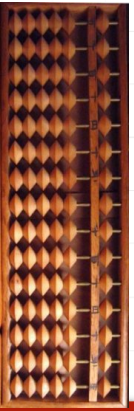


Information Technology
Short history of computing

ver. 15 z drobnymi modyfikacjami!

Wojciech Myszka

2023-11-13 11:18:27 +0100

Wrocław University
of Science and Technology

Sources of information

- primary
- secondary
- tertiary

Examples

The von Neumann Architecture

- Original report
  https://web.archive.org/web/20180127161630/http://virtualtravelog.net.s115267.gridserver.com/wp/wp-content/media/2003-08-TheFirstDraft.pdf
- Books and articles http://www.amazon.com/Essentials-Computer-Organization-Architecture-Linda/dp/1449600069/ref=sr_1_1?ie=UTF8&qid=1349284552&sr=8-1&keywords=Essentials+of+Computer+Organization+and+Architecture
- Wikipedia's article http://en.wikipedia.org/wiki/Von_Neumann_architecture

What is the difference?

- primary:
  - You have to find
  - You have to read
  - You have to understand
  - You have to conclude
  - You have to select information
- secondary
  - You have to read and understand (everything else is quite easy).
- tertiary
  - You have to select and verify.

Why the Wiki is (sometimes) good?

- It mostly works (there are tools and procedures for removing fake articles)
- It is easy to move from one language version to the other

Home page (reminder)

- http://kmim.wm.pwr.edu.pl/myszka/didactics/information-technology/
  or (much better) use Google to search for „wojciech myszka didactics” i.e. https://www.google.com/search?q=myszka+wojciech+didactics
- or e-portal W10MBM-SI3075W # W # Information Technologies - Lecture

Simplistic history of Numbers

Numeral system

(In general) There are two kinds of numeral systems:

- additive (i.e. Roman numerals or hieroglyphic): values are formed by combining symbols and adding the values.
- positional: value of the figure depends on the base and the position within numeral: the most “important” figures are on the left and the last important on the right.

Simplistic history of Numbers

Numeral system

(In general) There are two kinds of numeral systems:

- additive (i.e. Roman numerals or hieroglyphic): values are formed by combining symbols and adding the values.
- positional: value of the figure depends on the base and the position within numeral: the most “important” figures are on the left and the last important on the right.

1234

Simplistic history of Numbers

Numeral system

(In general) There are two kinds of numeral systems:

- additive (i.e. Roman numerals or hieroglyphic): values are formed by combining symbols and adding the values.
- positional: value of the figure depends on the base and the position within numeral: the most “important” figures are on the left and the last important on the right.

1234 MCCXXXIV

Simplistic history of Numbers

Numeral system

(In general) There are two kinds of numeral systems:

- additive (i.e. Roman numerals or hieroglyphic): values are formed by combining symbols and adding the values.
- positional: value of the figure depends on the base and the position within numeral: the most “important” figures are on the left and the last important on the right.

1234 MCCXXXIV

$1 * 10^3 + 2 * 10^2 + 3 * 10^1 + 4 * 10^0$

$1000 + 100 + 100 + 10 + 10 + 10 + 4$

Simplistic history of Mathematics I

How we used to count (objects):

- using body parts (fingers?),
- making signs (notches) on sticks or bones,...
- knots on a rope (twine), things (pebbles, shells) in a pouch,
- grouping things (of two — pairs, of twelve — dozen, twelve dozens or 144 — gross, five dozens or 60 — threescore, 20 — score, trio, trinity, duet,...).

Simplistic history of Mathematics II

How we used to count (objects):

- what about “zero” (0)? Its name can be: zero, nought (UK), naught (US), nil,... The first known English use of zero was in 1598.

Nice resource to read: http://www-history.mcs.st-and.ac.uk/Indexes/HistoryTopics.html (especially about the zero digit: https://mathshistory.st-andrews.ac.uk/HistTopics/Zero/.

More history I

1. Babylonian numerals — positional, base-60 system; there is no “zero digit”; they left free place.

More history II

Example:

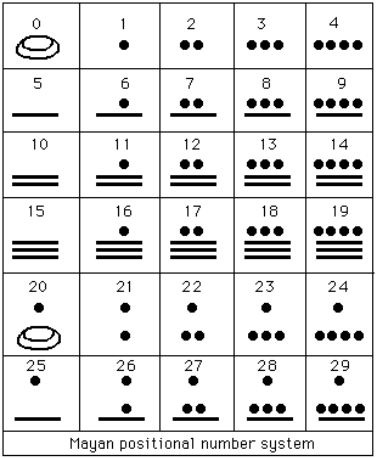
3756 =

(3756 = 1 * 60^2 + 2 * 60 + 36)

More history III

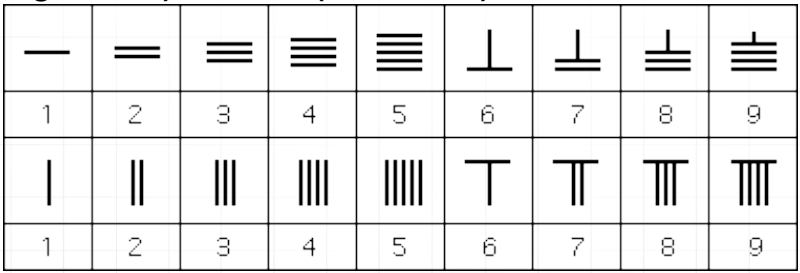
2. Mayan numerals — positional base-20 system (with zero!). Figures less then “20” were composed by combination of “1” and “5”.

More history IV



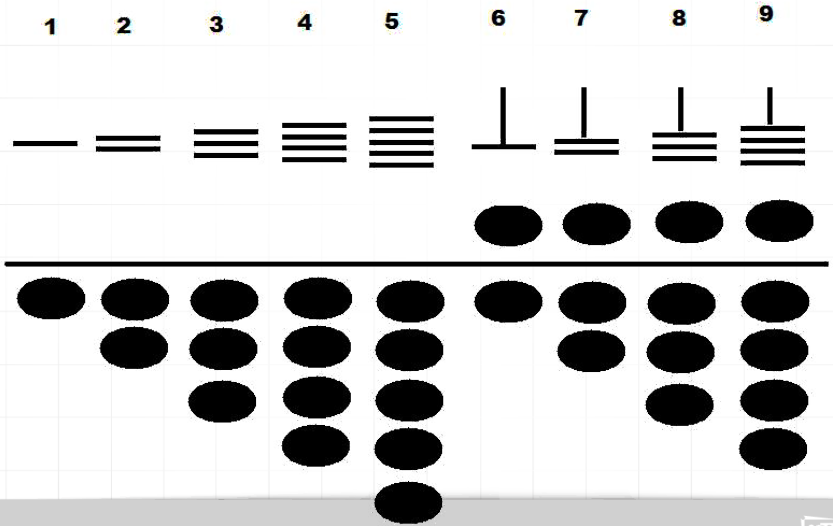
More history V

3. (Old) Chinese **rod** numerals — positional, decimal system (no zero digit); figures composed in “additive way”: horizontal or vertical lines (rods); larger number are composed from alternately “horizontal” and “vertical” figures, there is no “zero digit”; they left free place. They use fractions.

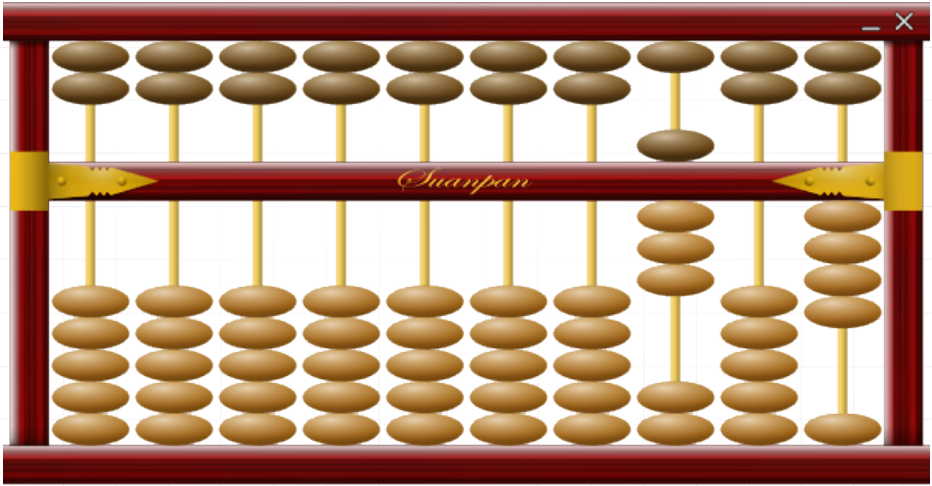


This notation is closely connected with the Chinese abacus.

