

Typology of programming languages

~ Before Personnal Computers Era ~

Operating system

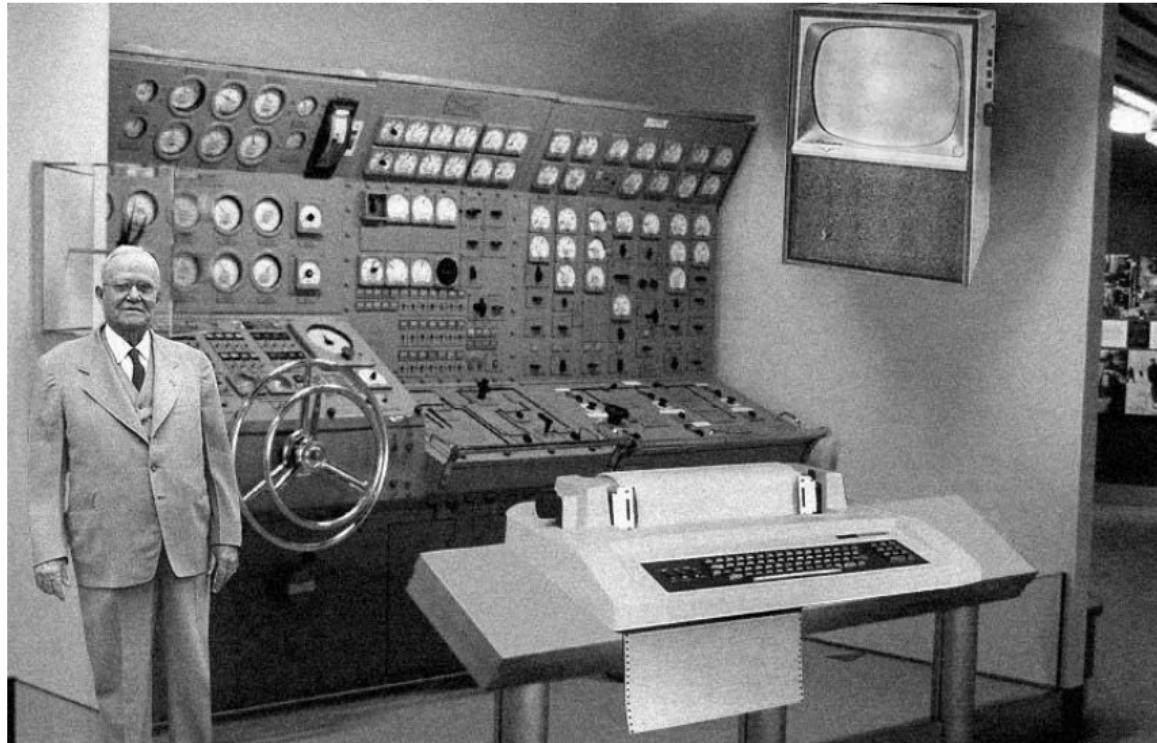
- 1954 The first operating system,
used on IBM 704.

RAND Corporation

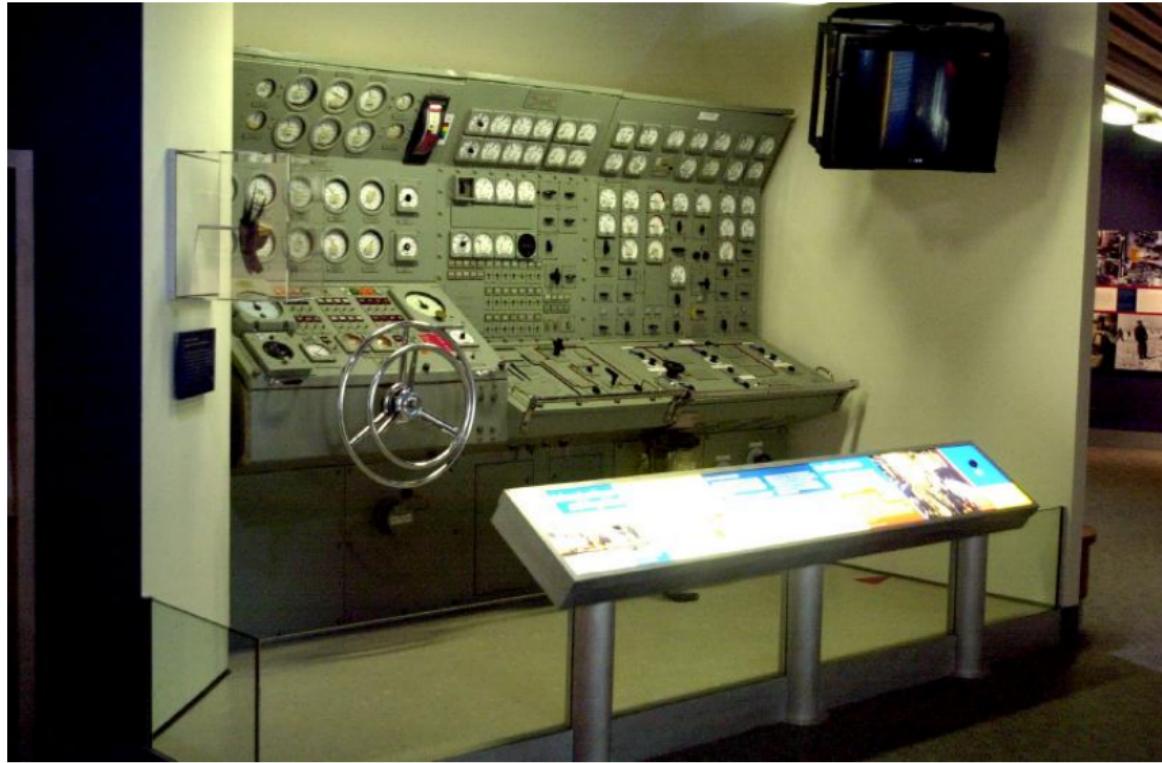
- **1954-11** Scientists from RAND Corporation have created this model to illustrate how a "home computer" could look in the year 2004.
However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require not yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems.
With teletype interface and the Fortran language, the computer will be easy to use

