Feb. 12th

Jacques Herbrand

Born: Feb. 12, 1908;

Paris, France
Died: July 27, 1931

Although Herbrand died when he was only 23 years old (in a mountain climbing accident), he was already considered one of the greatest mathematicians of his generation. He worked primarily in the areas of mathematical logic, but also had a significant influential on the development of recursive functions.

In 1934 when Kurt Gödel [April 28] introduced the notion of general recursive functions, he noted that this idea had been suggested to him in the letter from Herbrand dated April 7, 1931. Herbrand had visited Berlin at the start of 1931; he had worked with John von Neumann [Dec 28] on logic, and had learnt of Gödel's incompleteness theorem from him.

Kathleen (Kay) McNulty Mauchly Antonelli

Born: Feb. 12, 1921;

County Donegal, Ireland
The family emigrated to the US in Oct. 1924.
Died: April 20, 2006

McNulty was one of the six original programmers of the ENIAC [Feb 15] (the so-called "Refrigerator Ladies" [May 00]), although this was before the modern meaning of "programming" had been coined.

Nevertheless, the group was tasked with devising the sequence of steps that the ENIAC had to perform to solve a problem. They did this without manuals, although they were given the ENIAC's schematics, and could occasionally consult with the ENIAC engineers, such as Arthur Burks [Oct 13].

Typical programs involved the calculation of differential equations in small steps, but this was complicated by the ENIAC's ability to perform multiple operations simultaneously, and the need for each piece of data and instruction to reach the correct location in the circuitry inside a time interval of 1/5000

Kay McNulty (1938). Her high school graduation picture.

th of a second. As a result, it would often take one or two days to set the machine up for a new problem, via plug rearrangments and switches.

McNulty became involved in 1942 after seeing a civil service ad in *The Philadelphia Inquirer* looking for women with degrees in mathematics. Her eventual civil service title was "computer."

Before her assignment to the ENIAC, she worked with the differential analyser [July 23] located in the Moore School's basement, the most sophisticated analogue mechanical calculator of the time. Her obvious skill meant she was chosen to receive training at the Aberdeen Proving Grounds on the equipment used with the ENIAC.

On Feb. 7, 1948, McNulty married John Mauchly [Aug 30]., and joined him at EMCC [Dec 8] where she worked on the software for the BINAC [April 4] and UNIVAC I [March 31]; the hardware that had been designed by her husband.

Raymond C. Kurzweil

Born: Feb. 12, 1948;

Queens, New York

Kurzweil is a well-known advocate for the futurist and trans-humanist movements [March 30], and also a prolific inventor. He developed the first CCD flatbed scanner, the first omni-font optical character recognition software (1974), the first print-to-speech reading machine for the blind (1976), the first commercial text-to-speech synthesizer (1996), and the first commercially marketed large-vocabulary speech recognition system (1987).

In 1965, he appeared on the CBS TV show "I've Got a Secret", where he performed a piano piece that had been written by a relay-based computer he had built. The machine later earned him first prize in an International Science Fair.

In the 1990's, he started a website featuring software to assist the creative process, including "Ray Kurzweil's Cybernetic Poet".

His book "The Age of Spiritual Machines" (1999) argued that computer technology would soon allow machines to operate on a level equivalent to that of the human brain. In "The Singularity Is Near" (2005) he considered the moment when machine intelligence would surpass that of humans.

Douglas Hofstadter [Feb 15] has said of Kurzweil's and Hans Moravec's [Nov 30] books: "It's an intimate mixture of rubbish and good ideas, and it's very hard to disentangle the two, because these are smart people; they're not stupid."

A quote: "Does God exist? I would say, 'Not yet.'"

Ferranti Mark 1

Feb. 12, 1951

The Ferranti Mark 1, arguably the world's first commercially

available general-purpose electronic computer, was delivered to University of Manchester.

As the name suggests, it was based on the Manchester Mark I [June 16], designed by Frederick Williams [June 26] and Tom Kilburn [Aug 11], although it had been built by Ferranti [Feb 27].

The computer was big, consisting of two large bays, each 5 meters long, 2.4 meters high, and 1 meter wide, with a control desk at one end. Inside were 4,000 vacuum tubes, 2,500 capacitors, 15,000 resistors, and nearly 10 km of wiring.

The main improvements over the Mark I were in its storage capacity, a faster multiplier, and support for more instructions. One new command was "hoot" which let the machine give auditory feedback. The sound could be altered in pitch, a feature later exploited by Christopher Strachey [Nov 16] to have the Mark 1 play a medley of tunes including "God Save the King", "Baa Baa Black Sheep", and "In the Mood". The BBC made a recording of these melodies at the end of 1951, making the tape the earliest known recording of computer-generated music. However, the Mark 1 wasn't the first machine with musical skills; CSIRAC, Australia's first digital computer, may have achieved that with a rendition of "Colonel Bogey" on [Aug 7] 1951, or perhaps the BINAC [April 4] was first with "For He's a Jolly Good Fellow."