More history VI



More history VII



More history VIII

4. Indian numerals — system taken from China; they added figure 0 introducing modern positional 10-based numeral system (known here, in Europe as ”Arabic numerals”...)

1	2	3	4	5	6	7	8	9

Brahmi numerals around 1st century A.D.

More history IX

1	2	3	4	5	6	7	8	9
								

Gupta numerals around 4th century A.D.

1	2	3	4	5	6	7	8	9	0
									

Nagari numerals around 11th century A.D.

More history X

5. Arabic numerals (also known as Hindu numerals or Indo-Arabic numerals) — Mathematicians from Persia not only gave the final shape of the digits but also developed many practical computation algorithms.

More history XI

Brahmi										
Hindu	०	१	२	३	४	५	६	७	८	९
Arabic	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
Medieval	0	1	2	3	4	5	6	7	8	9
Modern	0	1	2	3	4	5	6	7	8	9

More history XII

6. European numerals (known as “Arabic numerals”) — Europe took the numbers from the Arabs, but the final form has evolved quite a while:

	1	2	3	4	5	6	7	8	9	0
Rękopis z 976 r.	1	2	3	4	5	6	7	8	9	
Rękopis z początków XII w.	1	2	3	4	5	6	7	8	9	0
Rękopis dzieła Sacrobosco z 1442 r.	1	2	3	4	5	6	7	8	9	0
Cyfry A. Dürera z 1525 r.	1	2	3	4	5	6	7	8	9	
Z wydanego drukiem dzieła Widmanna z 1489 r.	1	2	3	4	5	6	7	8	9	0

More history XIII

Roman numerals were in Europe for a long time (as the fourteenth century) in common use. Their main disadvantage (in addition to the additivity) is the lack of zero (although the found at least one record with the letters N [nullo] as zero.) Roman numerals are a modification of the system used by the Etruscans.

More history XIV

Fractions in Roman System:

−	1/12
=	2/12 or 1/6
− =	3/12ths or 1/4
==	4/12ths or 1/3
− ==	5/12ths
S	1/2
S −	1/2 plus 1/12th or 7/12ths
S =	1/2 plus 2/12ths or 2/3
S − =	1/2 plus 3/12ths or 3/4
S ==	1/2 plus 4/12ths or 5/6
S − ==	1/2 plus 5/12ths or 11/12ths

More history XV

History of computers I

till 1900

- The first evidence of counting is dated back around 50,000 B.C.
- (30,000 B.C.) Paleolithic peoples in Europe record numbers by notching tallies on bones, ivory, and stone.
- (2600 B.C.) Chinese introduce the abacus.
- (300 B.C.) Mathematician Euclid releases Euclid's Elements, 13 books that summarize all mathematical knowledge of the Greeks.
- (260 B.C.) The Maya develop base-20 system of mathematics, which introduce zero.

History of computers II

till 1900

- (1440) Johannes Gutenberg completes his development of the Gutenberg press, the first printing press.
- (1500) Leonardo da Vinci invents the mechanical calculator.
- (1502) Peter Henlein, a craftsman from Nuremberg Germany, creates the first watch.
- (1617) John Napier developed system known as “Napiers’ Bones” allowing for easy multiplying and dividing long numbers.

History of computers III

till 1900

- (1623) The first known workable mechanical calculating machine is invented by Germanys Wilhelm Schickard. The machine is based on the idea of Napier's Bones, mentioned earlier.
- (1642) Frances Blaise Pascal invents a machine, called the Pascaline, that can add, subtract, and carry between digits.
- (1671) Gottfried Leibniz introduces the Step Reckoner, a device that can multiply, divide, and evaluate square roots.

History of computers IV

till 1900

- (1679) Gottfried Leibniz demonstrates binary arithmetic, a discovery that shows every number can be represented by 0 and 1 only.
- (1774) The first telegraph is built.
- 1780: Electricity — Benjamin Franklin.
- (1804) Frances Joseph-Marie Jacquard completes his fully automated loom that is programmed by punched cards.
- (1822) In the early 1822 Charles Babbage purposed and begins developing the Difference Engine.

History of computers V

till 1900

- (1815) Ada Lovelace is born December 15, 1815 (passes away November 27, 1852.)
- (1827) George Simon Ohm introduces Ohm's law in the book *Die galvanische Kette, mathematisch bearbeitet*.
- (1831) Joseph Henry of Princeton invents the first working telegraph.
- (1838) Samuel Morse invents a code (later called Morse code) that used different numbers to represent the letters of the English alphabet and the then digits.

History of computers VI

till 1900

- (1866) The first successful Trans-Atlantic cable is laid from Ireland to Newfoundland.
- (1868) Christopher Sholes is issued a patent on July 14, 1868 for a typewriter utilizing the QWERTY layout keyboard still used today.
- (1876) Scottish-Canadian-American Alexander Graham Bell is often credited as inventing the telephone makes the first call March 10, 1876.

History of computers VII

till 1900

- (1888) Nikola Tesla patents the rotating field motor May 1, 1888 and later sells the rights to George Westinghouse. This invention helps create and transmit AC power and today is still a method for generating and distributing AC power.
- (1896) Herman Hollerith starts the Tabulating Machine Company, the company later becomes the well-known computer company IBM (International Business machines).
- (1897) German scientist Karl Ferdinand Braun invents the Cathode-Ray Oscilloscope.

History of computers I

till 1970

- (1901) The first radio message is sent across the Atlantic Ocean in Morse code.
- (1921) Czech playwright Karel Capek coins the term "robot" in the 1921 play RUR (Rossum's Universal Robots).
- (1927) Philo Taylor Farnsworth becomes the first person to successfully transmit a TV signal on September 7, 1927.
- (1936) Germanys Konrad Zuse creates the Z1, one of the first binary digital computers and a machine that could be controlled through a punch tape.
- (1936) Alan Turing develops the Turing Machine.

History of computers II

till 1970

- (1936) Dvorak receives a patent for the Dvorak keyboard May 12, 1936.
- (1937) Iowa State Colleges John Vincent Atanasoff and Clifford Berry begin work on creating the binary-based ABC (Atanasoft-Berry Computer). Considered by most to be the first electronic digital computer.
- (1938) Orson Welles and Houseman broadcast H.G. Welles War of the Worlds on the airways October 30th as a Halloween spoof.

History of computers III

till 1970

- (1939) George Stibitz completes the Complex Number Calculator capable of adding, subtracting, multiplying and dividing complex numbers. This device provides a foundation for digital computers.
- (1939) Iowa State Colleges John Vincent Atanasoff and Clifford Berry create a prototype of the binary-based ABC (Atanasoft-Berry Computer).

History of computers IV

till 1970

- (1940) First version of the bombe (an electro-mechanical device used by British cryptologists to help decipher German Enigma-machine-encrypted secret messages during World War II). Developed by Turing, installed at Bletchley Park.
- (1941) German Konrad Zuse finishes the Z3, a fully program-operational calculating machine. The computer is publicly introduced in Berlin May 12, 1941.
- (1943) The Colossus, the first eclectic programmable computer developed by Tommy Flowers is first demonstrated in December 1943.

History of computers V

till 1970

- (1943) ENIAC (Electronic Numerical Integrator and Computer), the first general-purpose electronic digital calculator begins to be constructed. This computer by most is considered to be the first electronic computer.
- (1944) The Harvard Mark I computer is officially presented at Harvard University on August 7, 1944. The relay-based Harvard-IBM MARK I I a large programmable-controlled calculating machine provides vital calculations for the U.S. Navy. Grace Hopper becomes its programmer.

History of computers VI

till 1970

- (1945) The Von Neumann Architecture and a description of a general purpose electronic digital computer with a stored programs is introduced in John von Neumann's report of the EDVAC.
- (1945) The term "bug" as computer bug was termed by Grace Hopper when programming the MARK II.
- (1946) Freddie Williams applies for a patent on his cathode-ray tube (CRT) storing device in December. The device that later became known as the Williams tube is capable of storing between 512 and 1024 bits of data.

