March 1st

Donald Lewis Shell

Born: March 1, 1924;

Croswell, Michigan
Died: Nov. 2, 2015

Shell's Shell sort algorithm was published in the July 1959 issue of the CACM [Sept 15]. It starts by sorting pairs of elements far apart, progressively reducing the gap between the values compared.

Shell later headed General Electric's (GE) Information Services Department [Sept 30], the first commercial enterprise to link computers using a client-server architecture.

In the early 1960's, he worked with John Kemeny [May 31] and Tom Kurtz [Feb 22] on commercializing their Dartmouth Time-Sharing System [May 1], which ran on a GE DATANET-30 (aka the DN-30). In 1965, GE started packaging the DN-30 and GE-235 [May 00] together as the GE-265, which went on to become the first commercially successful time-sharing system

In 1972 Shell and Ralph Mosher (who designed the Handyman [Sept 11], and also worked at GE) started Robotics Inc., which made robotic manipulators for automotive assembly lines.

"Super Computing" Coined

March 1, 1929

The *New York World* newspaper reported on IBM's donation of over three truckloads of tabulating equipment to Columbia University under the headline "Super Computing Machines Shown". The equipment formed the basis of the university's new Statistical Bureau. The article breathlessly begins:

"New statistical machines with the mental power of 100 skilled mathematicians in solving even highly complex algebraic problems were demonstrated yesterday for the first time before a group of psychologists, educational research workers and statisticians"

Despite the awesome "mental power, a few months later, the head of the bureau, Ben Wood, approached Thomas J. Watson [Feb 17] with a request for a machine better suited for the needs of statistics. Watson assigned James Bryce [Sept 5] and George Daly to the task, and the result was a more flexible punched-card machine.

By changing its plug wires, it was possible to calculate sums of squares, raise numbers to powers, and other novel operations. The device was variously called the "Columbia Machine", the "Statistical Calculator", the "Difference Tabulator", and (because of its massive size) the Packard. It was installed at the bureau in Dec. 1929.

Wallace Eckert [June 19] entered the picture a few years later, trying to use the Packard to solve differential equations of planetary motion, but it was proving too slow. This led him to design a "calculation control switch" to automate certain lengthy computations. In retrospect, this was a significant step towards general-purpose programmable computing.

James Robert Slagle

Born: March 1, 1934;

Brooklyn, New York

Slagle's SAINT (Symbolic Automatic INTegrator), developed in 1961, is considered to be the first expert system [Jan 20], specializing in performing indefinite integration. It was tested on a set of 86 problems, 54 of which were drawn from the MIT final examinations in freshman calculus, and it solved 84 of them.

Slagle has also worked on parallel expert systems, neural networks, time-based logic, and methods for uncovering causal knowledge in large databases. His 1971 textbook, "Artificial Intelligence: The Heuristic Programming Approach", was very popular throughout that decade.

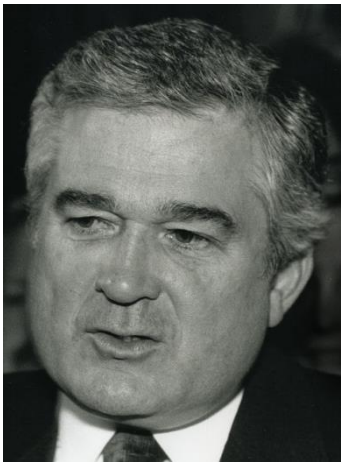
His achievements become even more impressive considering that Slagle is also blind.

Louis (Lou) Vincent Gerstner, Jr. KBE

Born: March 1, 1942;

Mineola, New York

The year before Gerstner was hired as IBM's [Feb 14] CEO in 1993, the company lost $8 billion, and Gerstner was later credited with saving IBM from going out of business – one of the most remarkable business turnarounds in history.



Lou Gerstner (1995). Photo by Kenneth C. Zirkel. CC BY-SA 3.0.

Gerstner hadn't been the board's first choice for CEO. They'd already asked Apple's John Sculley [April 6], Motorola chairman George Fisher, and Scott McNealy [Nov 13] of Sun.

In his memoir, "Who Says Elephants Can't Dance?" (1990), Gerstner remembers that one of his first battles was persuading IBM engineers that OS/2 [Dec 4], despite its technical superiority to MS Windows 3.0 [May 22],

was a “resounding defeat”. IBM ceased development of OS/2, moved away from its roots as a hardware manufacturer into services, and withdrew from the retail desktop PC market. Three years after Gerstner’s retirement in 2002, the company sold its PC division to Lenovo [Dec 8].

In 2001 Gerstner became an honorary Knight Commander of the Order of the British Empire, which entitles him to append “KBE” to his name, but not to use the title “Sir” since he's not a citizen of a Commonwealth realm. Bill Gates [March 2] also belongs to these hallowed ranks.

