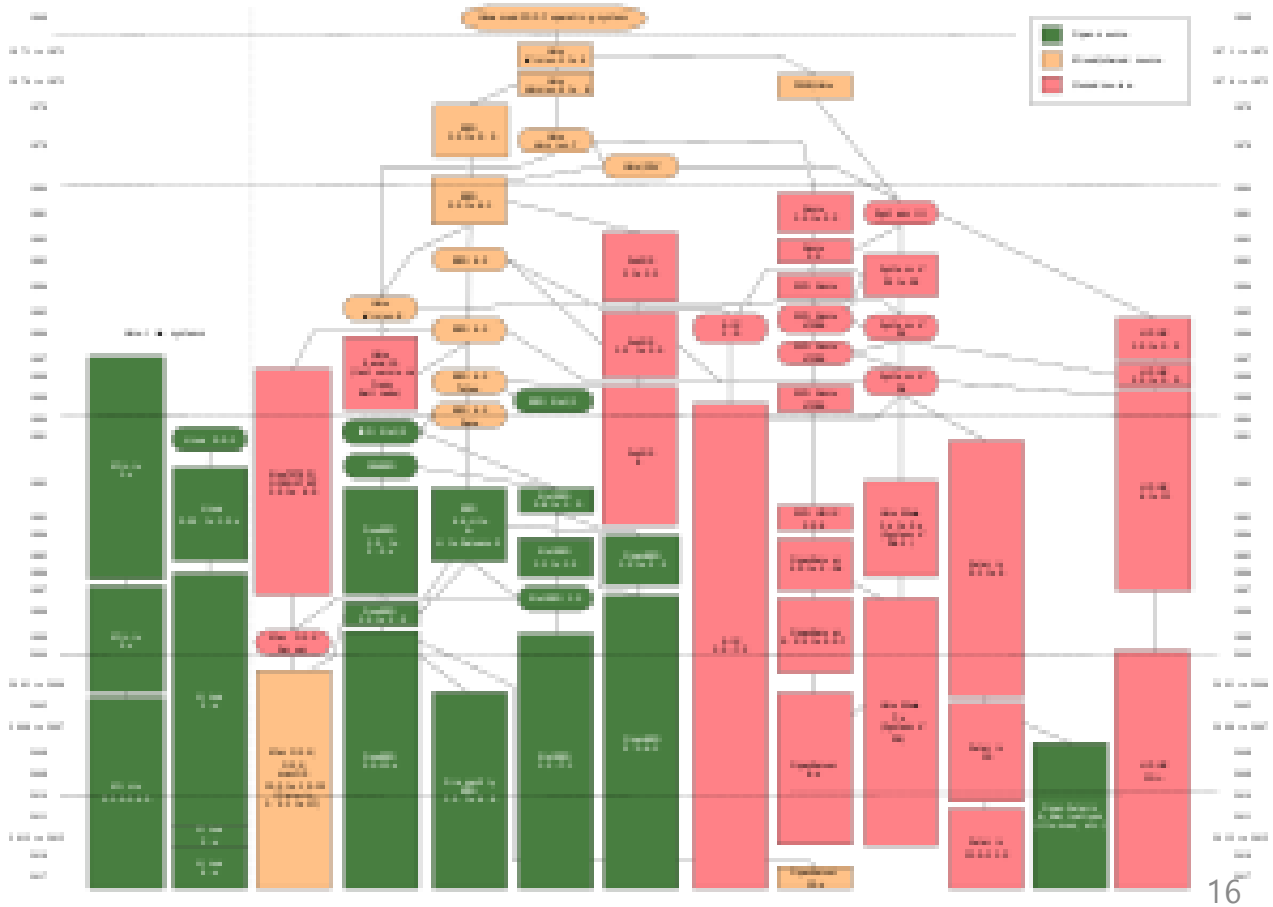
The Xerox Star 8010 workstation introduced the first commercial GUI.