History of computers VII

till 1970

- (1946) ENIAC computer completed.
- (1948) Andrew Donald Booth creates magnetic drum memory, which is two inches long and two inches wide and capable of holding 10 bits per inch.
- (1948) The television begins to divert radio audiences.
- (1949) Claude Shannon builds the first machine that plays chess at the Massachusetts Institute of Technology.
- (1949) The Harvard-MARK III, the first of the MARK machines to use an internally stored program and indirect addressing, goes into operations again under the direction of Howard Aiken.

History of computers VIII

till 1970

- (1949) Popular Mechanics predicts: "Computers in the future may weigh no more than 1.5 tons."
- (1949) The small-scale electronic machine (SSEM) is fully operational at Manchester University.
- (1950) Alan Turing publishes his paper *Computing Machinery and Intelligence* in October. This paper helps create the Turing Test.
- (1951) The first business computer, the Lyons Electronic Office (LEO) is completed by T. Raymond Thompson, John Simmons and their team at Lyons Co.

History of computers IX

till 1970

- (1951) The first commercial computer, the "First Ferranti MARK I" is now functional at Manchester University.
- (1953) IBM introduces the 701 to the public April 7, 1953. The 701 is IBM's first electric computer and first mass produced computer.
- (1953) The IBM 701 becomes available to the scientific community. A total of 19 are produced and sold.
- (1954) IBM produces and markets the IBM 650. More than 1,800 of these computers are sold in an eight-year span, with 120 installations in the first year.

History of computers X

till 1970

- (1954) Alan Turing passes away June 7, 1954.
- (1954) The first version of FORTRAN (formula translator) is published by IBM.
- (1955) Bell Labs introduces its first transistor computer. Transistors are faster, smaller and create less heat than traditional vacuum tubs, making these computers more reliable and efficient.
- (1955) The ENIAC is turned off for the last time. Its estimated to have done more arithmetic than the entire human race had done prior to 1945.

History of computers XI

till 1970

- (1956) On September 13, 1956 the IBM 305 RAMAC is the first computer to be shipped with a hard drive that contained 50 24-inch platters and was capable of storing 5 million characters and weighed a ton.
- (1957) Russia launches the first artificial satellite, named Sputnik on October 4, 1957.
- (1958) The first integrated circuit is first developed by Robert Noyce of Fairchild Semiconductor and Jack Kilby of Texas Instruments. The first IC was demonstrated on September 12, 1958.

History of computers XII

till 1970

- (1960) 2,000 computers are in use in the United states.
- (1960) The Common Business-Oriented Language (COBOL) programming language is invented.
- (1960) Psychologist Frank Rosenblatt creates the Mark I Perception, which has an "eye" that can learn to identify its ABCs.
- (1961) General Motors puts the first industrial robot the 4,000 pound Unimate to work in a New Jersey factory.
- (1963) Douglas Engelbart at the Stanford Research Institute invented the first mouse prototype.

History of computers XIII

till 1970

- (1963) The American Standard Code for Information Interchange (ASCII) is developed to standardize data exchange among computers.
- (1964) The TRANSIT system becomes operational on U.S. Polaris submarines. This system later becomes known as GPS.
- (1965) Gordon Moore makes an observation in a April 19, 1965 paper that later becomes widely known as Moore's Law.
- (1966) MITs Joseph Weizenbaum writes a program called Eliza, that makes the computer act as a psychotherapist.
- (1967) IBM creates the first floppy disk.

History of computers XIV

till 1970

- (1967) The LOGO programming language is developed and is later known as "turtle graphics," a simplified interface useful for teaching children computers.
- (1967) GPS becomes available for commercial use.
- (1968) Intel Corporation is founded by Robert Noyce and Gordon Moore.
- (1968) The movie “2001: A Space Odyssey” is released.
- (1969) AT&T Bell Laboratories develop Unix.
- (1969) Steve Crocker releases RFC #1 on April 7, 1979 introducing the Host-to-Host and talking about the IMP software.

History of computers XV

till 1970

- (1969) Gary Starkweather, while working with Xerox invents the laser printer.
- (1969) CompuServe, the first commercial online service, is established.
- (1969) Advanced Micro Devices (AMD) is founded on May 1, 1969.

History of computers I

till now

- (1970) Intel announces the 1103, a new DRAM memory chip containing more than 1,000 bits of information. This chip is classified as random-access memory (RAM).
- (1971) Intel with the help of Ted Hoff introduces the first microprocessor, the Intel 4004 on November 15, 1971. The 4004 had 2,300 transistors, performed 60,000 operations per second (OPS), addressed 640 bytes of memory, and cost $200.00.
- (1971) Niklaus Wirth invents the Pascal programming language.

History of computers II

till now

- (1972) Atari releases Pong, the first commercial video game on November 29, 1972.
- (1972) Dennis Ritchie at Bell Labs invents the C programming language.
- (1973) Robert Metcalfe creates the Ethernet at the Xerox Palo Alto Research Center (PARC) on May 22, 1973.
- (1974) Intel's improved microprocessor chip is introduced April 1, 1974, the 8080 becomes a standard in the computer industry.

History of computers III

till now

- (1975) MITS ships one of the first PCs, the Altair 8800 with one kilobyte (KB) of memory. The computer is ordered as a mail-order kit for $397.00.
- (1975) Paul Allen and Bill Gates write the first computer language program for personal computers, which is a form of BASIC designed for the Altair. Gates later drops out of Harvard and founds Microsoft with Allen.
- (1976) Steve Wozniak designs the first Apple, the Apple I computer in 1976, later Wozniak and Steve Jobs co-found Apple Computers on April Fools day.

History of computers IV

till now

- (1976) The Intel 8086 is introduced June 8, 1976.
- (1977) Apple Computers Apple II, the first personal computer with color graphics is demonstrated.
- (1977) Commodore announces that the PET (Personal Electronic Transactor) will be a self-contained unit, with a CPU, RAM, ROM, keyboard, monitor and tape recorder all for $495.00
- (1978) Dan Bricklin creates VisiCalc.
- (1978) Epson introduces the TX-80, which becomes the first successful dot matrix printer for personal computers.
- 1978 The 5.25-inch floppy disk becomes an industry standard.

History of computers V

till now

- 1979 Oracle introduces the first commercial version of SQL.
- 1979 The Motorola 6800, an 8-bit processor is released and is later chosen as the processor for the Apple Macintosh.
- 1980 IBM hires Paul Allen and Bill Gates to create an operating system for a new PC. The pair buy the rights to a simple operating system manufactured by Seattle Computer Products and use it as a template. IBM allows the two to keep the marketing rights to the operating system, called DOS.
- 1981 MS-DOS 1.0 was released August, 1981.

History of computers VI

till now

- 1981 IBM joins the computer race by announcing the IBM PC (Personal Computer) on August 12, 1981, which runs the new MS-DOS operating system and has a starting price of $1,565.
- 1981 Adam Osborne introduces the Osborne I, the first successful portable computer, which weighs 25 pounds.
- 1983 The IBM XT is first introduced on March 8, 1983.
- 1983 Compaq introduces the first 100% IBM compatible computer the "Compaq Portable" in March of 1983.
- 1984 IBM's AT computer is introduced.

History of computers VII

till now

- 1984 The 3.5-inch floppy diskette is introduced and later becomes an industry standard.
- 1985 Intel introduces the 80386 in October. (The initial 80386 was a 32-bit chip, incorporated 275,000 transistor, originally sold for $299, and was available in clock speeds between 12 and 40MHz.)

History of computers VIII

till now

- 1985 Paul Brainard of Aldus Corporation introduces Pagemaker for the Macintosh, a program that lets users mix type and graphics on the same page. The combination of this software and the new Apple LaserWriter laser printer helps create the desktop publishing field.
- 1985 Microsoft Windows 1.0 is introduced in November, 1985 and is initially sold for $100.00.
- 1989/1990 Poland connected to the global network

History of computers IX

till now

- 1990 In 1990 Tim Berners-Lee, working with Robert Cailliau at CERN propose a ‘hypertext’ system, which is the first start of the Internet as we know it today.
- 1990 GSM standard is defined.
- 1990 Archie, the first search engine is introduced on September 10, 1990.
- 1990 Gopher is developed at the University of Minnesota. The program is a menu-driven search-and-retrieval tool and helps Internet users location information online.