1954 prevision of computers in 2004

Note the joystick



Submarine maneuvering room



Ordinateur

- **1955** First computer user group:
SHARE (IBM 701)
- **1955** IBM asks Jacques Perret, a French philologist, for a French translation of the term “computer”. He proposes the word “*ordinateur*”.

Movie “Desk Set”, with Katharine Hepburn



The Traitorous Eight

- 1957 The Traitorous Eight leave the Shockley Semiconductor Laboratory to form Fairchild Semiconductor.

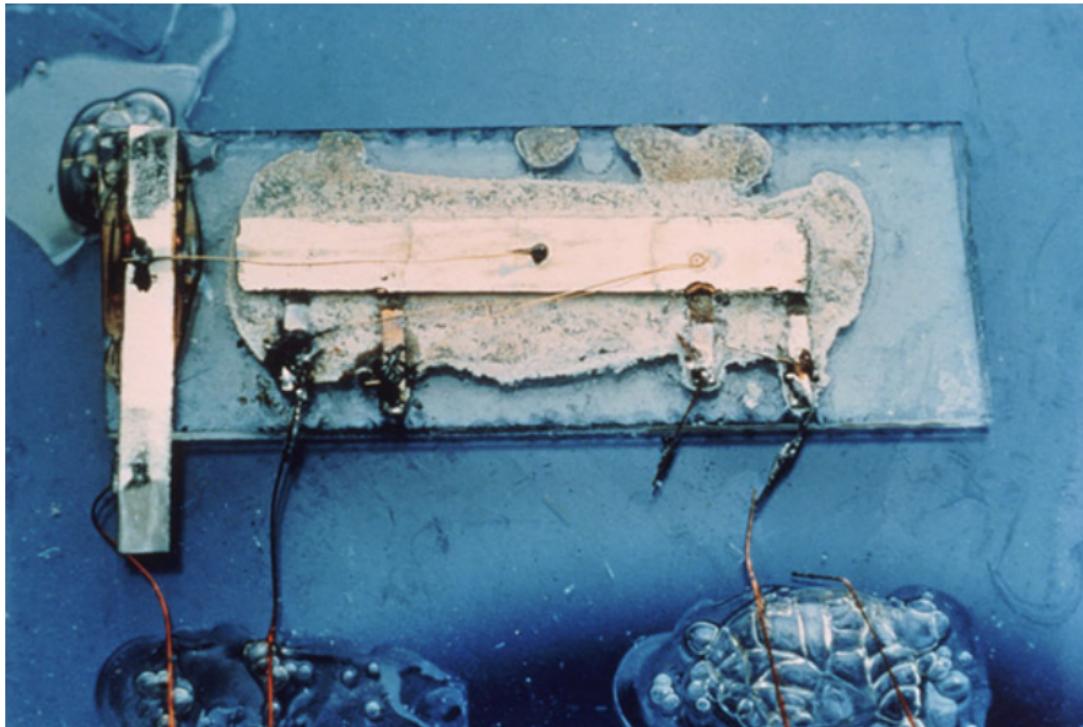


Gordon Moore, Sheldon Roberts, Eugene Kleiner, Robert Noyce, Victor Grinich, Julius Blank, Jean Hoerni, and Jay Last.

1958

- **1958** The first fully transistorized supercomputer, the CDC 1604.
- **1958** Texas Instruments makes the first integrated circuit.

Jack Kilby's first integrated circuit



1959

- **1959** COBOL is defined.
- **1959** IBM introduces the 1401. Over 10,000 units will be delivered during its lifetime.

1960: First computer driven telephone switch



Removable disks

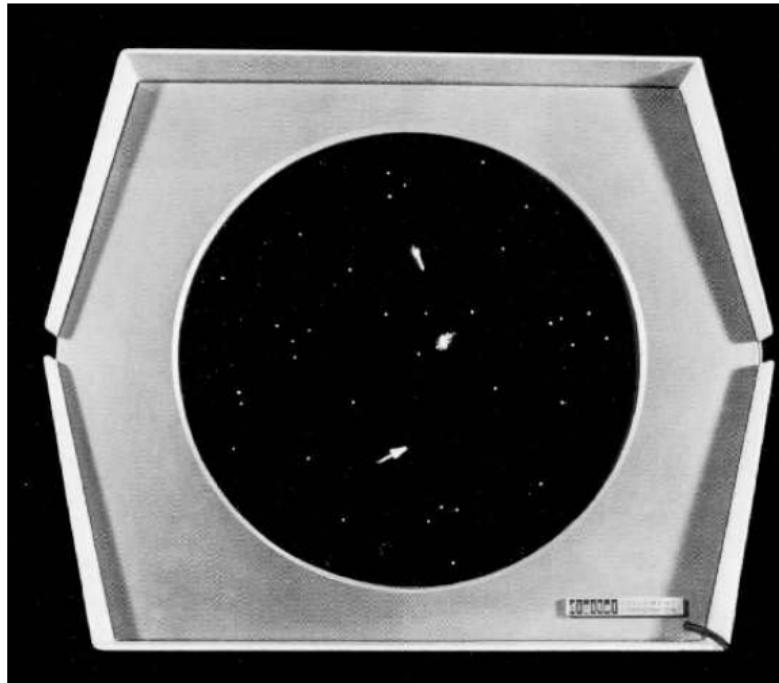
- **1960** Removable disks first appear on IBM 1311 with 6 disks that could hold 2.6 MB



