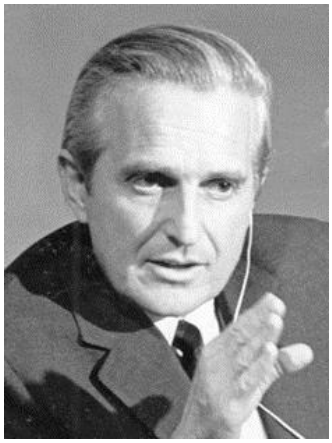
Jan. 30th

Douglas Carl Engelbart

Born: Jan. 30, 1925;

Portland, Oregon
Died: July 2, 2013

Engelbart was an esteemed pioneer of human-computer interaction, much of it carried out at his Augmentation Research Center (ARC) lab at the Stanford Research Institute (SRI).



Douglas Engelbart (1968). Photo by SRI International. CC BY-SA 3.0.

It began in 1963, when Engelbart and Bill English [Jan 27] started looking at ways to use the new interactive display workstations. They tried a great variety of input devices – light pens, track balls, joysticks, the "Graficon" (a pointing device), the mouse [Nov 14], foot-pedals, knee-controls, and even a head-operated device based around nose pointing.

They also received inspiration from the success of Ivan Sutherland's [May 16] Sketchpad [Jan 7] released the same year, which was the first program to utilize a GUI.

One result was Engelbart's oN-Line System (NLS), which allowed up to 16 workstations to operate together, running multiple programs that could copy and share text. NLS introduced interface elements such as bitmapped screens, the mouse, hypertext [April 18], and collaborative tools – precursors to today's GUIs. Engelbart's work was famously presented during "The Mother of All Demos" on [Dec 9] 1968.

As the Vietnam War wound down, funds for Engelbart's lab dropped away, and several of his team moved to nearby Xerox PARC [July 1]. The departures were also in part due to differing views of the future of computing. Engelbart saw matters in terms of collaborative, networked, and timesharing (client-server) devices, while the younger generation predicted the ascendance of personal computers.

Alan Kay [May 17] called Engelbart "a prophet of Biblical dimensions."

SWAC Mersenne Primes

Jan. 30, 1952; 10pm

Two new Mersenne primes [Jan 3] (M521 and M607) were discovered by Derrick Lehmer [Feb 23] using the Standards Western Automatic Computer (SWAC [Aug 17]), the first new values identified in nearly 40 years. The program was written by Raphael Robinson, using the Lucas-Lehmer prime testing algorithm.

The first number, M521 (2^{521} -1) has 157 digits and the second, M607 (2^{607}-1) 183 digits which took an extra two hours to find. Three more — M1279, M2203, and M2281 — were discovered by the same program over the following several months.

Since the mid-1990's, the quest has been dominated by the "Great lnternet Mersenne Prime Search" (GIMPS) [Jan 3], set up by George Woltman.

Although SWAC found the first new Mersenne primes, it wasn't the first machine to find a new prime; that honor belongs to the University of Cambridge's EDSAC, and occurred on [June 7] 1951. Its software used Edouard Lucas' Mersenne prime 2^{127}-1 (M127) as a seed to find new, albeit related, primes.

Alan Turing [June 23] had also tried searching for Mersenne primes with the Manchester Mark 1 [June 16] in 1949, but with no success.

Rubik Patent Filed

Jan. 30, 1975

Hungarian interior design teacher Erno Rubik filed a patent for a toy that went on to become a mainstay of the early 1980's. A Rubik's cube even reached the cover of *Scientific American* in March 1981, referring to an article by Douglas Hofstadter [Feb 15]. The Arts world also embraced it when the Museum of Modern Art in NYC put one on display, and a six-foot cube graced the 1982 World's Fair in Knoxville, Tennessee.

After these heights, the cube faded from view in recent decades, although an estimated 350 million cubes were sold worldwide by 2009, making it the world's top-selling puzzle game, and probably the world's best-selling toy.

Solving the cube in record time – speedcubing – is a recognized skill. The human record holder is Du Yusheng who solved one in just 3.47 seconds in Nov. 2018.

Unfortunately, this pails before the robot record – 0.38 seconds – set in March 2018 by a machine built by Ben Katz and Jared DiCarlo of MIT's Biomimetics Lab. The motor controller performed a single turn in around 10ms, and since a typical cube solution requires19 to 23 turns, meant that the machine could solve any configuration in around 0.25 seconds. However, the researchers deliberately slowed the mechanism down a tad to make each move more reliable. If a cube is manipulated too quickly, there's a good chance of it exploding.

In 2013, Tomas Rokicki, Kociemba, Morley Davidson, and John Dethridge published a computer-assisted proof in the *SIAM Journal on Discrete Mathematics* [April 30] that every possible starting orientation of Rubik's Cube can be solved in at most 20 face turns.

In the literature, the shortest number of moves for solving a particular cube orientation is called "God's number".

Hayes Communicates
Jan. 30, 1978

Dennis C. Hayes and Dale Heatherington started building internal modems (MOdulator—DEModulator) for home computers at the end of the 1970's.

The Hayes Smartmodem 300. Photo by Michael Pereckas. CC BY-SA 2.0.

Their first product was the 80-103A, a 300 bit/s Bell 103-compatible [June 26] board that plugged into a S-100 bus [Aug 28]. Business picked up quickly, and they soon formed D.C. Hayes Associates (later renamed Hayes Microcomputer Products).

Unfortunately, internal modems had to be redesigned for each bus, a commercially expensive proposition. The solution was to move the modem outside the computer (i.e. by "thinking outside the box"), and connect it to the machine through its RS-232 port [May 00].

Hayes and Heatherington's next modem was an external device, which also introduced their Hayes Standard AT command set. The iconic "Hayes Smartmodem 300" was released on [April 27] 1981.

