BCA SEMESTER - II

0302203
HISTORY OF COMPUTING

UNIT – 5
HISTORY OF ARTIFICIAL INTELLIGENCE

- Dr. Disha Shah

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Charles Babbage

- Charles Babbage, (born December 26, 1791, London, England—died October 18, 1871, London), English mathematician and inventor who is credited with having conceived the first automatic digital computer.
- In 1812 Babbage helped found the Analytical Society, whose object was to introduce developments from the European continent into English mathematics.
- In 1816 he was elected a fellow of the Royal Society of London. He was instrumental in founding the Royal Astronomical (1820) and Statistical (1834) societies.

Charles Babbage

- The idea of mechanically calculating mathematical tables first came to Babbage in 1812 or 1813.
- Later he made a small calculator that could perform certain mathematical computations to eight decimals.
- Then in 1823 he obtained government support for the design of a projected machine, the Difference Engine, with a 20-decimal capacity.
- The Difference Engine was a digital device: it operated on discrete digits rather than smooth quantities, and the digits were decimal (0–9), represented by positions on toothed wheels rather than binary digits (“bits”).

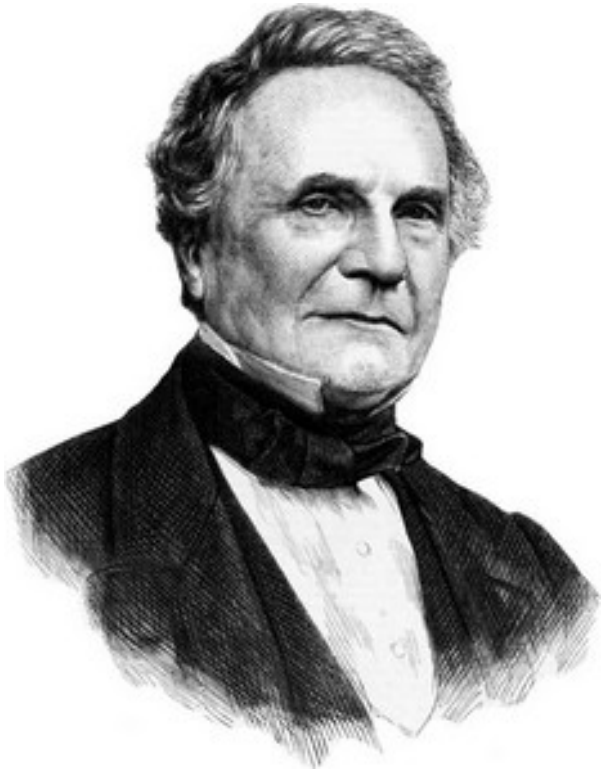
Charles Babbage

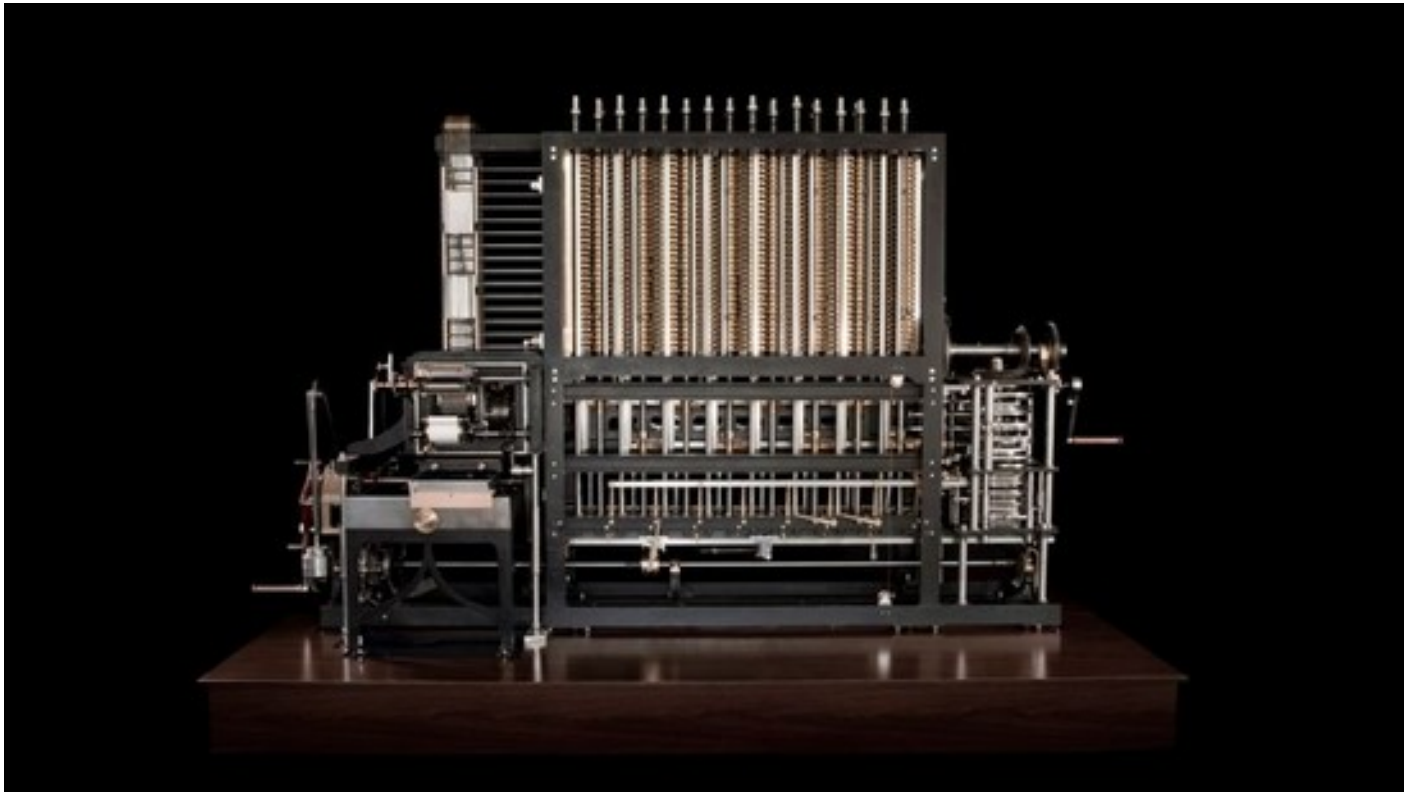
- When one of the toothed wheels turned from nine to zero, it caused the next wheel to advance one position, carrying the digit.
- Like modern computers, the Difference Engine had storage—that is, a place where data could be held temporarily for later processing.
- Its construction required the development of mechanical engineering techniques, to which Babbage of necessity devoted himself.

Charles Babbage

- In 1843 Babbage's friend mathematician Ada Lovelace translated a French paper about the Analytical Engine and, in her own annotations, published how it could perform a sequence of calculations, the first computer program.
- The Analytical Engine, however, was never completed. Babbage's design was forgotten until his unpublished notebooks were discovered in 1937.
- In 1991, British scientists built Difference Engine No. 2—accurate to 31 digits—to Babbage's specifications, and in 2000 the printer for the Difference Engine was also built.

Charles Babbage





Linux Torvalds

- Linus Torvalds created the Linux kernel and oversees open source development of the widely-used Linux operating system.
- Torvalds was born on 28 December 1969 in Helsinki, Finland.
- He enrolled at the University of Helsinki in 1988, graduating with a master's degree in computer science.
- His M.Sc. thesis was titled Linux: A Portable Operating System.
- An avid computer programmer, Linus authored many gaming applications in his early years.
- After purchasing a personal computer with an Intel 386 CPU, he began using Minix, an Unix-inspired operating system created by Andrew Tanenbaum for use as a teaching tool.