1960: The first minicomputer, the PDP-1



1962: The first video game: Space war



Steve Russell in 2002



Tandy Radio Shack

- **1963** Tandy acquires Radio Shack
(9 stores).

1964

- 1964 MIT students play music on a PDP-1
sound: we-shall-overcome.au
- 1964 Control Data Corporation introduces the CDC 6000, the most powerful computer for several years.
- 1964 BASIC (Beginners All-purpose Symbolic Instruction Code) is created.

1965

- **1965** Control Data Institute provides computer-related education.
- **1964** Douglas Engelbart creates the first mouse

First Mouse



Mother of All Demos

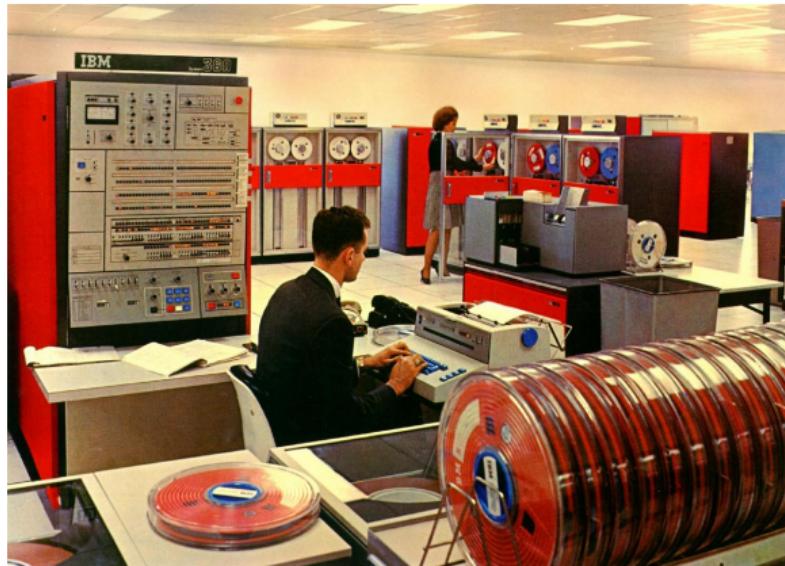
video: engelbart-7

According to Herb Sutter this *Mother of All Demos* demonstrated prototypes for::

- The personal computer for dedicated individual use all day long.
- The mouse.
- Internetworks.
- Network service discovery.
- Live collaboration and desktop/app sharing.
- Hierarchical structure within a file system and within a document.
- Cut/copy/paste, with drag-and-drop.
- Paper metaphor for word processing.
- Advanced pattern search and macro search.
- Keyword search and multiple weighted keyword search.
- Catalog-based information retrieval.
- Flexible interactive formatting and line drawing.
- Hyperlinks within a document and across documents.
- Tagging graphics, and parts of graphics, as hyperlinks.
- Shared workgroup document collaboration with annotations etc.
- Live shared workgroup collaboration with live audio/video teleconference in a window.

IBM-360

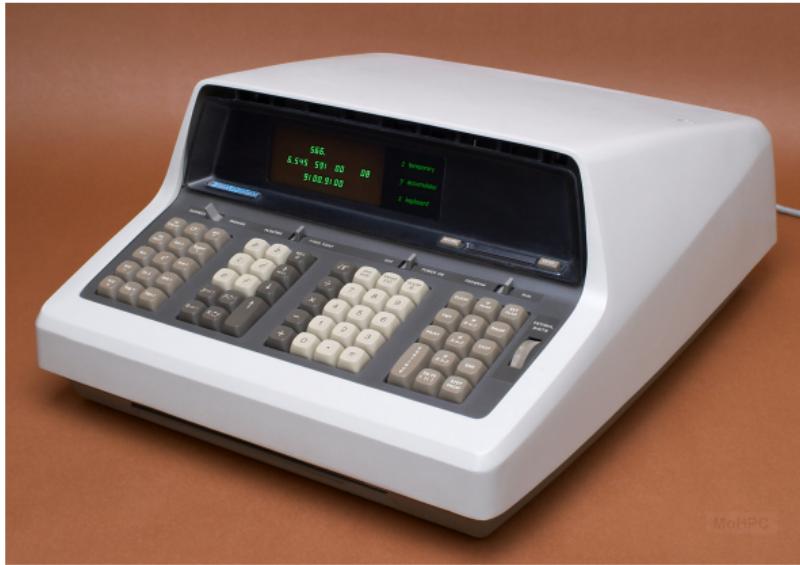
- 1965 IBM ships the first System 360, its first integrated circuit-based, or third generation computer.



