May 19th

Rudolf Emil Kálmán

Born: May 19, 1930;

Budapest, Hungary
Died: July 2, 2016

Kálmán co-invented the Kálman filter (or Kálman-Bucy Filter), an algorithm widely used in signal processing, control systems, and guidance, navigation and control. It takes a series of measurements observed over time, containing statistical noise and other inaccuracies, and produces estimates of the unknown variables making up the 'true' signal. It does this by estimating a probability distribution over the variables for each time frame.

During the late 1950's, there was a lot of skepticism about the validity of Kálman's work, and his second paper on the subject, coauthored with Richard Bucy, was initially rejected.

During a visit by Kálmán to the NASA Ames Research Center in the fall of 1960, Stanley F. Schmidt realized how Kálmán's ideas could be applied to the problem of trajectory estimation. This led to the filter's incorporation into the Apollo Guidance Computer [Aug 25]. The remarkable effectiveness of this approach persuaded people to reassess Kálmán work.

Ralph E. Griswold

Born: May 19, 1934;

Modesto, California
Died: Oct. 4, 2006

Griswold's research into programming languages and symbolic computation resulted in SNOBOL, SL5, and Icon.

SNOBOL (StriNg Oriented and symBOlic Language) was developed between 1962 and 1967 at Bell Labs [Jan 1] by David J. Farber, Griswold, and Ivan P. Polonsky, culminating in SNOBOL4, which was highly unusual at the time for supporting patterns as a data type and for providing operators for pattern concatenation and alternation. However, SNOBOL wasn't the first string processing language, which is generally thought to be COMIT [July 5].

According to Farber, SNOBOL wasn't the first choice as a name; they had initially preferred SEXI (Symbolic EXpression Interpreter). Farber recalled why they changed it: "One day I was submitting a batch job to assemble the system and, as normal, on my JOB card, the first card in the deck, was my job and name – SEXI Farber. One of the Computer Center girls looked at it and said, 'That's what you think' in a humorous way."

Farber also remembered that it was Griswold who came up with the new name when he said, "We don't have a Snowball chance in hell of finding a name".

Griswold's Icon language (1977) was also string oriented, but with a syntax similar to C. One of Icon's key concepts is that control structures are based on the "success" or "failure" of expressions, rather than on boolean logic, as in most other languages.

After Griswold's retirement, his interests turned to the mathematical aspects of weaving. He collected and digitized a large library of weaving documents, online at http://www2.cs.arizona.edu/patterns/weaving/weavedocs.html

Gary Arlen Kildall

Born: May 19, 1942;

Seattle, Washington
Died: July 11, 1994

A pioneer of microcomputer software including:

- PL/M (1973), the first programming language and compiler specifically for microprocessors;
- CP/M ([June 22] 1974), the first microprocessor disk OS, which eventually sold a quarter of a million copies;
- BIOS (Basic Input/Output System, 1975) which abstracted hardware-specific parts away from the core OS.

The success of CP/M allowed Kildall and his wife Dorothy to establish the Intergalactic Digital Research company; later more conventionally named Digital Research (DRI).

Gary Kildall (1988).

Although Kildall's career spanned decades, he's mainly remembered because of IBM's unsuccessful attempt to license CP/M for use in the soon-to-be released IBM PC [Aug 12].

When an IBM team visited DRI on [Aug 22] 1980, Kildall left negotiations to his wife, Dorothy, while he delivered software to a manufacture in his private plane.

For unclear reasons, IBM left DRI without an agreement, and turned to Microsoft [Aug 28]. Their MS-DOS was based on 86-DOS (aka QDOS) implemented by Tim Paterson [June 1] from Seattle Computer Products (SCP). Kildall was adamant that a lot of 86-DOS had been stolen from CP/M. But Paterson denied it [March 3]: "I never looked at Kildall's code, just his manual."

When the IBM PC debuted [Aug 12], it could run three OSes – PC-DOS (IBM's rebadged MS-DOS), CP/M, and the UCSD p-system [Oct 22]. However, CP/M was priced at $240 vs. $40 for PC-DOS.

Later DRI projects included a version of CP/M with

multitasking (called MP/M) and an implementation of LOGO [Feb 29] which Kildall thought would supplant BASIC; it didn't.

After seeing a demonstration of the Apple Lisa [Jan 19], he oversaw the creation of DRI's own GUI for microcomputers, called GEM [Feb 28].

In the 1980's, he started a second career as the co-host of the US public TV show "Computer Chronicles" [Sept 00].

In June 1985, Kildall's KnowledgeSet company released the first computer encyclopedia, a CD-ROM version of Grolier's Academic American Encyclopedia, "The Electronic Encyclopedia" [Sept 20].

James Gosling

Born: May 19, 1955;

Dalemead, Alberta, Canada

Gosling was the "father of Java", and implementer of the language's first compiler and virtual machine [Feb 23]. He traces this approach to his graduate student days at CMU when he wrote a virtual machine for the lab's VAX, so that his professor could run programs written in UCSD Pascal [Oct 22].

He also built a multi-processor version of UNIX while at CMU, as well as several compilers and mail systems.

Gosling is the author of Gosling Emacs (GOSMACS), the first EMACS [Oct 2] implementation in C, and the inventor of the NeWS windowing system. NeWS lost out to X Window [June 19] because Sun Microsystems [Feb 24] wouldn't release it with an open source license.

Gosling joined Sun in 1984, but left shortly after the company was acquired by Oracle [Aug 17]. One upsetting example of Oracle's approach was how it cancelled an employee party that the Sun's founders had organized, even though an entire amusement park had been booked for the event.