Macintosh 128K, the first Macintosh (1984)

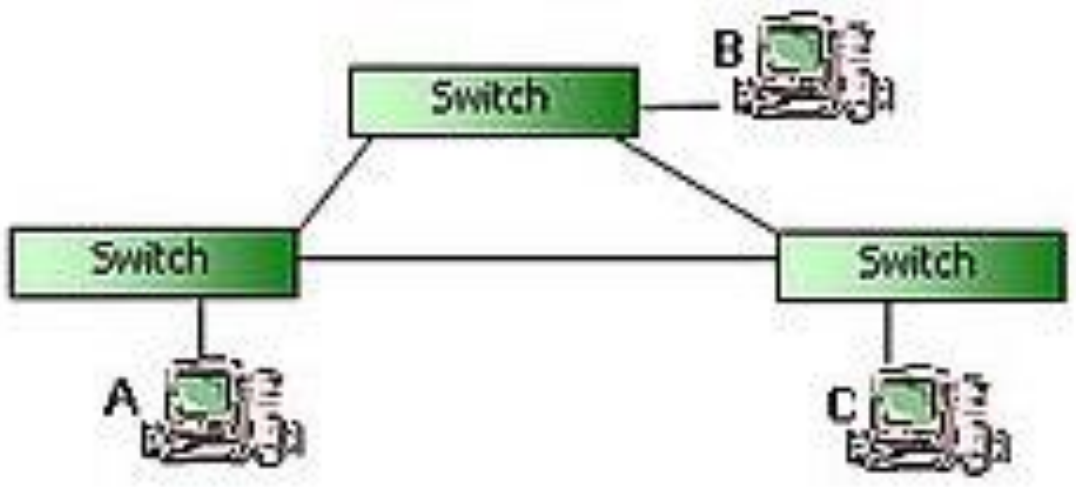
1969: A group of developers at Bell Labs produce **UNIX**, an operating system that addressed compatibility issues. Written in the C programming language, UNIX was portable across multiple platforms and became the operating system of choice among mainframes at large companies and government entities. Due to the slow nature of the system, it never quite gained traction among home PC users.

Linux

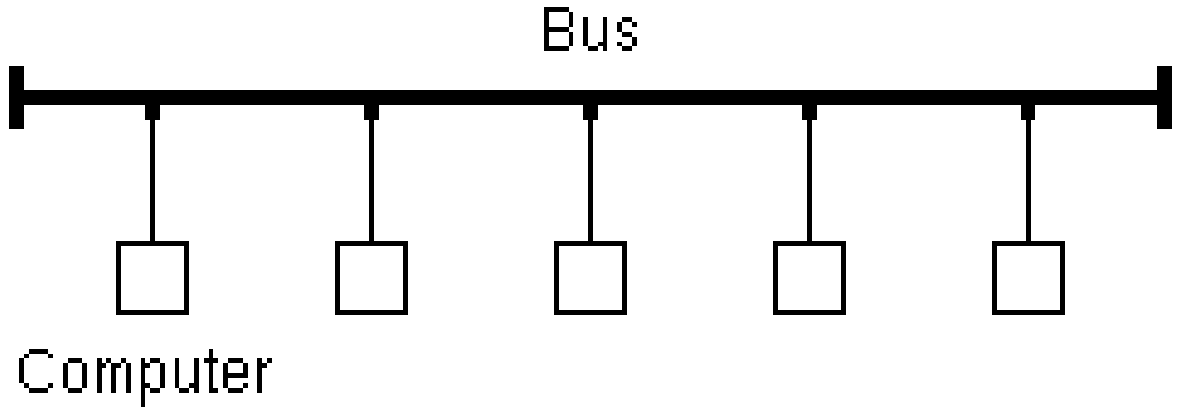
Evolution of Unix and Unix-like systems



1973: **Robert Metcalfe**, a member of the research staff for Xerox, develops Ethernet for connecting multiple computers and other hardware.