Myron W. Krueger

Born: March 1, 1942;

Gary, Indiana

Krueger is a pioneer in virtual reality (VR) and augmented reality (AR).

In 1969, he collaborated with Dan Sandin [Nov 14], Jerry Erdman, and Richard Venezky on a computer-controlled environment called “glowflow” – a light and sound installation that responded to people via sensors in the floor. This was followed in 1971 by the “Psychic space” which used a sensory floor to track movement.

In the mid-1970's, Krueger established the Videoplace at the University of Wisconsin-Madison to explore full-body camera-based interactions. This led to a variety of telepresence applications, drawing programs, and animated artificial creatures. One of the interaction types was a two-handed gesture much like the modern-day pinch-and-zoom. Some historians cite this as the origin of the gesture.

The very first VR devices were probably Morton Heilig’s [Dec 22] Telesphere mask (1958) and Sensorama (1961).

PL/I

March 1, 1964

The IBM System/360 [April 7] was designed to be an architecture that could be adapted to many kinds of users. IBM also wanted a programming language with similar properties.

In Oct. 1963, a committee was formed consisting of three IBMers (led by George Radin) and three members of SHARE [Aug 22], the IBM scientific users group. Their first language proposals were presented at a SHARE meeting in San Francisco on this day.

PL/I (Programming Language One) contained sophisticated string handling, pointers, three types of storage allocation, exception handling, and rudimentary multitasking.

It was praised for its breadth and innovations, while also being criticized for its complexity. One SHARE member compared it to a 100-blade Swiss knife; another wondered why the kitchen sink had been omitted. Edsger Dijkstra [May 11] wrote in 1972: “Using PL/I must be like flying a plane with 7000 buttons, switches, and handles to manipulate in the cockpit."

The first compiler was delivered in 1966, and a standard was approved in 1976, but the language never became popular except in the USSR and Eastern block countries where IBM promoted a free PL/I compiler.

Xerox Alto introduced

March 1, 1973

The Alto was a groundbreaking graphical minicomputer featuring a bitmapped screen (606 x 808 pixels), a GUI using windows, menus, icons, and a three-button mouse [?? 1929]. It could work with other Altos over a local area network linked by Ethernet [May 22], and print documents on a Xerox laser printer [Jan 22]. Its innovative software included the WYSISYG Bravo word processor [Oct 00], a paint program, and an email client. Early software was written in BCPL [July 21] and Mesa; the Smalltalk programming environment [May 17] came later.

The Xerox Alto. Photo by Joho345.

The Alto helped popularize the use of raster graphics, and introduced the concept of the bit block transfer operation (the BitBLT). However, it wasn’t the first graphical minicomputer; the Imlac PDS-1 preceded it by a few years [March 00].

The Alto was first outlined on Dec. 19, 1972 in a memo written by Butler Lampson [Dec 23], inspired by the oN-Line System (NLS [Dec 9]) by Douglas Engelbart and Dustin Lindberg. The Alto’s hardware was mostly designed by Charles P. Thacker [Feb 26], with Lampson working on its system software.

The Alto's processor consisted of two small boards (approximately 7″x10″) including a Texas Instrument 74181 ALU chip, 128 KB of memory, linked to a hard disk made up of removable 2.5 MB cartridges. The CPU used microcode for most of its I/O rather than hardware, with its 16 micro-instructions modelled

on those used by Data General's Nova [April 15].

Some stories about the Alto portray it as a 'secret' project unearthed and exploited by Steve Jobs after his visit to PARC [Dec 00] in 1979. In fact, a steady stream of publications about the machine had appeared during the 1970's, including an article by Alan Kay [May 7] in the Sept. 1977 issue of *Scientific American*.

The Alto was intended to be a research machine, not a commercial product, but by the late 1970's, about 1,000 were in use in various labs at Xerox, and another 500 in universities. Jimmy Carter had one at the White House.

The Alto was succeeded by the more powerful Xerox Dorado [May 6], and in 1981 Xerox finally commercialized some of the machine's innovations in an expensive $16,595 system called the 8010 Star [April 27] .

Spasim Released
March 1, 1974

Spasim (short for "space simulation") was coded by Jim Bowery as a 32-player 3D networked game. The players flew through space in wire-frame ships trying to bomb each other.

The game ran on PLATO [July 00], and was heavily influenced by another PLATO multiplayer game called Empire [May 00] from 1973 which employed 2D graphics.

Jim Bowery has long claimed that Spasim was the very first 3D multiplayer game, and has offered a reward of $500 to anyone who can prove otherwise. The only likely competitor is MIT's "Maze War", dating from around [April 11], 1974

PLATO became a rich breeding ground for 3D multiplayer games, producing "Air Race" (1974) by Silas Warner, Airfight (1974) by Brand Fortner, and Panther (1975) by John Edo Haefeli which involved tanks. Panther is said to have inspired Atari's single-player Battlezone [Nov 00] from 1980.