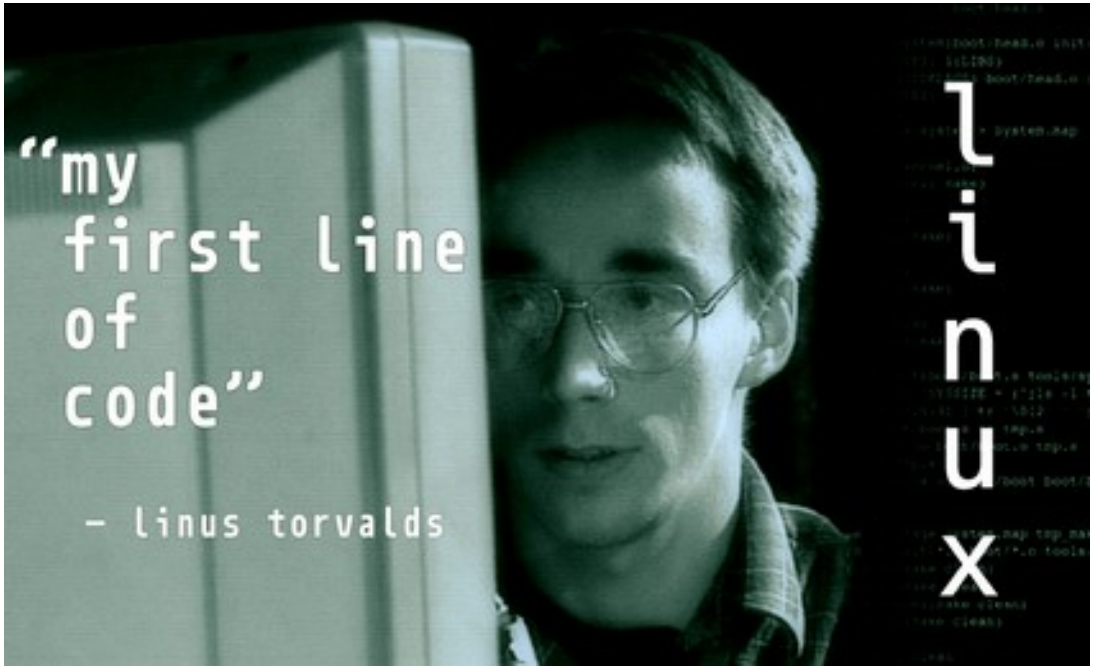
Linux Torvalds

- Torvalds started work on a new kernel, later to be named “Linux,” in the fall of 1991 and after forming a team of volunteers to work on this new kernel, released V1.0 in the spring of 1994.
- In 1996, Torvalds accepted an invitation to visit the California headquarters of Transmeta, a start-up company in the first stages of designing an energy saving central processing unit (CPU).
- Torvalds then accepted a position at Transmeta and moved to California with his family.
- Along with his work for Transmeta, Torvalds continued to oversee kernel development for Linux.

Linux Torvalds

- In 2003, Torvalds left Transmeta to focus exclusively on the Linux kernel, backed by the Open Source Development Labs (OSDL), a consortium formed by high-tech companies, which included IBM, Hewlett-Packard, Intel, AMD, RedHat, Novell and many others.
- The purpose of the consortium was to promote Linux development.
- OSDL merged with The Free Standards Group in January 2007 to become The Linux Foundation.
- Torvalds remains the ultimate authority on what new code is incorporated into the standard Linux kernel.