As the modem market expanded, competitors quickly copied the Hayes command set (and often the rest of Hayes' design as well). Nevertheless, Hayes modems gained a reputation for high quality, and for a time held a 50% market share.

But their products were expensive, and the company unwisely invested heavily in ISDN modems [Nov 16], a market that flopped. The company was liquidated in 1999, although the Hayes name is still used for branding.

IBM 4300 Rings
Jan. 30, 1979

The IBM 4300 series were mid-range machines compatible with IBM's System/370 [June 30]; the popular IBM 4341 and 4331 were announced on this day.

The 4300 series is remembered today not for its processing power, but for its relatively low electrical and cooling requirements, which marked a change in how computers were used in business. In particular, the 4300 didn't have to be installed inside an expensively air-cooled, electrically sophisticated, data center. This made the series much more appealing to medium-size companies which had previously leased IBM services.

The downside was that many third-party IBM leasing companies went out of business during the early 1980's. Perhaps the most famous casualty was Itel Corp, which had been founded in 1967 by San Francisco businessmen Peter Redfield and Gary Friedman. The company was renowned for its opulence - Oriental rugs in offices, Mercedeces as company cars, drinking fountains spouting Perrier water, and annual week-long company cruises. When a lease was signed the management rang a large ship's bell hanging from the office ceiling.

By Feb. 1981, Itel's debts had swelled to $11.3 billion, and it declared bankruptcy on Jan. 1, 1982. By 1984, Itel's core business had moved to railcar and container leasing.

Elk Cloner
Jan. 30 ??, 1982

Elk Cloner has been called the first virus able to spread beyond the computer where it was running. It attached itself to the boot sector of Apple II DOS 3.3 [June 5], and copied itself onto floppy disks. An infected computer would display the following short poem on every 50th boot up:

> Elk Cloner: The program with a personality. It will get on all your disks. It will infiltrate your chips. Yes, it's Cloner! It will stick to you like glue. It will modify RAM too. Send in the Cloner!

It was written in assembly language by Richard Skrenta, aged 15, who began circulating the program among his high school friends in Mt. Lebanon, Pennsylvania, and at his local computer club, on this day.

Skrenta was known as something of a video game prankster; he liked to share modified code that would interrupt gameplay with silly messages.

Skrenta's skills meant that he later worked for Commodore [Oct 10], Sun Microsystems [Feb 24], and AOL [Oct 2]. Twenty-five years later, in 2007, he called Elk Cloner "some dumb little practical joke."

Earlier viruses include Creeper [March 15] (1971), ANIMAL (and PERVADE [Jan 00]) (1974), and arguably the Darwin game [Aug 00] from 1961.

The next DOS-based virus, Brain [Jan 19], was aimed at MS-DOS.

Click of Death

Jan. 30, 1998

The phrase “click of death” was coined to describe the noise an Iomega Zip drive [March 9] made when it failed. The term’s usage later broadened to encompass the clicking any disk drive made as it shuffled off its mortal coil.

On a Zip drive, the sound was a side-effect of an unexpected movement of the read-write head. If the head failed to move correctly or lost track of the disk surface, then the controller recovered by moving the head back to its home position.

In Sept. 1998, a class-action lawsuit was filed against Iomega regarding the clicking which argued that it was a drawback known to Iomega who left it unresolved to save money. It was eventually revealed that a foam washer had been left out of the mechanism.

Yahoo! Groups

Jan. 30, 2001

Prev: [May 28] Next: [Aug 11]

Yahoo! [March 2] Groups was launched as an integration of eGroups.com and Yahoo! Clubs. It grew into the world’s largest collections of online discussion boards, before inevitably declining. At its height, in Aug. 2008, it had 113 million users worldwide and 9 million groups.

eGroups.com was started by Scott Hassan in 1997 as an email list archiving service called FindMail, which later shifted its focus towards hosting email groups. In August 2000, with 18 million users, the company was bought by Yahoo! for $432m in a stock deal.

Yahoo! Clubs was launched in 1998 to let users more easily create communities. Development was led by Doug Hirsch and Matt Jackson. Yahoo! Clubs quickly became one of the largest traffic-generating products within Yahoo!.

Yahoo! Groups decline in the late 2000's was partly due to the rise of Web forums, blogs, and of course social media [Feb 4]. Another problem was the perception that Yahoo! had over monetized the system with too many adverts, and had sacrificed usability for a trendy look.

Entropia

Jan. 30 (or 28), 2003

Jan Welter Timkrans founded MindArk in 1999 in Gothenburg, Sweden. MindArk’s first product, “Project Entropia”, a multiplayer online virtual world, was launched on this day. In April 2006, it changed its name to “Entropia Universe” to reflect its growing size (i.e. multiple planets could now be visited).

Entropia employed a micropayment business model, where players could buy in-game currency called PEDs (Project Entropia Dollars) that could be redeemed as US dollars. This led to several occasions when Entropia hit the news headlines.

On Oct. 24, 2005, Jon “NEVERDIE” Jacobs purchased a “Asteroid Space Resort” in Entropia for the equivalent of $100,000. He said at the time: “In many respects, Virtual Reality is like the wild west, you have to be bold and not a quitter. ” In Nov. 2010, Jacobs sold his resort for $635,000.

On March 18, 2009, Sweden’s Financial Supervisory Authority granted a banking license to Mind Bank AB, a newly formed subsidiary of MindArk. Mind Bank became the first bank to support real money transactions in a virtual world.

In 2018, MindArk launched its own cryptocurrency, DeepToken. At the time, there were more than 33 million micro-transactions per day using Entropia's PED, which supported a $400 million virtual economy.

Changes in Swedish law, caused DeepToken to be withdrawn (i.e. deep-sixed) at the start of 2019.