The Catherine Wheel Televised
March 1, 1983

Twyla Tharp's 90-minute video dance piece, "The Catherine Wheel", with music by David Byrne, featured the character St. Catherine. The dancer wasn't human, but one of the first examples of moving 3D computer generated figures.

Rebecca Allen created the animation at the New York Institute of Technology's (NYIT) Computer Graphics Lab [Aug 3] using a half-silvered mirror to superimpose videotape images of real dancers onto a display; in effect, she had created a form of computer-aided rotoscoping.

Allen also helped make one of the first music videos to use 3D graphics – Kraftwerk's "Musique Non-Stop" (1986). It required the development of new facial animation software when the video was created in 1983, but delays in finishing the album meant it was only seen three years later.

Apple LaserWriter Released
March 1, 1985

The LaserWriter was the first commercial laser printer with a built-in PostScript [Dec 3] interpreter.

It's main competitor was the HP LaserJet [May 5], which was considerably cheaper but only supported the Printer Command Language (PCL) which lacked the power and flexibility of PostScript. For example, HP limited its first LaserJet to six square inches of graphics per page.

The LaserWriter also included AppleTalk [Jan 23], which allowed the printer to be shared among as many as sixteen Macs, meaning that its per-user price was far less than the LaserJet.

Negotiations between Apple and Adobe over the use of PostScript had begun back in 1983, and an agreement was only reached one month before the Mac was announced [Jan 24].

When Paul Brainerd heard about Apple's laser printer efforts, he saw the potential for creating software to produce PostScript.

The Apple LaserWriter. Photo by Apple. CC0.

Brainerd formed Aldus and began development of what would become PageMaker [July 15].

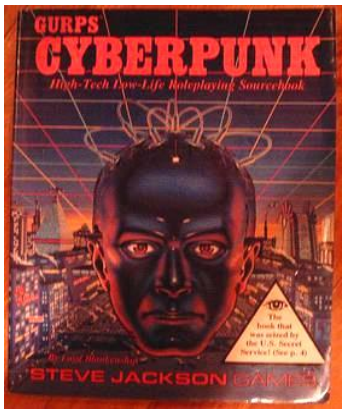
The LaserWriter was announced at Apple's annual shareholder meeting on Jan. 23, on the same day that Aldus debuted PageMaker The combination of the Mac, WYSIWYG [Sept 17] publishing software, and a powerful printer were the key components of the desktop publishing revolution.

Steve Jackson Games Raided
March 1, 1990

In an early-morning raid, the US Secret Service raided the Chicago offices of "Steve Jackson Games", a maker of roleplaying games. An employee, known online as "Loyd Blankenship" [Jan 8], was alleged to have ties to a hacker group.

The agents seized the server hosting the company's bulletin board, miscellaneous computer equipment, and hundreds of floppy disks. The intrepid investigators also found the rulebook for a new game called

"GURPS Cyberpunk," and mistook it for a computer hacking tutorial, which they later termed "a handbook for computer crime." It had been written by Loyd Blankenship.



GURPS Cyberpunk. (c) Steve Jackson Games.

Even after Steve Jackson pointed out that the book contained rules for having your consciousness transferred to a gender-swapped clone, the Secret Service operatives remained adamant: "This is real."

The case came to trial in 1993 with "Steve Jackson Games" being cleared of two of the three counts, and the third being overturned in Oct. 1994. The judge reprimanded the Secret Service, calling their warrant preparation "sloppy", and suggested that they needed "better education" regarding relevant statutes. He also ruled that the agency violated the 1986 "Electronic Communications Privacy Act" when it seized messages from BBS users who were unconnected to the case.

The raid was a major catalyst for the foundation of the Electronic Frontier Foundation (EFF [July 6]), and was also the inspiration for a card game called Hacker.

The similarly well-planned and successful "Operation Sundevil" occurred two months later [May 7].

Fast Piranhas Texting

March 1, 2012

The "Guinness World Records" company has a standardized 160-word text message that it uses for its SMS texting record:

"The razor-toothed piranhas of the genera Serrasalmus and Pygocentrus are the most ferocious freshwater fish in the world. In reality they seldom attack a human."

On this day, Yousef Ahmed Abdul Saboor set a new record for typing this message – 29.43 seconds – on a non-touchscreen mobile phone, at an event held at the Marina Mall in Kuwait.

At the start of the 2000's, the record was broken repeatedly but Saboor's time may not be so easily surpassed since the evolution of mobile technology, notably auto-completion and touchscreens, has made this skill set somewhat obsolete.

However, there are always other mountains to climb: Guinness has separate records for the touchscreen phone (17 secs), QWERTY smartphones, texting while blindfolded, and texting while breakdancing.