Modern Ethernet



Original Ethernet

Metcalfe's law states that the value of a telecommunications network is proportional to the square of the number of connected users of the system (n2).

1976: **Steve Jobs and Steve Wozniak** start Apple Computers on April Fool's Day and roll out the Apple I, the first computer with a single-circuit board, according to Stanford University.

Apple's first product, the Apple I, invented by Apple co-founder Steve Wozniak, was sold as an assembled circuit board and lacked basic features such as a keyboard, monitor, and case. The owner of this unit added a keyboard and wooden case

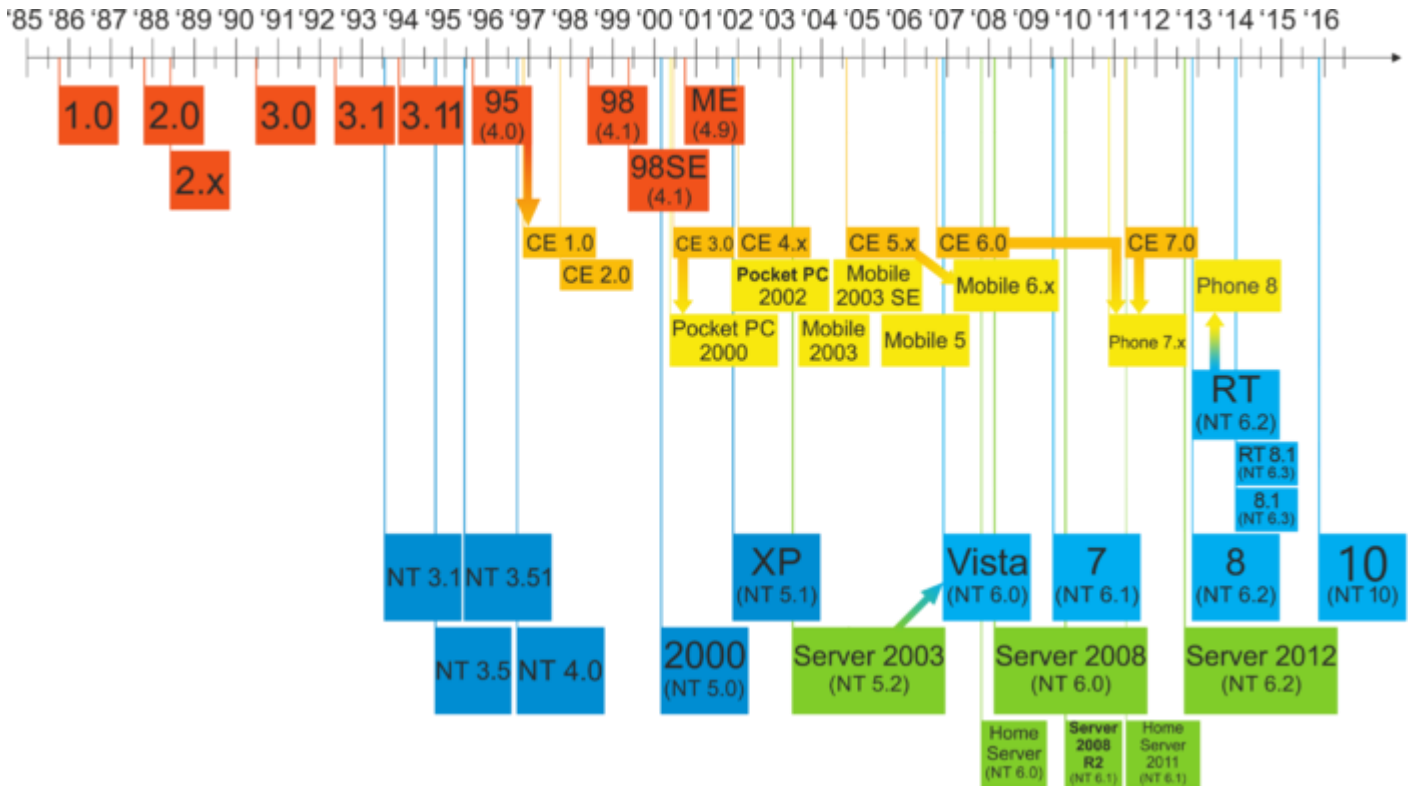

MAVERICK MEDIA