1965-1968

- **1965** First computer science Ph.D. is granted to Keller, Mary Kenneth at the Wisconsin-Madison.
- **1965** Texas Instruments offers the first solid-state hand-held calculator.
- **1968** First Hewlett-Packard calculator. 20Kg, \$4 900.

HP 9100a



Intel and AMD

- **1968-07-18** Integrated Electronics (Intel) Corp. is founded by Gordon E. Moore (chemist and physicist) and Robert Noyce (physicist and co-inventor of the integrated circuit).
- **1969** AMD is founded

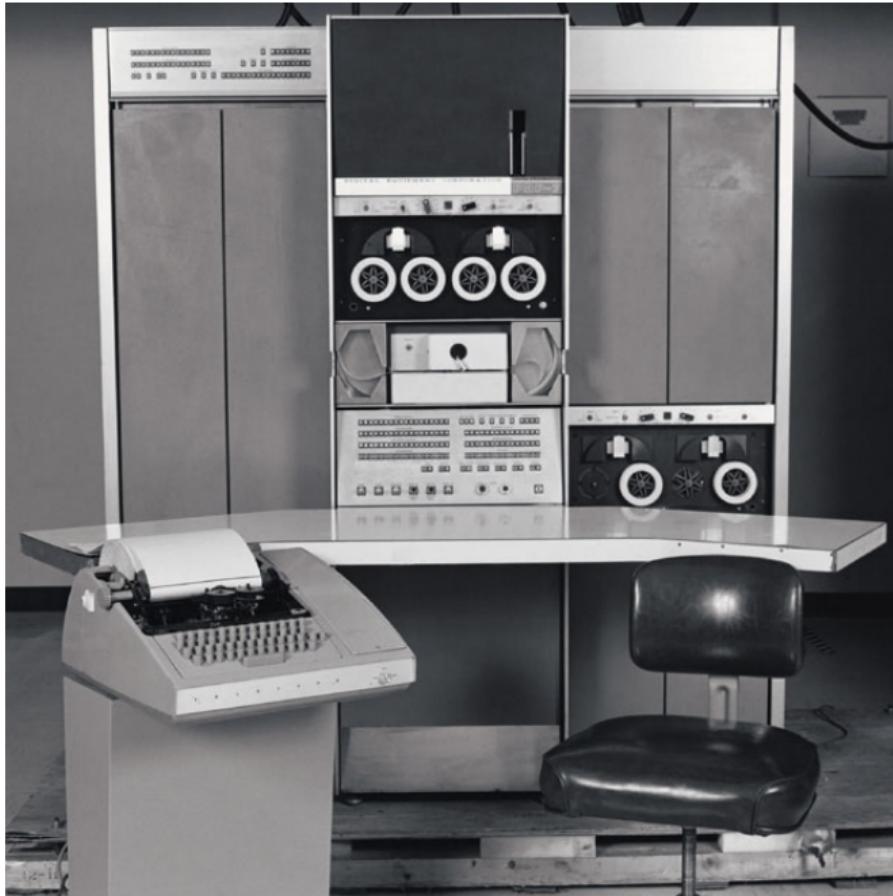
1969

- **1969** Bell Labs drop out of the MULTICS project (Multiplexed Information and Computing Service).

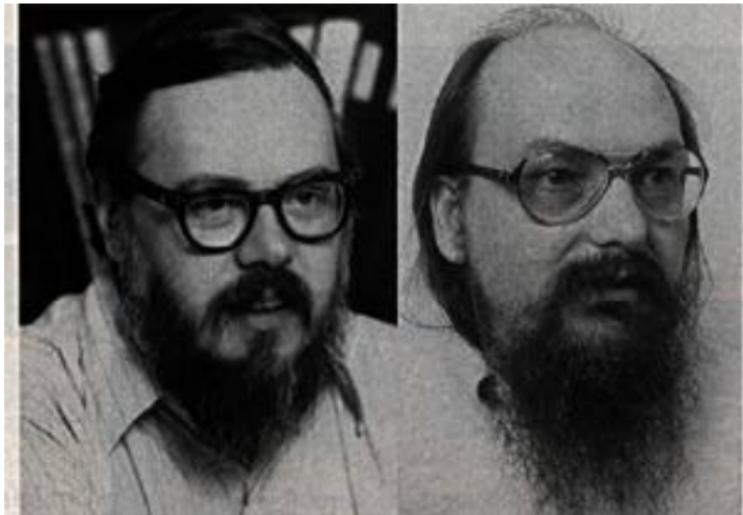
Ken Thompson implements UNICS on a PDP/7 (4K of 18 bit words) in one month while his wife is in vacation. One week per component: kernel, shell, editor, and assembler.

UNICS, a joke made by Brian Kernighan (or Peter Neumann standing for the UNIplexed Information and Computing Service, since the PDP-7 version could support only one user—Ken. After too many bad puns about EUNCHS being a castrated MULTICS, the name was changed to UNIX

PDP/7



Denis MacAlistair Ritchie & Kenneth Lane Thompson



Dennis Ritchie and Kenneth Thompson: they set the style for software development – and for software developers

