Oct. 31st

Ronald Graham

Born: Oct. 31, 1935;

Taft, California
Died: July 6, 2020

Graham was greatly respected for his popularization of math through his talks and writings (e.g. the excellent "Concrete Mathematics" written with Donald Knuth [Jan 10] and Oren Patashnik, and "Magical Mathematics" with Persi Diaconis). At various times, he also served as the president of both the American Mathematical Society and the Mathematical Association of America.

Within computing, he may be best known for the "Graham scan", a widely used algorithm for generating convex hulls for two-dimensional point sets.

He was also featured in "Ripley's Believe It or Not!" for being not only "one of the world's foremost mathematicians", but also an accomplished trampolinist and juggler. In his youth Graham and two friends were professional trampoline performers who worked for a circus under the name of the *Bouncing Baers*. In 1972, he was elected president of the International Jugglers' Association, and during his tenure, helped create "Mill's mess" and numerous other new juggling tricks. Of course, he also promoted the many links between juggling and math.

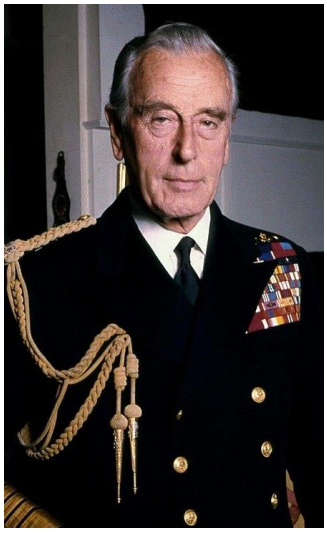
He was a close friend of the renowned and prolific Hungarian mathematician, Paul Erdős, and popularized the concept of the Erdős number.

Mountbatten's Electronic Brain

Oct. 31, 1946

Lord Louis Mountbatten, last Viceroy of India, uncle of Prince Philip, and second cousin once removed of Queen Elizabeth II, helped popularize the phrase "electronic brain" when referring to computers during a talk he gave at the British Institution of Radio Engineers.

He spoke of how the device would "perform functions analogous to those at present undertaken by the human brain." Some of these would "exercise a degree of memory, while some were being designed to employ those hitherto human prerogatives of choice and judgment."



Earl Mountbatten of Burma. Photo by Allan warren. CC BY-SA 3.0.

The Times newspaper published a piece about the talk under the headline "An Electronic Brain: Solving Abstruse Problems; Valves with a Memory." *The Daily Telegraph* preferred the phrase "Radio Brain".

Mountbatten had obtained his information from the National Physical Lab (NPL [Oct 1]), and his talk's somewhat inaccurate references to chess-playing machines suggested that he may have talked to Alan Turing [June 23] about the intended capabilities of the ACE [Feb 19].

In response, Charles G. Darwin (director of the NPL) and Douglas Hartree [March 27] (the main advisor on computing matters at the NPL) wrote to *The Times* complaining of the false impression conjured up by the article, but naturally avoided any direct criticism of Mountbatten. Amusingly, Hartree's letter appeared under the headline "The 'Electronic Brain': A Misleading Term; No Substitute for Thought".

Mountbatten wasn't the first to explain computers in this way – the first large spate of "brains" appeared in the US press the day after the unveiling of the ENIAC [Feb 15] earlier that year. A notable use of "brain" also appeared in an article by Leslie Comrie [August 15] from 1944. The first brain comparison was probably made with the ABC in *The Des Moines Tribune* newspaper [Jan 15] in 1941.

Mercury Delay

Oct. 31, 1947

J. Presper Eckert [April 9] and John Mauchly [Aug 30] filed a patent application for their mercury delay line memory system, which was eventually granted in 1953!

Eckert first conceived of the idea during his research on radar in WWII as a way to reduce the radar reflections bouncing off the ground. A stored radar pulse would be compared to the current one so that reflections from stationary objects could be removed.

The use of delay lines for computer memory [Jan 29] was first suggested by Eckert in early 1945, and utilized in the EDVAC [April 12] and UNIVAC I [March 31]. The delay line circuit stored a series of pulses that were "refreshed" multiple times per second to maintain their data values. Mercury was used since its acoustic properties matched the cycles times of the quartz crystals used to generate the pulses.

As an alternative, Alan Turing [June 23] proposed gin as a delay medium, claiming that it also possessed the necessary acoustic capabilities.

M.A.C.H. 3 Released

Oct. 31, 1983

M.A.C.H. 3, short for “Military Air Command Hunter” (as well as referencing the speed of sound) was a laserdisc-based [Dec 11] arcade shooter produced by the Gottlieb company. The player could choose to face off against enemy planes or fly over aerial targets.

The laserdisc footage was filmed by Clay Lacy from a plane with cameras in its nose and belly, while Warren Davis and Jeff Lee programmed the non-laserdisc elements.