Linux Torvalds



Steve Jobs

- Steve Jobs, in full Steven Paul Jobs, (born February 24, 1955, San Francisco, California, U.S.—died October 5, 2011, Palo Alto, California), cofounder of Apple Computer, Inc. (now Apple Inc.), and a charismatic pioneer of the personal computer era.
- Back in Silicon Valley in the autumn of 1974, Jobs reconnected with Stephen Wozniak, a former high school friend who was working for the Hewlett-Packard Company.
- When Wozniak told Jobs of his progress in designing his own computer logic board, Jobs suggested that they go into business together, which they did after Hewlett-Packard formally turned down Wozniak's design in 1976.
- The Apple I, as they called the logic board, was built in the Jobses' family garage with money they obtained by selling Jobs's Volkswagen minibus and Wozniak's programmable calculator.

Steve Jobs

- Jobs was one of the first entrepreneurs to understand that the personal computer would appeal to a broad audience, at least if it did not appear to belong in a junior high school science fair.
- With Jobs's encouragement, Wozniak designed an improved model, the Apple II, complete with a keyboard, and they arranged to have a sleek, molded plastic case manufactured to enclose the unit.
- In 1981 the company had a record-setting public stock offering, and in 1983 it made the quickest entrance (to that time) into the Fortune 500 list of America's top companies.
- in 1985 Sculley convinced Apple's board of directors to remove the company's famous cofounder.

Steve Jobs

- In late 1996 Apple, saddled by huge financial losses and on the verge of collapse, hired a new chief executive, semiconductor executive Gilbert Amelio.
- When Amelio learned that the company, following intense and prolonged research efforts, had failed to develop an acceptable replacement for the Macintosh's aging operating system (OS), he chose NEXTSTEP, buying Jobs's company for more than $400 million—and bringing Jobs back to Apple as a consultant.
- In 1998, Jobs introduced the iMac, an egg-shaped, one-piece computer that offered high-speed processing at a relatively modest price and initiated a trend of high-fashion computers.

Steve Jobs

- In 2001 Jobs started reinventing Apple for the 21st century. That was the year that Apple introduced iTunes, a computer program for playing music and for converting music to the compact MP3 digital format commonly used in computers and other digital devices.
- Later the same year, Apple began selling the iPod, a portable MP3 player, which quickly became the market leader.
- In 2003 Apple began selling downloadable copies of major record company songs in MP3 format over the Internet.
- By 2006 more than one billion songs and videos had been sold through Apple's online iTunes Store.
- In recognition of the growing shift in the company's business, Jobs officially changed the name of the company to Apple Inc. on January 9, 2007.

Steve Jobs

Steve Jobs (right) and Steve Wozniak holding an Apple I circuit board, c. 1976

Steve Jobs introducing Apple's Macintosh (Mac), January 24, 1984.

- https://allaboutstevejobs.com/

Dennis Ritchie

- Dennis M. Ritchie, (born September 9, 1941, Bronxville, Eastchester, New York, U.S.—found dead October 2011, Berkeley Heights, New Jersey), American computer scientist and cowinner of the 1983 A.M. Turing Award, the highest honour in computer science.
- Ritchie and the American computer scientist Kenneth L. Thompson were cited jointly for “their development of generic soperating systems theory and specifically for the implementation of the UNIX operating system,” which they developed together at Bell Laboratories.

Dennis Ritchie

- In 1967 he joined Bell Labs, where he first worked on the Multics operating system (OS).
- Multics was a time-sharing system funded by the Advanced Research Projects Agency and jointly developed by researchers at the Massachusetts Institute of Technology, Bell Labs, and General Electric Co.
- However, AT&T Corporation (then the parent company of Bell Labs) withdrew from the project and removed its GE computers in 1969.

Dennis Ritchie

- In conjunction with the development of UNIX, Ritchie contributed somewhat to Thompson's creation of the B programming language in 1970.
- As they moved their operating system to a newer PDP-11 minicomputer in 1971, the shortcomings of B became apparent, and Ritchie extended the language over the next year to create the C programming language.
- C and its family of languages, including C++ and Java, remain among the most widely used computer programming languages.
- In 1973 Ritchie and Thompson rewrote UNIX in C.

Dennis Ritchie