History of computers X

till now

- 1991 The World Wide Web is launched to the public August 6, 1991. Tim Berners-Lee, a scientist at the European Partial Physics Laboratory (CERN) in Geneva, Switzerland develops the Web as a research tool.
- 1991 Linux is introduced by Linus Torvald in August 25, 1991.
- 1992 Microsoft introduces Windows 3.1. It sells more than 1 million copies within the first two months of its release.
- 1993 Fifty World Wide Web servers are known to exist as of January.

History of computers XI

till now

- 1993 President Bill Clinton puts the United States White House online with a World Wide Web page and E-mail address for the President, Vice President and first lady. (Waldemar Pawlak, when he was prime minister did the same.)
- 1993 The NCSA releases the Mosaic browser April 22, 1993.
- 1994: YAHOO!
- 1994: Windows 3.11.
- 1995 Netscape goes public at $28.00 a share and by the closing ends at $58.00 a share.
- 1995: Java

History of computers XII

till now

- 1995: amazon.com®.
- 1995 USB standard is released.
- 1996 Google is first developed by Sergey Brin and Larry Page. (see also https://en.wikipedia.org/wiki/History_of_Google and https://web.archive.org/web/20120414022121/http://www.google.com/about/company/history/)
- 1997 IBMs Deep Blue computer defeats world champion chess player Garry Kasparov May 11, 1997 in their second six-game showdown, winning the tie-breaking game in only 62 minutes.

History of computers XIII

till now

- 1997 Altavista introduces its free online translator Babel Fish.
- 1997 Microsoft begins working on its own search engine.
- 1998 The DMCA (Digital Millennium Copyright Act) is passed
- 1999 IEEE introduced 802.11b (wireless network)
- 2000 Computers continue to work and the world doesn't come to an end on January 1, 2000 as some feared might happen because of the year 2000 bug.

History of computers XIV

till now

- 2000 U.S. Judge Thomas Penfield announced today after over 2-years in the court that Microsoft be split into two companies although will remain intact until the appeals process is exhausted.
- 2001 Apple introduces the iPod and it goes on sell October 23, 2001.
- 2002 Approximately 1 billion PCs have been shipped worldwide since the mid-'70s, according to a study released by consulting firm Gartner.
- 2004 MySpace official site is launched January 2004.

History of computers XV

till now

- 2004 Mark Zuckerberg launches Thefacebook February 4, 2004, which later becomes Facebook facebook
- 2004 Google announces Gmail on April 1, 2004. Many people take it as an April Fools joke.
- 2005 YouTube is founded and comes online February 15, 2005.
- 2005 Yahoo announces that it will acquire the popular photo service Flickr on March 21, 2005.
- 2005 MySpace is purchased by News Corporation for $580 Million US on July 18, 2005.

History of computers XVI

till now

- 2005 On September 12, 2005 eBay acquired Skype for approximately $2.6billion.
- 2006 Skype announced that it had over 100 million registered users.
- 2006 Google announces plans to purchase YouTube for 1.65 Billion on October 9, 2006.
- 2006 Twttr, now known as Twitter  is officially launched July 15, 2006.
- 2007 Apple introduces the iPhone to the public at the January 9, 2007 Macworld Conference & Expo.

History of computers XVII

till now

- 2007 Amazon releases the first Kindle in the United States November 19, 2007.
- 2007 Google releases Android November 5, 2007.
- 2008 Google releases the first public version of Chrome December 11, 2008.
- 2009 Person under the fake name of Satoshi Nakamoto introduces the Internet currency Bitcoin January 3, 2009.
- 2010 Apple introduces the iPad on January 27, 2010.
- 2010 Amazon releases a press release July 19, 2010 mentioning it is now selling more Kindle books than hardcover books.

History of computers XVIII

till now

- 2011 Microsoft announces plans on May 10, 2011 to acquire Skype for $8.5 billion in cash.
- 2011 On January 6, 2011 Aaron Swartz is arrested by federal authorities in connection with systematic downloading of academic journal articles from JSTOR.
- 2011 The Silk Road comes online in February 2011.
- 2011 On June 29, 2011 Newscorp sells MySpace to Specific Media L.L.C for $35 million, around $473 Million less than it initially paid for it.

History of computers XIX

till now

- 2012 Facebook officially crosses the one billion active users mark on October 4, 2012.
- 2012 The Raspberry Pi single-board computer is released in the United Kingdom.
- 2013 Aaron Swartz passes away January 11, 2013 (Age: 26)
- 2013 The Silk Road 2.0 comes online on November 6, 2013 after the FBI shut down the original site.

History of computers XX

till now

- 2013 Based on information Edward Snowden leaked to The Guardian in May 2013 while employed at NSA contractor Booz Allen Hamilton, the British newspaper published a series of exposés that revealed programs such as the interception of U.S. and European telephone metadata and the PRISM, XKeyscore, and Tempora Internet surveillance programs.
- 2013 IDG announces on July 10, 2013 that the August edition of PC World magazine will be the last print edition of the magazine.
- 2014 The Silk Road 2.0 is shut down on November 6, 2014.

History of computers XXI

till now

- 2014 The Nokia deal with Microsoft is completed April 25, 2014 making Nokia now Microsoft Mobile in a deal totaling $7.17 billion.
- 2015 Microsoft released Windows 10 on July 29, 2015.
- 2016 Grace Hopper (Posthumously), Bill Gates, and Margaret Hamilton receive the Presidential Medal of Freedom on November 22, 2016.

History of computers XXII

till now

- On May 12, 2017, the WannaCry ransomware attack began to attack computers running Microsoft Windows. The worm infected more than 230,000 computers in over 150 different countries and demanded $300–$1,200 in bitcoin to unlock the computers encrypted data.
- On January 3, 2018, information about Meltdown and Spectre attacks were first publicly released. The security flaws affect nearly all of the world's computers and smartphones and could allow someone to get the contents of memory including sensitive information such as passwords.

History of computers XXIII

till now

- On March 17, 2018, The New York Times and the Guardian revealed that the firm Cambridge Analytica harvested 50 million Facebook profiles and used that data to help Donald Trump's election team.
- On January 16, Alphabet, the parent company of Google, joined the "four-comma club," achieving a market valuation over $1 trillion. The other two members of the club at the time were Apple ($1.3 trillion) and Microsoft ($1.2 trillion). The next closest company, Amazon ($930 billion), briefly joined the club in 2018.

History of computers XXIV

till now

- On July 15, 2020, a hacker used social engineering to gain access to a Twitter employees account that gave them access to all accounts where they interacted with 130 accounts. For 45 accounts, the hacker sent a tweet promoting a cryptocurrency scam. Some of the people on Twitter affected include: Apple, Bill Gates, Elon Musk, Jeff Bezos, Joe Biden, President Barack Obama, and Uber.
- On April 3, 2021, over 553 million Facebook users' information was posted online from a 2019 leak.

History of computers XXV

till now

- On April 8, **2021**, LinkedIn announced that a user had scraped their database after it was discovered a hacker was attempting to sell a database containing 500 million LinkedIn users' information.
- In May **2021**, the U.S. Colonial Pipeline company was a victim of ransomware, attacked by the DarkSide hacker group. The attack caused Colonial Pipeline to temporarily shut down their main oil pipeline, which supplies 45% of the fuel for U.S. East Coast states.