Ken Thompson & Denis Ritchie in front of a PDP/11



IBM 370

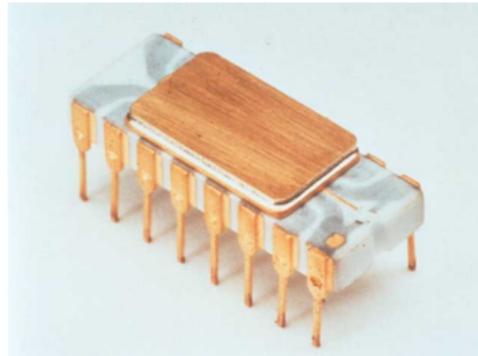
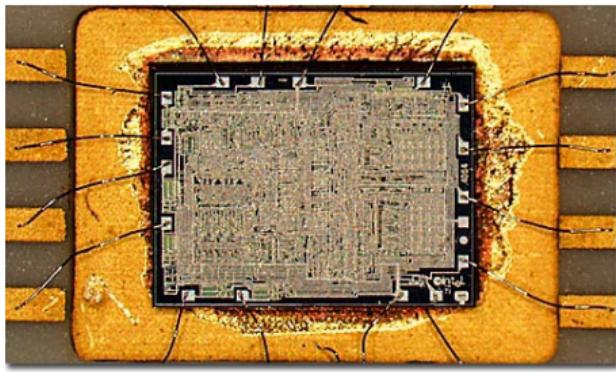
- 1970 IBM ships its first System 370, a fourth generation, computer.



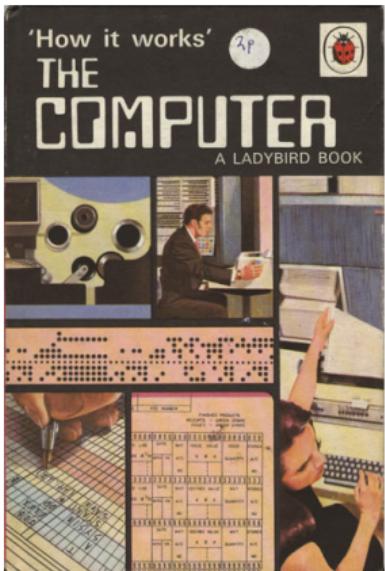
1971

- **1971** IBM introduces the 370/135 and 370/195 mainframe computers.
- **1971** IBM introduces floppy disks.
- **1971** Intel Corporation announces the first microprocessor, the Intel 4004, the “mini-programmer”