In Nov. 1951, Dietrich Prinz wrote one of the first games for the Mark 1, for playing chess [June 25]. Hardware limitations didn't allow a whole game to be implemented, only mate-in-two problems. Typically a solution could be found after 15–20 minutes of processing.

Programming initially required the mastery of base 32, but Alick Glennie [June 00] and Tony Brooker developed Mark I Autocode in 1952-1955 [Dec 14], which most programmers came to prefer even though it slowed the machine down considerably.

Today's Mark 1's delivery date beat the UNIVAC I, which was 'turned over' to the US Census Bureau on [March 31] 1951. In any case, the UNIVAC wasn't actually delivered to the bureau until Dec. 1952.

Conway Berners-Lee and Mary Lee Woods, the parents of Tim Berners-Lee [June 8], both worked on the Ferranti Mark 1 and its successor, the Mark 1*. Mary Lee recalled that there was a big notice over the computer: "Think, but not here!," an obvious reference to IBM's dictum [Feb 14].

Ferranti sold nine Mark 1/1*s between 1951 and 1957 (and one or two more to secret government agencies). Three were sold to Canada, Holland, and Italy.

Although the Mark 1 is usually called the world's first commercially available computer, there were two sales that predate it – the BINAC [April 4] to Northrop in Sept. 1949, and the Konrad Zuse's Z4 [July 11], which was delivered to ETH-Zurich in July 1950. However multiple Mark 1's were sold.

Sugata Mitra

Born: Feb. 12, 1952;

Calcutta, West Bengal

Mitra's "Hole in the Wall" (HIW) project made basic computers available at remote places to show that people in small villages, especially children, could teach themselves about computing without formal training. Mitra called this Minimally Invasive Education (MIE), and believed: "In nine months, a group of children left alone with a computer in any language will reach the same standard as an office secretary in the West."

The first experiment, in 1999, placed a computer in a kiosk in a poor part of Kalkaji, Delhi and children were allowed to use it freely; the trial was quickly expanded to over 20 kiosks across rural India. In 2004 the experiment was repeated in Cambodia.

Concerns were raised about the long-term maintainability of the devices, unless they were located in a school environment, and some people dubbed the project: The "Dump hardware in schools, hope for magic to happen" Plan.

The Boston Computer Society

Feb. 12, 1977

The Boston Computer Society (BCS) was a PC users organization that was founded on this day, and remained active until Sept. 1996, a few months short of its 20th anniversary.

It was set up by 13-year-old Jonathan Rotenberg and Richard Gardner, with Rotenberg becoming its president from 1977 to 1990. The first meeting was held in the library at Rotenberg's high school, and two people showed up.

Jonathan Rotenberg (2011). Own photo. CC BY-SA 4.0.

Nevertheless, the BCS grew to become the largest users group in the world, with over 30,000 members in the US and 40 other countries. At its peak in the early 1990's, it supported over 75 special interest groups and held more than 150 monthly meetings.

Notable firsts for the society included Dan Bricklin [July 16] and Bob Frankston [June 14] demonstrating VisiCalc [Oct 19]

in 1979, Steve Jobs [Feb 24] and Steve Wozniak [Aug 11] showing off the Macintosh [Jan 24] in 1984, and Mitch Kapor [Nov 1] test-driving Lotus 1-2-3 [Jan 26].

Wing Commander

Feb. 12, 1996

Electronic Arts released the space simulation game "Wing Commander IV: The Price of Freedom". Its Price of Development was a record-breaking $12 million due to the the inclusion of generous dollops of full motion video, and the hiring of well-known actors such as Mark Hamill and Malcolm McDowell. The cut-scenes were shot on actual sets instead of against a green screen.

The complete game was shipped on six CD-ROMs.

The series creator and director, Chris Roberts, said that he had wanted to create a game that was like a Hollywood blockbuster. Indeed, "Wing Commander" was eventually made into a movie in 1999, the first based on an original game series. Sadly it was a critical and commercial failure, grossing just over $11 million. Neither Hamill nor McDowell appeared in the film, although Hamill is heard as the voice of Merlin, the main ship's computer.

The very first "Wing Commander", released for MS-DOS on Sept. 26, 1990, had an annoying bug – as the game finished the extended memory manager would print "EMM386 Memory manager error." Since the bug didn't affect the game, and time was short, one resourceful programmer (Ken Demarest) hex-edited the text in the manager's software to instead display "Thank you for playing Wing Commander".

Google Groups Released

Feb. 12, 2001

Google Groups grew from Google's purchase of DejaNews' USENET [Jan 29] archive, with the addition of older mailing lists [June 7] lovingly collected by Henry Spencer [?? 1955] and donated by the University of Western Ontario. The earliest post is from Mark Horton [Nov 21], dated May 11, 1981.

Groups has been criticized for the sometimes sudden changes to its search capabilities (which are obviously crucial for such a massive archive), including periods when search didn't work at all.