Laserdisc games were seen as one way of rescuing the arcade industry during a slump that had begun that year, and was to last until 1985. Typically, the graphics were employed either for the background, as in M.A.C.H. 3, or for animated segments, as in "Dragon’s Lair" [June 23].

While the graphics were definitely better, the gameplay tended to be more limited since the visuals had been pre-rendered and so were fixed. Also, Laserdisc games often cost twice as much to produce as standard arcade games. It was hardly surprising that they failed to catch on.

Gzip Released

Oct. 31, 1992

Gzip (GNU zip) is both a file format and free software for file compression and decompression. The program was created by Jean-Loup Gailly and Mark Adler as a replacement for the `compress` utility used in early UNIX systems. Unfortunately, `compress` employed the LZW compression algorithm [Nov 27; Feb 10] which was shackled by an onerous patent. Indeed, the same patent had also triggered the development of the PNG [Oct 1] image format to replace GIF [June 15; June 20].

Gzip implementations commonly use Deflate compression, which was developed by Phil Katz [Nov 3] for version 2 of his PKZIP archiving tool.

Simlish

Oct. 31, 1996

Simlish is a fictional language, which debuted in the SimCopter flight simulator game on this day. The game was developed by Maxis as part of its SimCity series, and the language soon migrated to "The Sims" [Feb 4] franchise.

The word "SIMLISH" in Simlish. Created by SweetCanadianMullet. CC BY-SA 4.0.

Simlish is a nonsense tongue, made up of gibberish invented by the voice actors Stephen Kearin and Gerri Lawlor at the insistence of Will Wright [Jan 20], creator of "The Sims". The use of Simlish meant that the cost of recording repetitive dialogue and translating it into different languages could be avoided. Nevertheless, the game team still had to record hundreds of voice clips in Simlish, in various tones and tempos. Soon, the games even included songs sung in Simlish.

Written Simlish, as seen in the games, is a combination of the Microsoft Wingdings font and zodiac symbols, without any real grammar.

Kashpureff Arrested

Oct. 31, 1997

Eugene Kashpureff, the founder of the AlterNIC domain name registry, was arrested in Toronto on wire fraud charges. He had hijacked the InterNIC registry service and redirected its traffic to his own site. However, he claimed this was only to protest against the monopoly control of the US-based Network Solutions (the manager of InterNIC).

Richard Sexton, one of Kashpureff’s colleagues, released a statement, “The most you could have lost was two seconds and one mouse-click. It was fraud, but the fiscal damage amounts to zero. He should be found guilty and fined a dollar.”

After fighting extradition from Canada for two months, he waived his rights, and was sent to NYC. He was released on Dec. 24 having been sentenced to a $100 fine and two years' probation.

Two positive outcomes were the formation of the non-profit Internet Corporation for Assigned Names and Numbers in 1998 (ICANN [Sept 18]), and an increase in debate over whether the US had too much power over the Internet (see [Sept 29], [June 20]). For instance, in May 2000, in RFC 2826, the Internet Architecture Board spoke out strongly against alternative top-level domain names, as they could make parts of the Internet harder to reach.

Sony BMG Rootkit Exposed

Oct. 31, 2005

Mark Russinovich posted a detailed description of the copyright protection software called "Extended Copy Protection" (XCP) that had been silently installed on his computer by a Sony music CD.

XCP imposed digital rights management (DRM [Oct 3]) by modifying the OS to interfere with CD copying. It could also “phone home” with reports on the user’s listening habits.

Russinovich compared XCP to a rootkit due to its efforts to hide its existence. Also it created vulnerabilities that could be exploited by malware [Nov 10]. It even employed several pieces of open-source software in an

apparent infringement of their copyright.

The copy-protection software was included on over 22 million CDs marketed by Sony BMG, the record company formed by the 2004 merger of Sony and BMG's music divisions.

In Aug. 2000, statements by Sony Pictures Entertainment US senior VP Steve Heckler foreshadowed the event. Heckler told attendees at the Americas Conference on Information Systems: "The industry will take whatever steps it needs to protect itself and protect its revenue streams."

In Europe, BMG had already been involved in a similar scandal in 2001 when it released Natalie Imbruglia's second album, White Lilies Island, without warning labels stating that the CD had copy protection. The CDs were eventually replaced.

Sony addressed the 2005 scandal with consumer pay-outs, a recall of about 10% of the affected CDs, and the suspension of its CD copy protection efforts in early 2007.

Today's Riddle

Oct. 31

Q: Why do programmers mix up Halloween and Christmas?

A: Because OCT 31 equals DEC 25 ($31_8 == 25_{10}$)

Another joke in a similar vein: "There are only 10 types of people in the world: those who understand binary, and those who don't."