1981: The first **IBM personal computer**, code-named "Acorn," is introduced. It uses Microsoft's MS-DOS operating system. It has an Intel chip, two floppy disks and an optional color monitor. Sears & Roebuck and Computerland sell the machines, marking the first time a computer is available through outside distributors. It also popularizes the term PC.

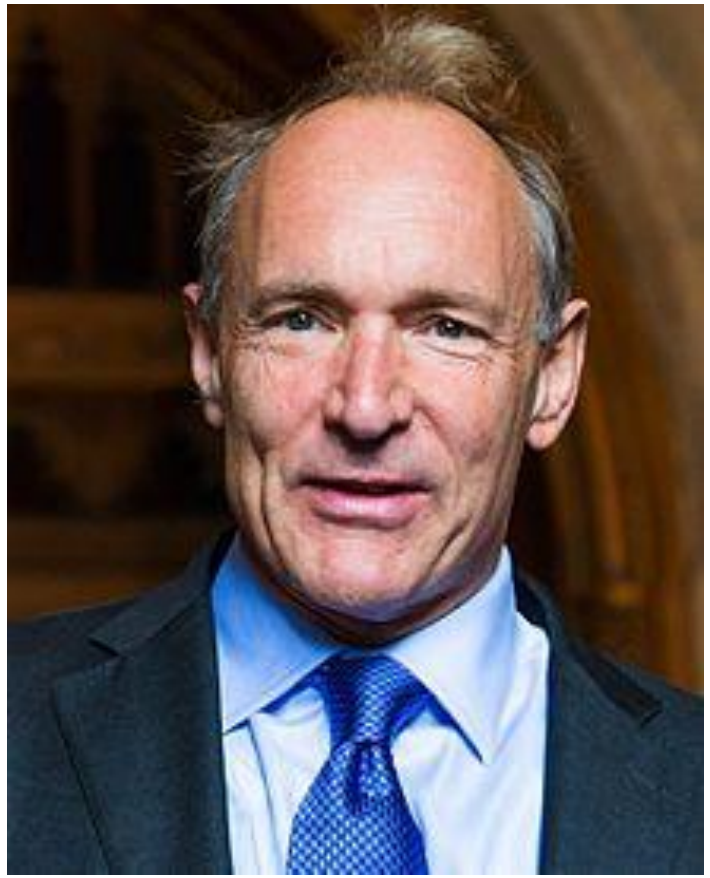
1985: Microsoft announces **Windows**, according to Encyclopedia Britannica. This was the company's response to Apple's GUI. Commodore unveils the Amiga 1000, which features advanced audio and video capabilities.

a graphical operating system shell for MS-DOS

Windows



1990: **Tim Berners-Lee**, a researcher at CERN, the high-energy physics laboratory in Geneva, develops HyperText Markup Language (HTML), giving rise to the World Wide Web.