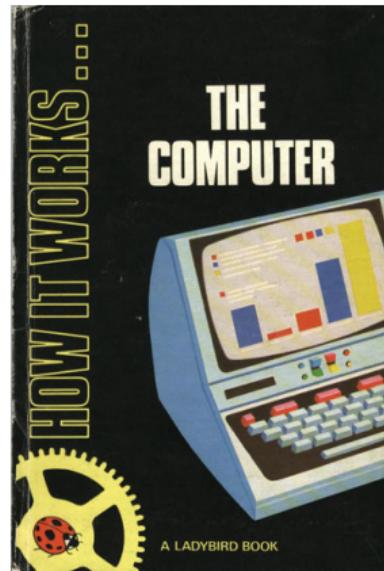
Intel inside, intel outside



“How It Works...The Computer” is published



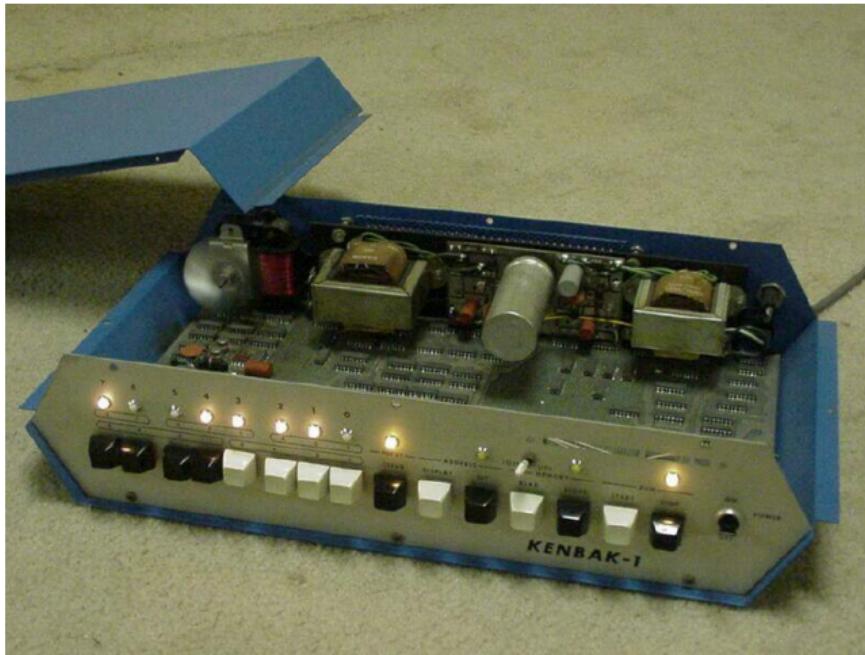
1st edition, 1971



2nd edition, 1979

Kenbak I

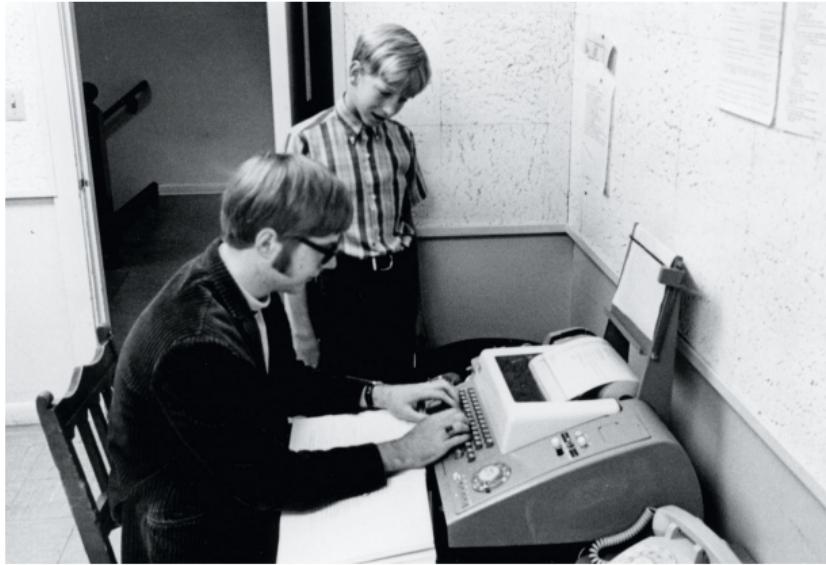
- The first personal computer, the Kenbak I. No processor! Only TTL. 256b RAM. \$750. About 40 units.



1972

- **1972** Nolan Bushnell of Atari introduces Pong, the first major coin-operated electronic video game
- **1972** First electronic pocket calculator is developed by Texas Instruments.
- **1972** Ethernet is invented at Xerox PARC by Robert Metcalfe (not only for computer, but for printers too).

Who's that?



Who's that?



Paul Allen, Bill Gates

1975

- MITS introduces the Altair personal computer

Named after a Star Trek episode, A Voyage to Altair.

The kit costs \$397. Designed by Ed Roberts and Bill Yates.

- Micro Soft is founded after William H. Gates III and Paul Allen sell BASIC to MITS for the Altair PC.

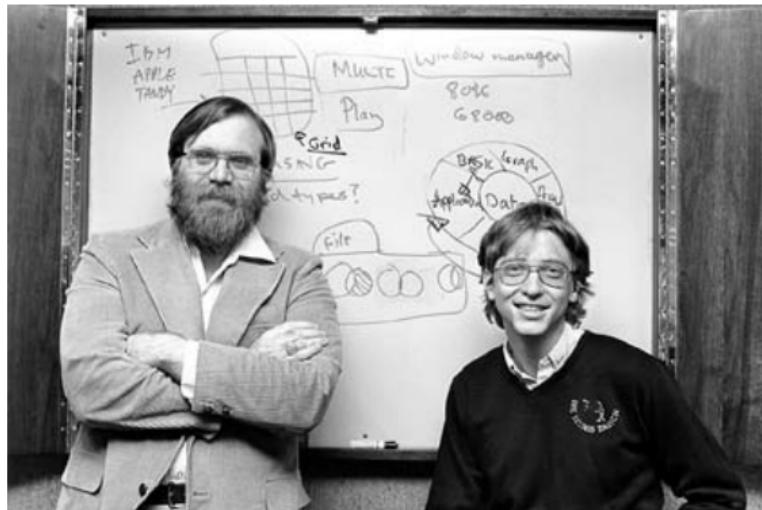
Micro Soft logo



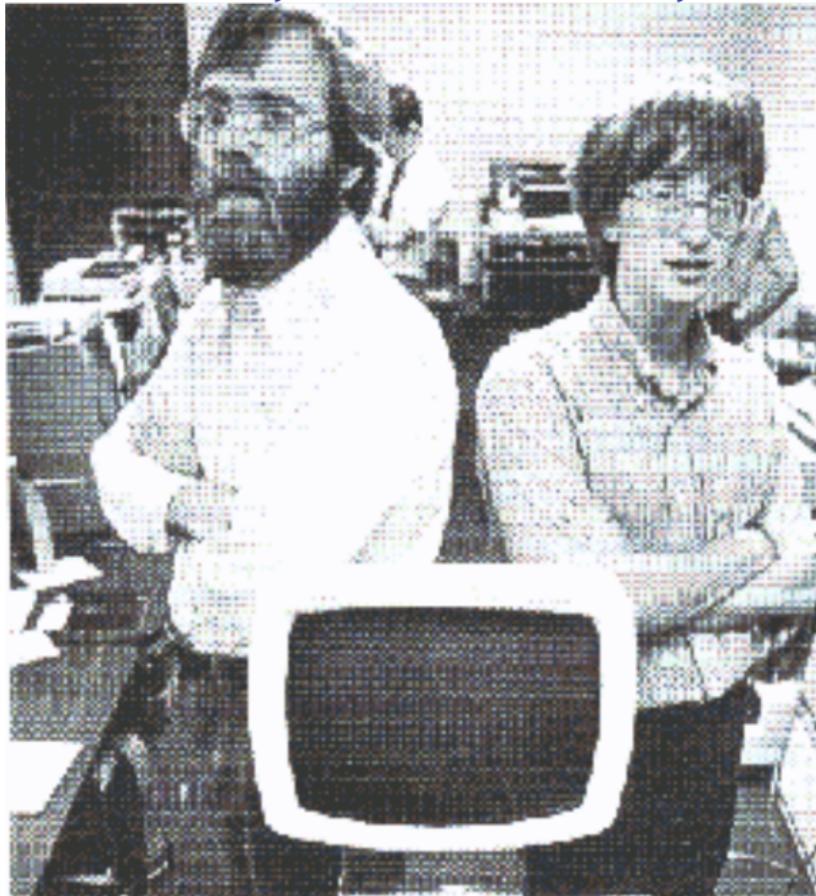
Microsoft logo in the mid 80s



Paul Allen, Bill Gates



Paul Allen, Altair Peecee, Bill Gates



Paul Allen, Bill Gates



1975

- **1975** The first computer store opens in Santa Monica, CA.
- **1975** IBM sells its first personnal computer, the PC 5100.
16K to 64K of memory, BASIC and APL, tape drive for program storage:
\$8,975 to \$19,975.

