June 10th

Five Needle Telegraph

June 10, 1837

The electric "Five Needle Telegraph" was patented (UK No. 7,390) by Charles Wheatstone and William Fothergill Cooke. The needles were moved by electromagnetic coils to point to letters on a board, a feature liked by people unwilling to learn codes. However, the board was dispensed with in later systems, and the users were again expected to decipher the messages based on the movement of the needles. Another drawback was that the device had no way of recording the data, which Samuel Morse regarded as a great disadvantage [Oct 19].

Wheatstone and Cooke were granted their patent just ten days before Morse [Oct 19] received his, but historically Morse has been given precedent as the telegraph's inventor, perhaps because he also included a prototype of his dot-dash code in his filing. Nevertheless, Wheatstone and Cooke have patent priority in the UK.

Wheatstone continued to contribute to the telegraph's development, by fixing one of his device's drawbacks – he created a system that used paper tape to store and transmit data [June 2].

Friedrich Ludwig (Fritz) Bauer

Born: June 10, 1924;

Regensburg, Germany
Died: March 26, 2015

Bauer is known for his work on numerical analysis (the Bauer–Fike theorem), coined the term "software engineering" [Oct 7] in 1968, and was an influential figure in establishing computer science as a subject in German universities.

He and Klaus Samelson developed the stack method for expression evaluation while working on the STANISLAUS relay computer in the 1950's, and he was also a member of the committees for ALGOL 58 [May 27] and ALGOL 60 [Jan 11].

Bauer published an early paper on time-sharing in Dec. 1958, although John Backus [Dec 3] probably got there first in 1954.

John Reed Koza

Born: June 10, 1944;

USA

Koza has argued that virtually all problems in AI can be recast as a search for a suitable algorithm, and that genetic programming [Feb 2] provides an ideal way to conduct such a search.

This led to his development of the "invention machine", a 1,000-Pentium [March 22] Beowulf cluster. It's successfully employed genetic programming to create several products, including spacecraft antennae, digital circuits, and telescope lenses. It even has its own US patent related to factory efficiency.

In 1964, Koza was the second person to earn a bachelor's degree in computer science (in his case, from the University of Michigan). For first degrees, see [Oct 00], [June 7]

From 1973 through 1987, he was CEO of Scientific Games, a company which builds state lottery systems. In 1974, this led to perhaps his most popular invention, the scratch card, co-created with Daniel Bower.

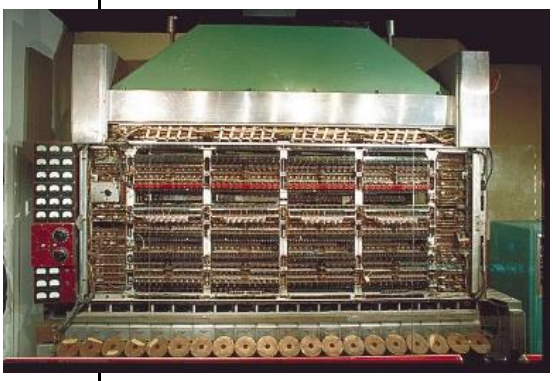
IAS Operational

June 10, 1952

The IAS was the first electronic computer built at the Institute for Advanced Study (IAS) in Princeton. It's sometimes called the von Neumann machine since its design was partly based on the paper "Preliminary Discussion of the Logical Design of an Electronic Computing Instrument" [June 28] by Arthur W. Burks [Oct 13], Herman H. Goldstine [Sept 13], and John von Neumann [Dec 28].

Julian Bigelow [March 19] was hired as chief engineer for the project in May 1946, later joined by Hewitt Crane, Gerald Estrin, George W. Brown, and Willis Ware.

The IAS was arguably the first stored-program computer, based around 40 Selectron [Aug 10] tubes storing both programs and data. The plan was "to achieve a total electronic storage of about 4000 words [...] of 40 binary digits each."



IAS computer at the Smithsonian National Museum of American History.