HTML

HTTP

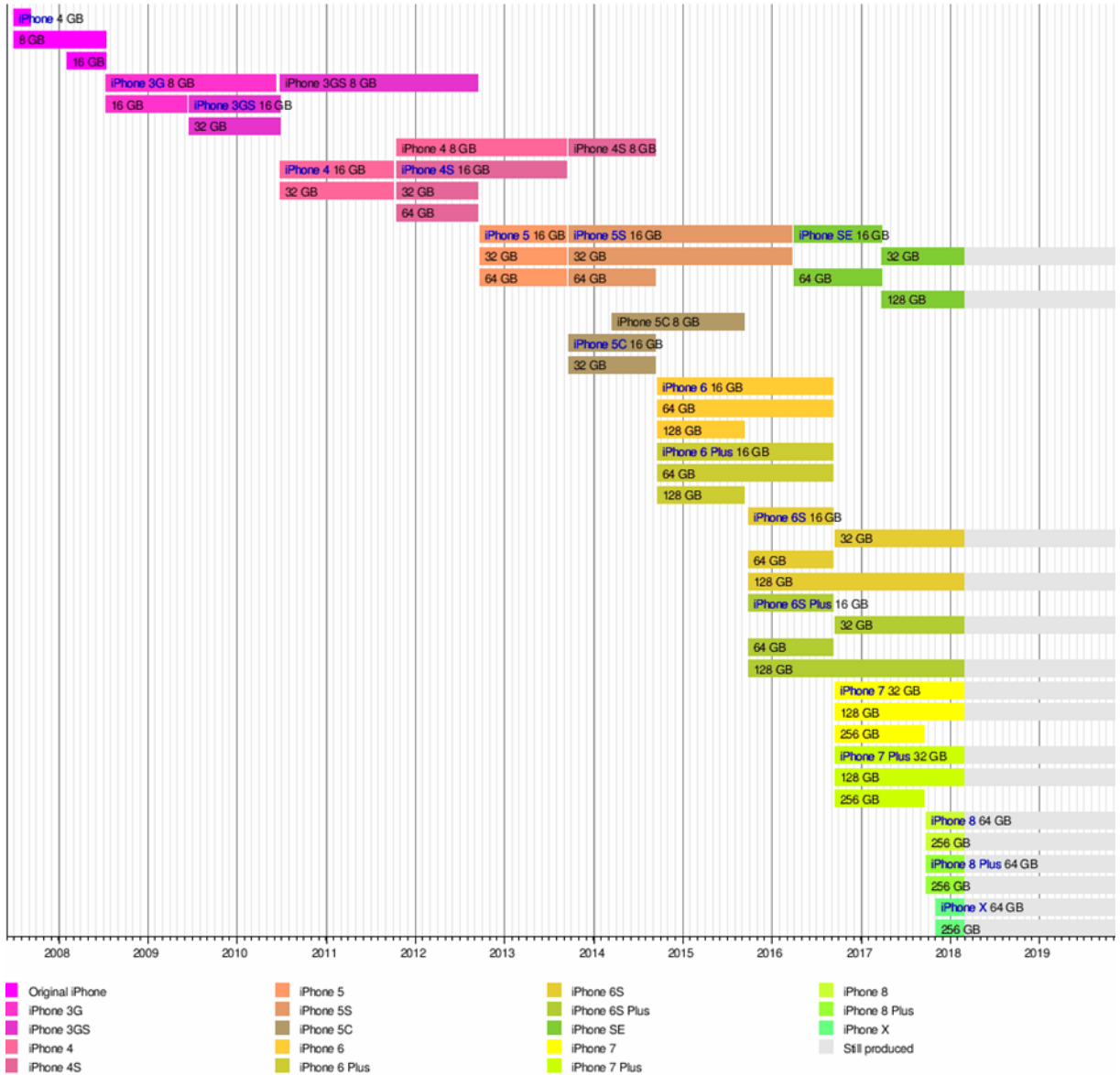
WWW

1993: The **Pentium** microprocessor

1996: **Sergey Brin and Larry Page** develop the Google search engine at Stanford University.

2007: The **iPhone** brings many computer functions to the smartphone.

2010: Apple unveils the **iPad**, changing the way consumers view media and jumpstarting the dormant tablet computer segment.



2016: The first reprogrammable **quantum computer** was created.

2017: The Defense Advanced Research Projects Agency (DARPA) is developing a new "Molecular Informatics" program that uses **molecules as computers**.