History of computers XXVI

till now

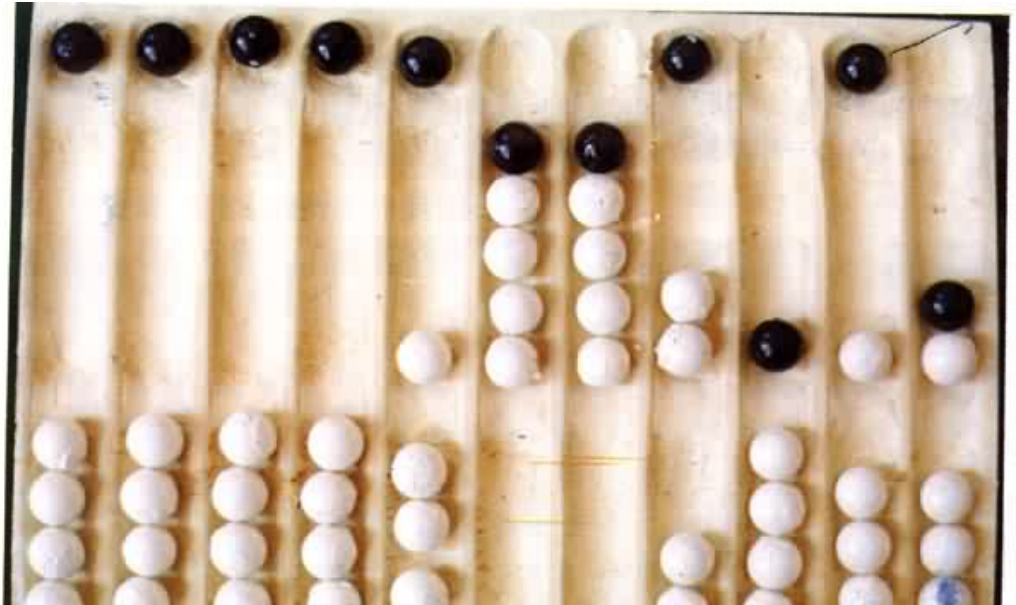
- A hacker announced in August that he had 40 to 50 million T-Mobile customers' information.
- Open AI released ChatGPT on November 30, **2022**.
- Microsoft released ChatGPT-powered Bing on February 7, **2023**.
- On May 30, **2023**, CAIS (Center for AI Safety) released a statement from OpenAI and DeepMind, Turing Award winners, and other AI (artificial intelligence) researchers warning that their life's work on AI could potentially extinguish humanity.

(Based on the: Computer History)

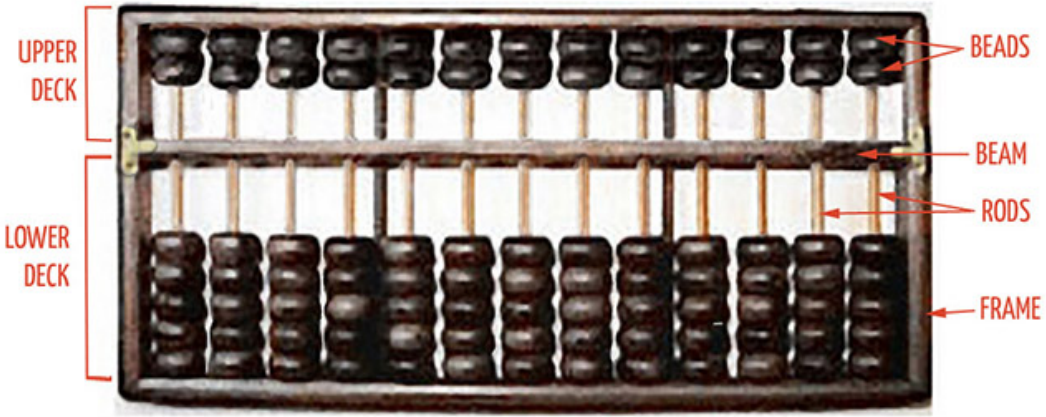
Another ways of computing

1. Analog computers
   - Antikythera mechanism
   - Astrolabe
   - All “calendars” (Moon phases,...).
   - “Planisphere” — It can be adjusted to display the visible stars for any time and date.
   - Slide rule.
   - Electronic analog computers.

Abacus



Abacus



Abacus

Abacus

Back

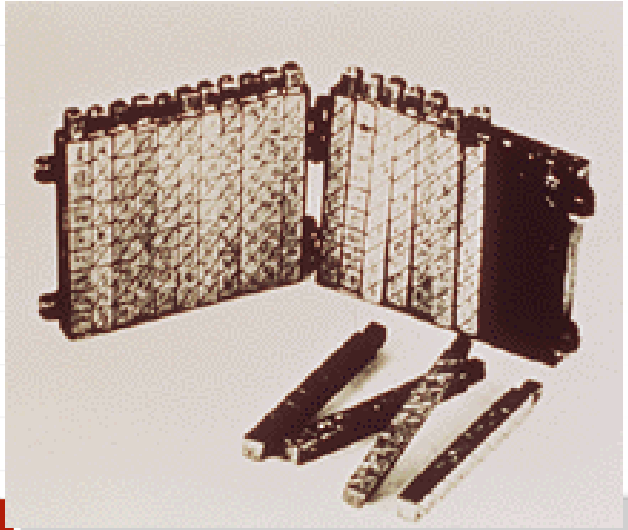
Antikythera mechanism

Antikythera mechanism

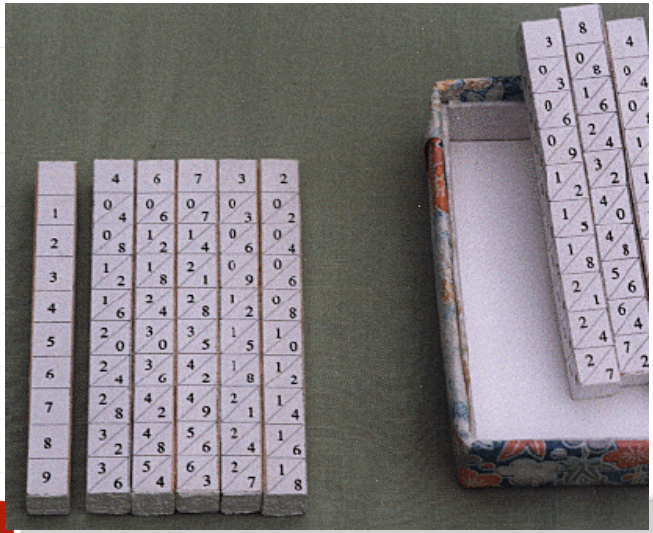
http://www.youtube.com/watch?v=4eUibFQKJqI

Back

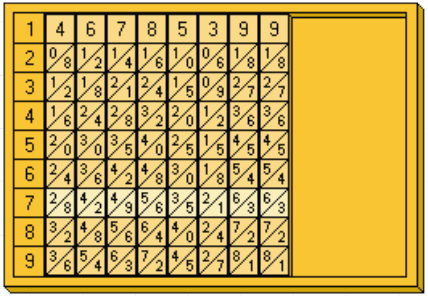
Napier’s bones



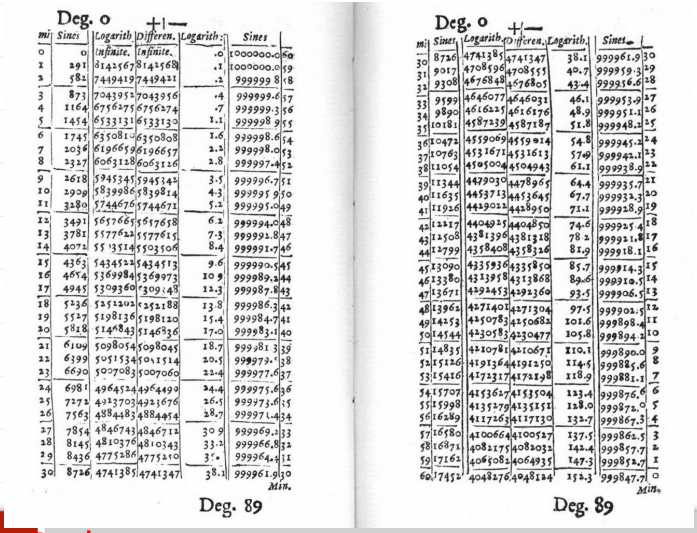
Napier’s bones



Napier’s bones



Napier's bones



Deg. o

mi	Sines	Logarith	Differen.	Logarith.	Sines
0	0	Infinite.	Infinite.	.0	10000000.0	60
1	291	8143567	8143568	.1	10000000.0	59
2	582	7449419	7449421	.2	9999999.8	58
3	873	7043953	7043956	.4	9999999.6	57
4	1164	6756257	6756274	.7	9999999.3	56
5	1454	6533133	6533130	1.1	9999998.9	55
6	1745	6350811	6350808	1.6	9999998.6	54
7	2036	6196659	6196657	2.2	9999998.0	53
8	2327	6063128	6063126	2.8	9999997.4	52
9	2618	5945145	5945143	3.5	9999996.7	51
10	2909	5839986	5839814	4.3	9999995.950
11	3280	5744676	5744671	5.2	9999995.049
12	3491	5657265	5657268	6.2	9999994.048
13	3781	5577722	5577661	7.3	9999992.847
14	4072	55 1351	5523106	8.4	9999991.746
15	4363	5434122	5434113	9.6	9999990.545
16	4654	5369984	5369973	10.9	9999989.244
17	4945	5309360	5309.43	12.3	9999987.843
18	5236	5251202	5251288	13.8	9999986.342
19	5527	5198136	5198120	15.4	9999984.741
20	5818	5146843	5146836	17.0	9999983.140
21	6109	5098054	5098045	18.7	9999981.339
22	6399	5051534	5051514	20.5	9999979.538
23	6690	5007083	5007060	22.4	9999977.637
24	6981	4964524	4964492	24.4	9999975.636
25	7272	4923703	4923676	26.5	9999973.535
26	7563	4884483	4884454	28.7	9999971.434
27	7854	4846743	4846712	30 9	9999969.133
28	8145	4810376	4810343	33.2	9999966.832
29	8436	4775286	4775210	35.	9999964.432
30	8726	4741385	4741347	38.1	9999961.930

Min.