IBM PC 5100



1976

- **1976** Z-80 chip is introduced.
- **1976** Apple I is commercialized at \$666.66

Apple-I



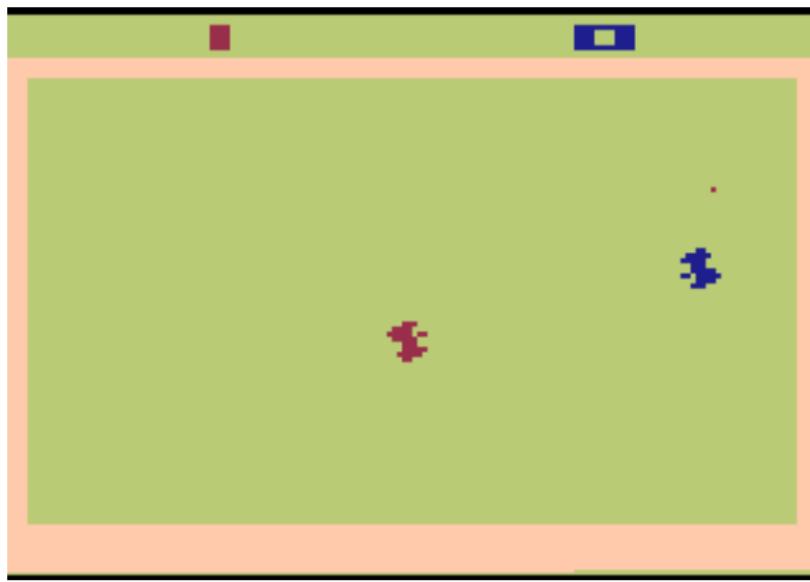
1977

- **1977-10** The Atari VCS 2600 is introduced on the US market

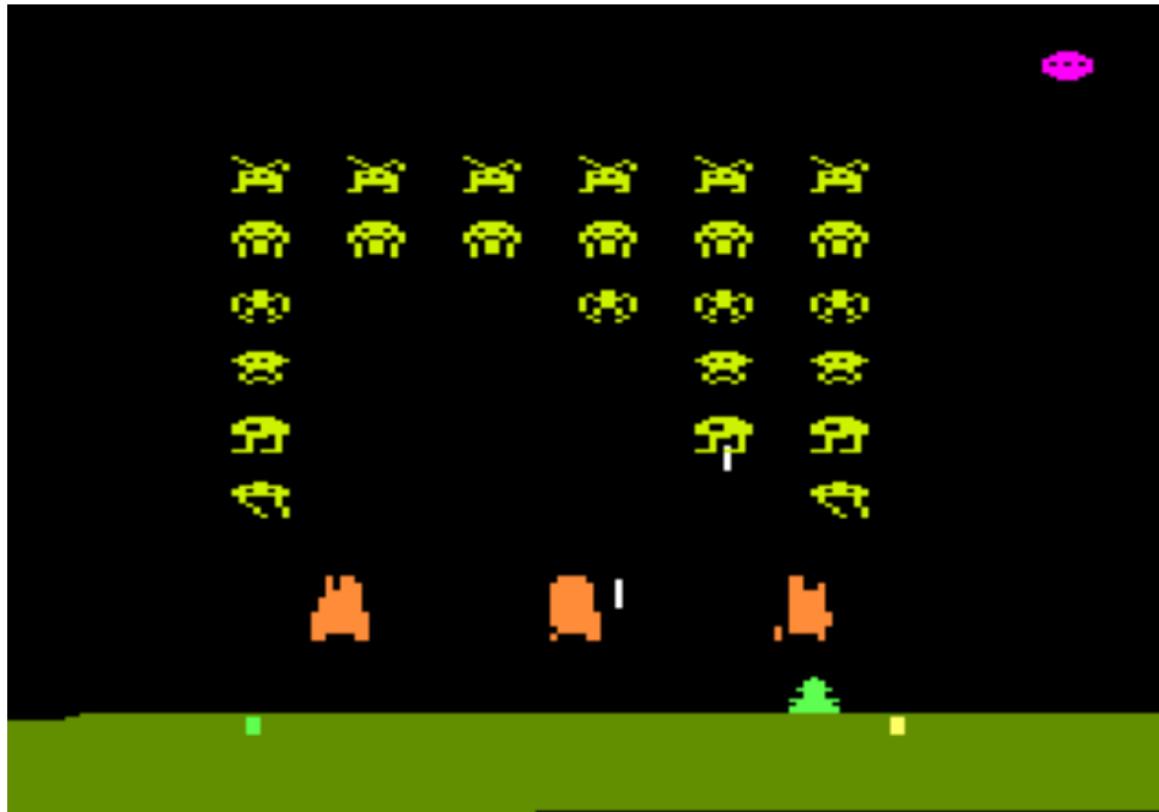
Atari VCS 2600



Combat (1977)