As a boy, Gosling used to rebuild old farm machinery in his grandfather's yard. In one interview he recalled, "There was certainly a period of time where I would have been happy to do that, just to be a farm equipment repairman."

James Gosling (2005). CC BY-SA 3.0.

Gosling made his first computing device when 12 years-old, with the unknowing assistance of the Alberta telephone company. He scrounged through the trash canisters behind their offices for phone relays and switches, and used them to build a tic-tac-toe machine that won first prize in a local science fair.

The first tic-tac-toe "computer" was also Canadian: Bertie the Brain [Aug 25] was built for the 1950 Canadian National Exhibition in Toronto.

A quote: "Java is C++ without the guns, knives, and clubs."

Fresno Firebomb

May 19, 1970

On April 30, 1970, President Richard Nixon went on TV to ask the American people to support his decision to send troops to Cambodia in response to North Vietnam's invasion of the country.

During the first six days, there was an average of twenty new campus strikes every day, and this escalated dramatically in the days after the slaughter at Kent State. More than 80% of all universities and colleges in the US experienced protests, and about half of the country's eight million students and 350,000 faculty participated in the strikes.

On this day, a group of around 50 students marched across the Fresno State College campus; then somebody threw two fire-bombs through a window of the business administration building.

The fire department later reported that the blaze was put out by 11.00 pm, less than 30 minutes after the bombs were thrown. Fire damage was minimal but the bombs had exploded in the school's new computer center, which included a CDC 3150 [July 8]. The destruction was estimated at between $750,000 and $1 million.

Thankfully, only moments before, student Jerry Polaski had left the building. He had a program bug he couldn't solve, and had left in search of help.

A person was later apprehended and booked on charges of arson and conspiracy.

For more May 1970 protests, see [May 4], [May 9].

ADM-3 Introduced

May 19-22, 1975

The ADM-3 was one of the first video display terminals, offering a 12-inch screen consisting of 12 or 24 lines of 80 characters. It only displayed capital letters at first, but an option was added in 1976 to let it generate both upper and lower case.

Its innovative single board design was created by a team led by Jim Placak, and manufactured by the Lear-Seigler corporation (Lear was also responsible for the Lear Jet).

"ADM" meant "American Dream Machine," at least in some of its advertising, and its later nickname, "the Dumb Terminal", came from another advert.

It debuted at just the right time, when many new minicomputer systems were appearing, each requiring inexpensive consoles, and when computer communications speeds were rapidly increasing.

ADM-3A. Photo by Chris Jacobs. CC BY-SA 3.0.

The ADM-3A added support for control codes that could move the cursor around the screen. The cursor-movement arrows were printed on the HJKL keys, which was the origin of their use for cursor movement inside several text editors, including vi [Nov 8].

The ADM-3 became popular again in the late 1970's as an inexpensive console hookup for hobbyist S-100 computers, such as the Altair 8800 [Dec 19]. An ADM-3 in kit form could be purchased for a very reasonable $695. Another popular terminal for hobbyists was the TV Typewriter [Sept 00].

Other influential terminals from the minicomputer days were the Teletype Model 33 ASR [April 00], and the DEC VT100 [Aug 00].

Apple III

May 19, 1980

Apple announced the Apple III at the National Computer Conference in Anaheim. It was the company's first attempt at a business computer, its first departure from the Apple II [June 5] architecture, and would become its first failure.

Things didn't start well: the machine was meant to be released in July but didn't reach stores until Jan. 1981. In any case, numerous stability issues led to a recall of the first 14,000 units. Many of the problems were caused by the Apple III's lack of a power supply fan which caused the system to overheat, warping the motherboard and loosening some chips.

According to some Apple insiders, this design (which removed air vents) was due to Steve Jobs' [Feb 24] zeal for a simple and silent computer.

At one point, Apple advised the owners of malfunctioning units to lift their machines several inches off the desktop and drop them - to reseat the loose chips.

At the start of the Walt Disney Pictures film TRON [July 9], lead character Kevin Flynn (played by Jeff Bridges) is seen hacking into the ENCOM mainframe using an Apple III.

White Hats Warning

May 19, 1998

The seven members of the "LØpht Heavy Industries" (pronounced "loft") hacker group (Brian Oblivion, Kingpin, Mudge, Space Rogue, Stefan Von Neumann, John Tan, and Weld Pond) testified before the Senate Governmental Affairs Committee.

They warned the committee that computer security was so lax that they could disable the entire Internet in a half-hour. Mudge mentioned a specific vulnerability that they had found in BGP, the Border Gateway Protocol [Jan 18].

LØpht was founded in Boston in 1992, and had become known as a "whitehat" hacker think tank. They released several security advisories and produced widely used software tools, such as LØphtCrack, a password cracker for Windows NT.

Their testimony can be viewed online at https://www.youtube.com/watch?v=VVJldn_MmMY, but is somewhat disappointing since none of the seven are wearing white hats, or hoodies, or wraparound sunglasses.

There really was no excuse for this lapse since the wives of Brian Oblivion and Count Zero, two of the founding members, ran a hat business.

Twenty years later, four members of the original group (Space Rogue, Weld Pond, Kingpin and Mudge) held a briefing entitled ""A Disaster Foretold – and Ignored" (online at https://www.youtube.com/watch?v=VJEty2LVFUw). One "disaster" that still wasn't mentioned was that they still weren't wearing white hats.