Deg. 89

Deg. o

mi	Sines	Logarith	Differen.	Logarith.	Sines
30	8726	4741385	4741347	38.1	9999961.930
31	9017	4708596	4708555	40.7	9999959.329
32	9308	4676848	4676805	43.4	9999956.628
33	9599	4646077	4646031	46.1	9999953.927
34	9890	4616225	4616176	48.9	9999951.126
35	10181	4587239	4587187	51.8	9999948.225
36	10472	4559069	4559014	54.8	9999945.224
37	10763	4531671	4531613	57.9	9999942.123
38	11054	4505004	4504943	61.1	9999938.922
39	11344	4479036	4478965	64.4	9999935.721
40	11635	4453713	4453645	67.7	9999932.320
41	11926	4429022	4428950	71.1	9999928.919
42	12217	4404925	4404850	74.6	9999925.418
43	12508	4381396	4381318	78.2	9999921.817
44	12799	4358408	4358326	81.9	9999918.116
45	13090	4335936	4335850	85.7	9999914.315
46	13380	4313958	4313868	89.6	9999910.514
47	13671	4292453	4292360	93.5	9999906.513
48	13962	4271401	4271304	97.5	9999902.512
49	14253	4250783	4250682	101.6	9999898.411
50	14544	4230583	4230477	105.8	9999894.210
51	14835	4210781	4210671	110.1	9999890.0 9
52	15126	4191364	4191250	114.5	9999885.6 8
53	15416	4172317	4172198	118.9	9999881.1 7
54	15707	4153627	4153504	123.4	9999876.6 6
55	15998	4135279	4135151	128.0	9999872.0 5
56	16289	4117263	4117130	132.7	9999867.3 4
57	16580	4100664	4100527	137.5	9999862.5 3
58	16871	4082175	4082033	142.4	9999857.7 2
59	17162	4065081	4064935	147.3	9999852.7 1
60	17452	4048276	4048124	152.3	9999847.7 0

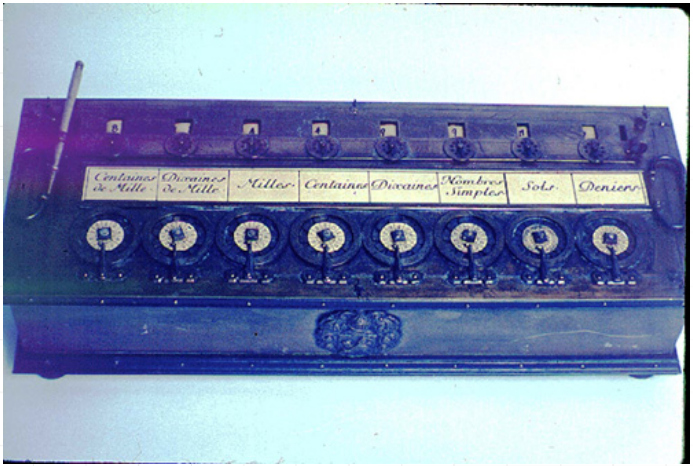
Min.

Deg. 89

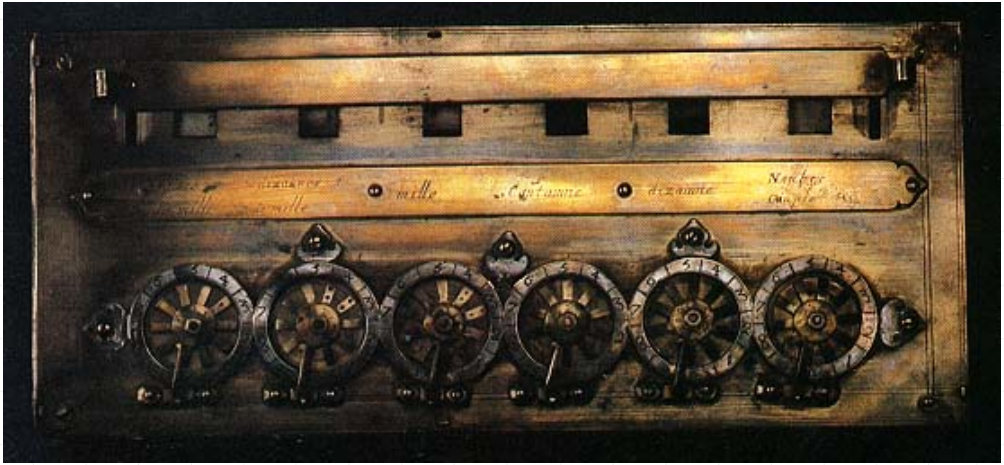
$$f(a \times b) = f(a) + f(b)$$

Back

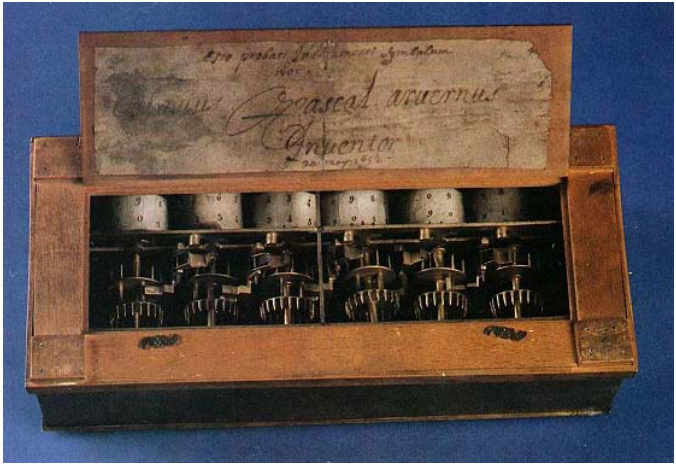
Pascaline


Centaines de Mille
Dixaines de Mille
Milles
Centaines
Dixaines
Nombres Simples
Sols
Deniers