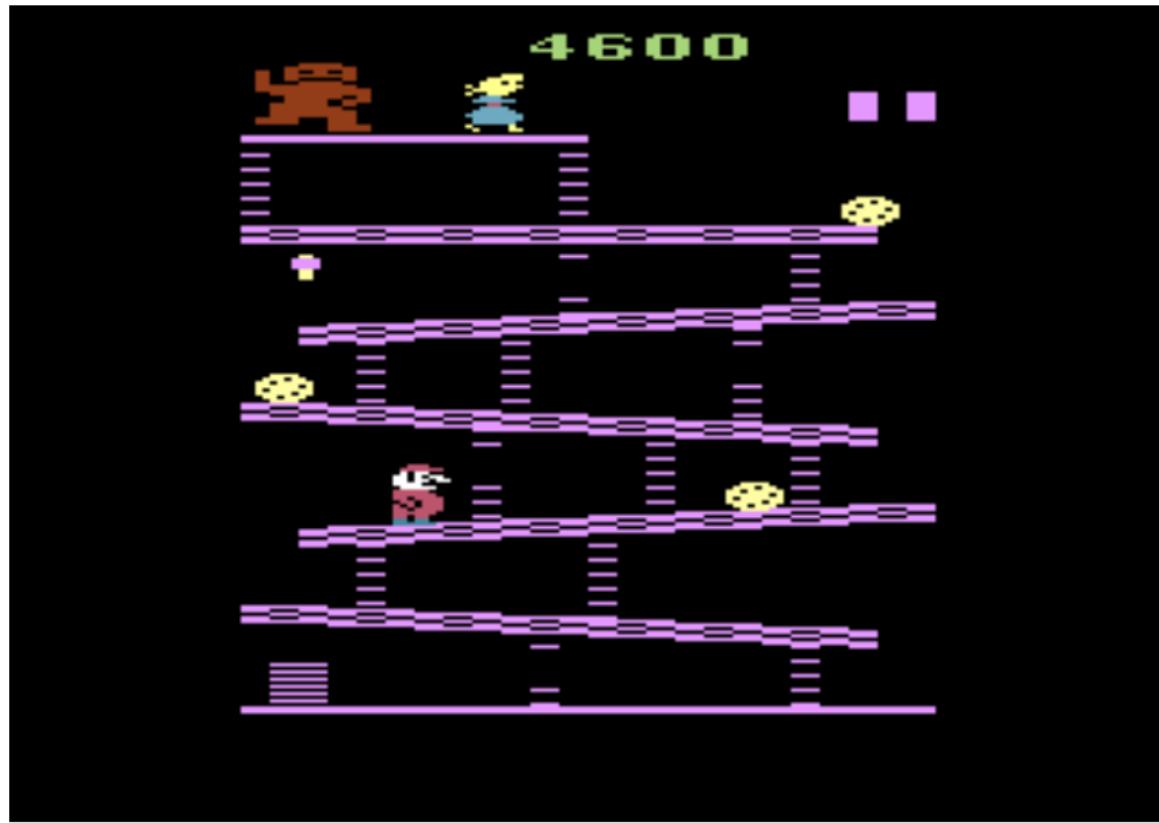
Space Invaders (1980)



Pacman (1982)



Donkey Kong (1982)



ET (1982)



Pitfall (1982)



Pole Position (1983)



Video games are a huge success

I WAS A TEENAGE ZOMBIE!

MIDWESTERN YOUTH TELLS HOW INFOCOM DEPROGRAMMING BROUGHT HIM BACK FROM A LIVING DEAD.

"I GOT SO I COULDN'T LET GO," confesses John Carlson of Hawkeye, Falls, Iowa. "My hands were glued to my joystick for 12 hours a day. Blisters covered both my thumbs, my wrists ached, my eyes throbbed... I'd given up eating and sleeping." It had started as a mindless hobby for young Johnny. But now, it had taken over his mind to green hell.

Finally, a concerned relative decided it was time to take action. Johnny's parents—both computer experts—had traced out after \$12,000.00 points—I forgot which game. When I came to, there was this personal computer in my room with an Infocom game in the disk drive. I just sat there, numb, staring at the words on the screen.

Then, the extraordinary happened. "It was like there was this voice in the computer, talking to my imagination," says John. "I was inside the story, so strong that I'd never experienced before—challenging puzzles, people I could almost touch, dangers I could really feel. Kind of like Infocom had plugged right into my mind, and shot me into a whole new dimension."

Now, I tell people I play video games. But the Infocom experience opened my eyes. I know now there's more to life than joysticks.

Johnny's folks agree. "We've got our boy back," says Mrs. Carlson, "thanks to Infocom."

We can't save all the zombies out there. But we will resurrect or reanimate them with the remarkable games of the ZORK® Trilogy, DEAD-LINE™, STARACROSS™ and SUSPENDED™. So please—before it's too late—rush today to your local computer store. Step up to Infocom games. All words. No pictures. The secret reaches of your mind are beckoning. A whole new dimension is in there waiting for you.

INFOCOM
The next dimension.

Infocom, Inc., 55 Wheeler St., Cambridge, MA 02138
For your Apple II, Apple II+, Commodore 64, C64/128, DEC Rainbow,
IBM PC, IBM PC XT, IBM PC ATC, NEC PC-9800, Osborne 1, TI Professional,
Tandy 1000, TRS-80 Color II

Bill Gates Mugshot

- Bill Gates arrested for traffic infraction.



Apple][



Jed's Other Poem

video jed-s-other-poem