Pascaline



Pascaline

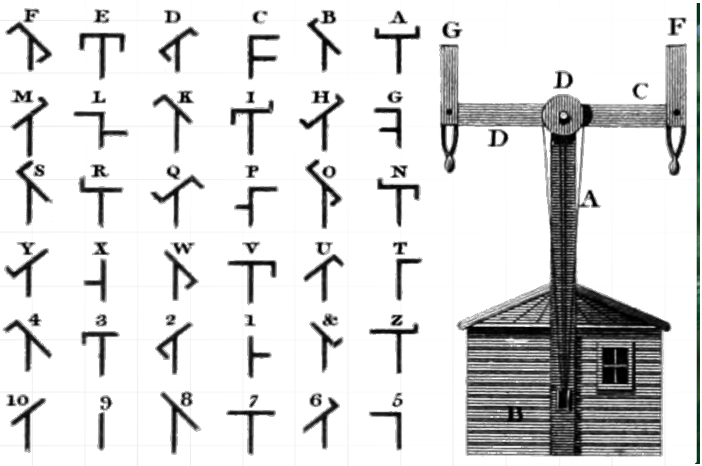


Pascaline

Back

Chappe’s telegraph

Chappe’s telegraph

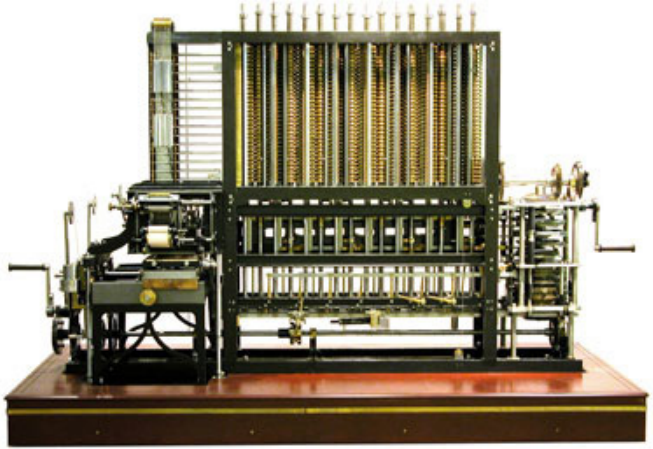


Chappe’s telegraph

Back

Difference Engine

Difference Engine



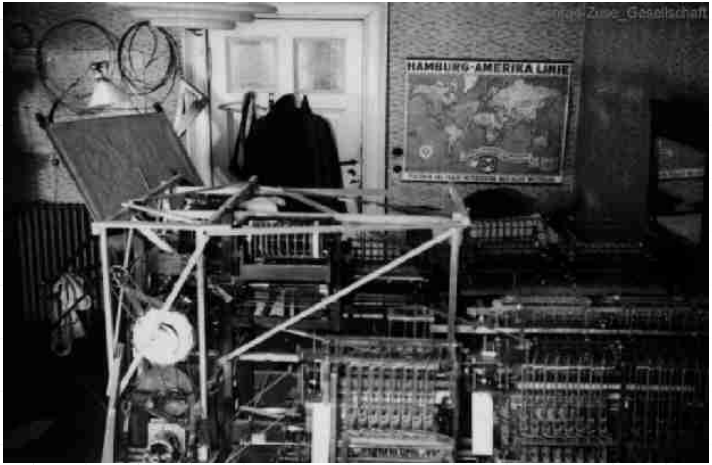
Computer museum:

http://www.computerhistory.org/babbage/

Difference Engine

Back

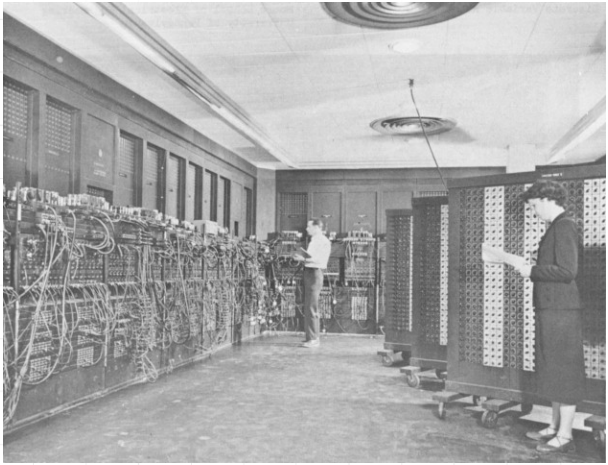
Zuse



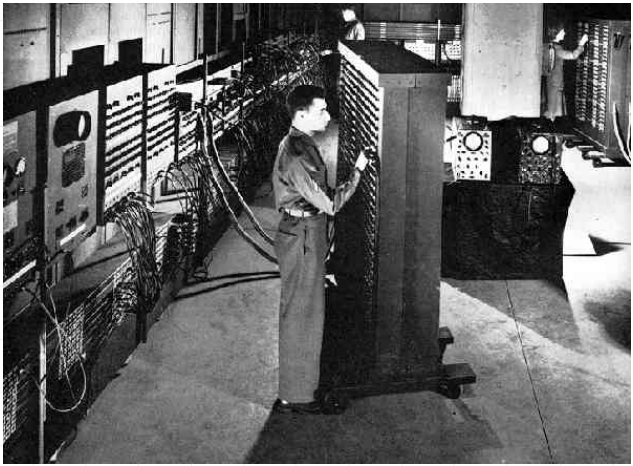
Zuse

Back

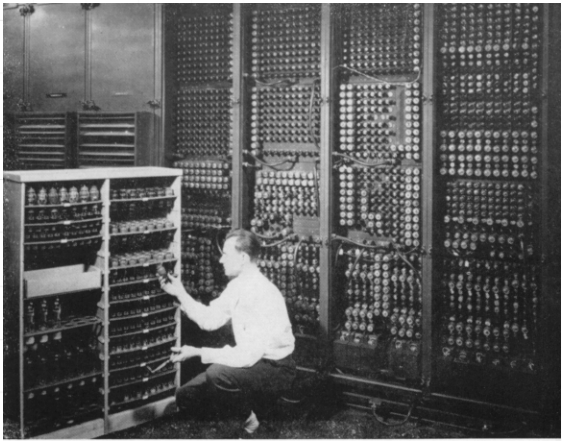
ENIAC



ENIAC

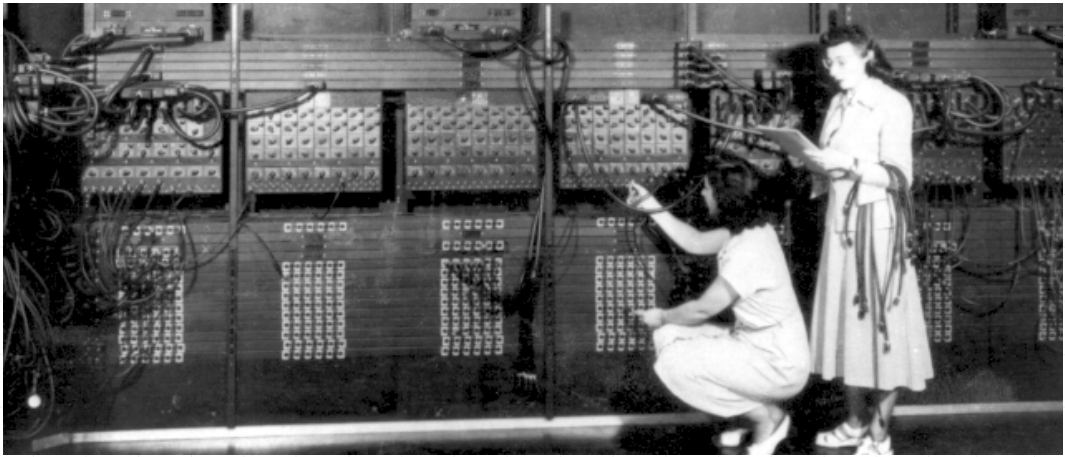


ENIAC



Replacing a bad tube meant checking among ENIAC's 19,000 possibilities.

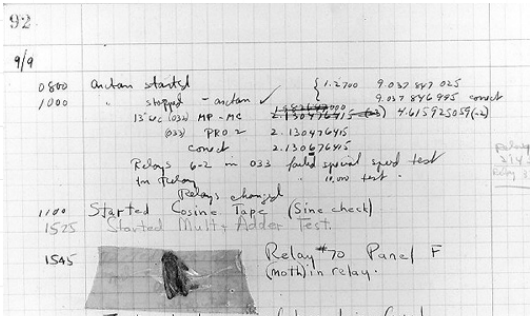
ENIAC



ENIAC

Back

The First Bug


92

9/9

0800 Arctan started

1000 " stopped - arctan ✓

13 wc 033 MP - MC

033 PRO 2

correct

Relays 6-2 in 033 failed special speed test

In Hickory

(Relays changed

1100 Started Cosine Tape (Sine check)

1525 Started Multy Adder Test.

1545

Relay #70 Panel F

(Moth) in relay.

First actual case of bug being found.

1700 closed down.

The First Bug

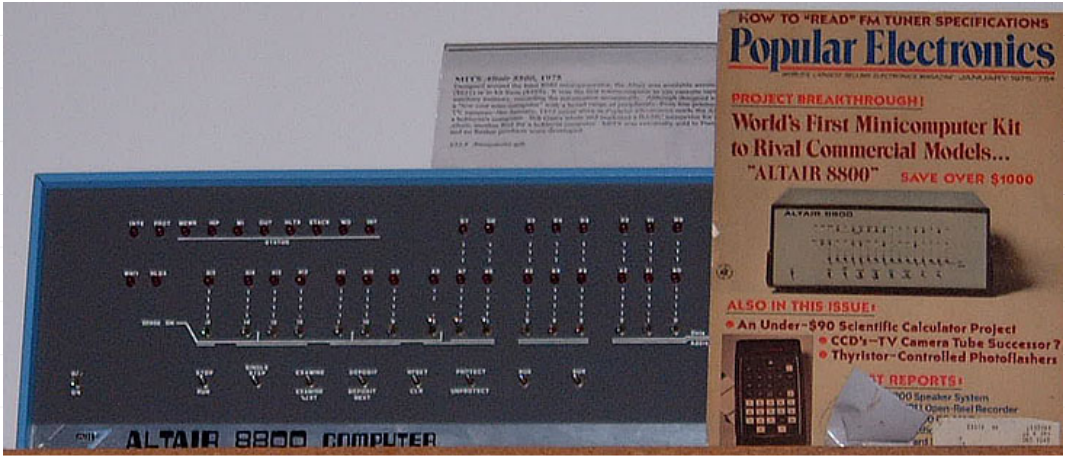
Back

Mark I

Mark I

Back

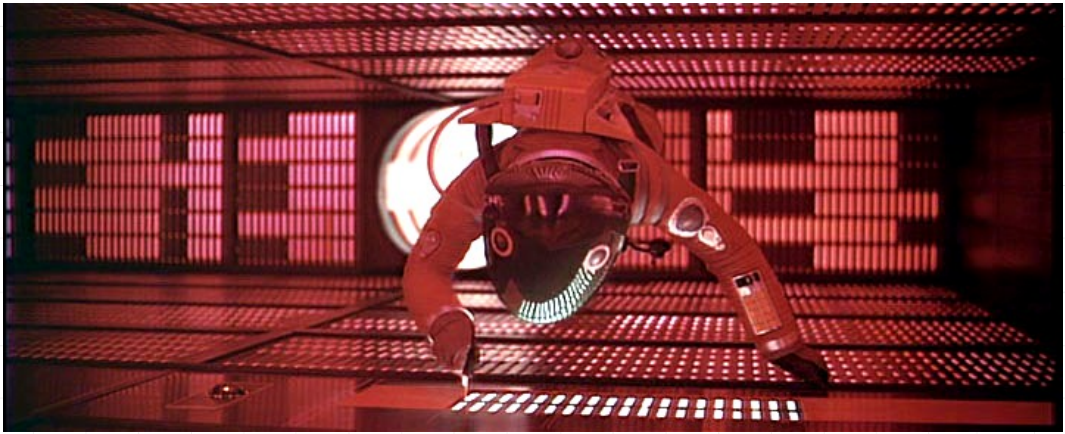
Altair


ALTAIR 8800 COMPUTER
HOW TO "READ" FM TUNER SPECIFICATIONS
Popular Electronics
PROJECT BREAKTHROUGH!
World's First Minicomputer Kit to Rival Commercial Models...
"ALTAIR 8800"
SAVE OVER $1000
ALTAIR 8800
ALSO IN THIS ISSUE:
An Under-$90 Scientific Calculator Project
CCD's—TV Camera Tube Successor?
Thyristor-Controlled Photoflashers

Altair

Back

HAL



HAL


An epic drama of adventure and exploration
2001: a space odyssey
MGM presents a STANLEY KUBRICK PRODUCTION
CINERAMA
Super Panavision and Metrocolor

HAL

Back

Moore’s law

Moore’s law is the observation that over the history of computing hardware, the number of transistors on integrated circuits doubles approximately every two years (Wiki)

Moore’s law

Moore’s law is the observation that over the history of computing hardware, the number of transistors on integrated circuits doubles approximately every two years (Wiki)

Back

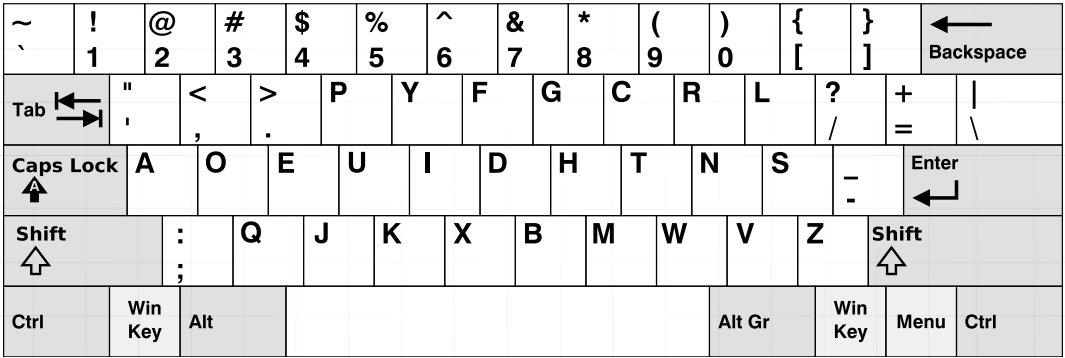
Von Neumann architecture

Von Neumann architecture describes a design architecture for an electronic digital computer with subdivisions of a processing unit consisting of an arithmetic logic unit and processor registers, a control unit containing an instruction register and program counter, a memory to store both data and instructions, external mass storage, and input and output mechanisms. (Wiki)

Von Neumann architecture

Von Neumann architecture describes a design architecture for an electronic digital computer with subdivisions of a processing unit consisting of an arithmetic logic unit and processor registers, a control unit containing an instruction register and program counter, a memory to store both data and instructions, external mass storage, and input and output mechanisms. (Wiki) Back

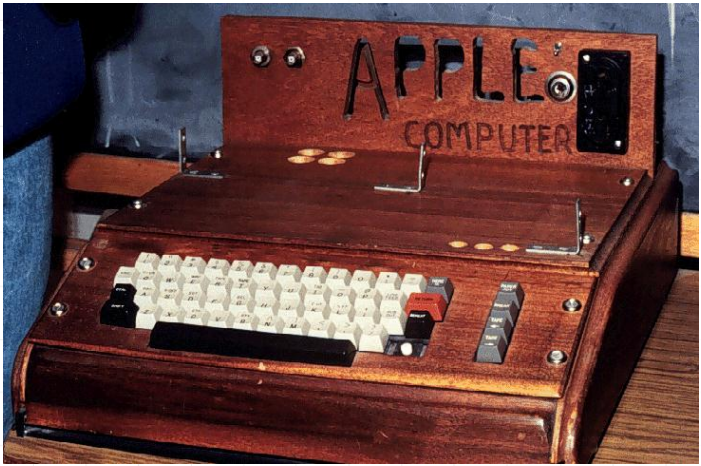
Dvorak Simplified Keyboard



Dvorak Simplified Keyboard

Back

Apple I



Apple I

Back

PET

PET

Back

IBM PC

IBM PC

Back

Osborne I

Osborne I

Osborne I

Back

Turing test

The Turing test is a test of a machine's ability to exhibit intelligent behaviour. (Wiki)

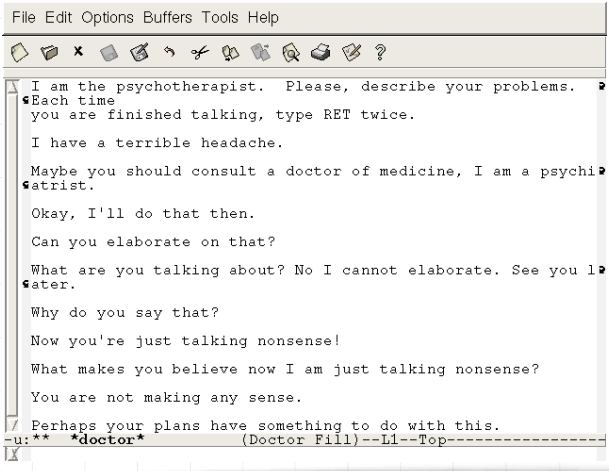
Turing test

Back

Eliza

http://www-ai.ijs.si/eliza-cgi-bin/eliza_script

Eliza


File Edit Options Buffers Tools Help
I am the psychotherapist. Please, describe your problems.
Each time
you are finished talking, type RET twice.
I have a terrible headache.
Maybe you should consult a doctor of medicine, I am a psychi
atrist.
Okay, I'll do that then.
Can you elaborate on that?
What are you talking about? No I cannot elaborate. See you l
ater.
Why do you say that?
Now you're just talking nonsense!
What makes you believe now I am just talking nonsense?
You are not making any sense.
Perhaps your plans have something to do with this.
-u:** *doctor* (Doctor Fill)--L1--Top----------

Eliza

Back

The first computer mouse

The first computer mouse

The first computer mouse

Back

Colophon

This presentation was typeset in the LaTeX 2_ε system using beamer class. MS Trebuchet font was used. Title page illustration depicts part of a classical abacus.
Bonamici, Andrew. 2007. abacus top. Grudzień 15. Flickr. http://www.flickr.com/photos/abonamici/2114856951/.