Unfortunately the Selectron design proved very difficult to convert into a working model, and von Neumann eventually switched to Williams-Kilburn [June 26] tubes. But the IAS' early lead had been lost, and it was 1952 before the machine became fully operational. Therefore, although the IAS was perhaps the first design to mix programs and data in memory, that idea was first implemented on [June 21] 1948 by the Manchester Small Scale Experimental Machine (SSEM; Manchester Baby).

The IAS was considerably smaller than the ENIAC [Feb 15], taking up a mere 100 square feet of floor space and employing only 2,300 vacuum tubes.

Financial support came from the IAS institute, the US Atomic Energy Commission, and several military agencies. One of funding conditions was that the machine's plans had to be available to other government-funded projects. As a result, several US machines resembling the IAS were built, including the ORACLE, JOHNNIAC [Feb 00], AVIDAC [Jan 28], MANIAC [March 15], and ILLIAC I [Sept 1]. The design also went international, being employed in the Australian SILLIAC [July 4], the Swedish BESK [April 1], and the Israeli WEIZAC [Feb 21]. The IAS also influenced the design of the IBM 701 [April 7], the first electronic computer sold by IBM.

Tiny BASIC

June 10, 1976

The language specification for Tiny BASIC by Dennis Allison was published in the Sept. 1975 newsletter of the People's Computer Company (PCC [Oct 00]), a free BASIC created in response to Bill Gates' $150 Altair BASIC [Jan 2] and his recent complaint about piracy [Jan 31].

Li-Chen Wang's interpreter for for the Intel 8080 [April 18] appeared in the May 1976 issue of *Dr. Dobbs Journal* [Jan 00] (the successor of PCC's newsletter). It was actually the fifth implementation, but probably became the most influential. A more recent version is available at `http://www.nicholson.com/rhn/files/tinybasic.tar.Z`, and is labelled with today's date.

The code includes the line "@COPYLEFT ALL WRONGS RESERVED". Copyleft (a play on the word copyright) lets people freely distribute copies and modified versions of a work but with the same rights.

Tiny BASIC could fit into as little as 2 KB of memory, which made it eminently suitable in the early days of microcomputers. By late 1976, Tiny BASICs were available for the Intel 8080 [April 18], the Motorola MC6800 [March 7], and MOS 6502 [Sept 16].

The interpreter only had three error messages ("WHAT?" for syntax errors, "HOW?" for functional errors, and "SORRY" for capacity issues). It also features an Easter egg: 'W', 'AN', 'G' (on lines 43, 51, 62 of the zipped code mentioned above).

Computing's Woodstock

June 10-15, 1976

The 1st Int. Conf. on the History of Computing held in Los Alamos presented an overview of European and American developments since the 1940's.

Recently the event has been dubbed Computing's Woodstock [May 25] by the Computer History Museum (CHM [Sept 24]) due to the attendance of over 100 of computing's top engineers, scientists, and software pioneers.

This rebranding was part of the museum's release of 21 never-before-seen video recordings of talks from the conference.

The machines considered in detail included the ENIAC [Feb 15], EDVAC [Sept 30], IAS [June 10], Whirlwind [April 20], SEAC [June 20] and SWAC [Aug 17], MANIAC [March 15], UNIVAC [March 31], and the ILLIAC [Sept 1].

One surprising talk was about Colossus [Jan 18] by Brian Randell, which had been a closely guarded secret until just before. Also, Konrad Zuse [June 22] laid out the case for computer development having started in Germany in 1937.

Robot Waiters

June 10, 1983

"The Two Panda Deli", a fast-food Chinese eatery in Pasadena, owned by Shayne and Terry Hayashi, took on new staff – two 4.5 foot tall, 180 pound robots, called Tanbo R-1 and Tanbo R-2. Each Japanese-built robot cost $20,000.

The owners later admitted that R-1 and R-2 were unreliable employees, often breaking down. Also, while they could generally deliver an order to a table, they were easily confused if a chair or table was moved.

The pair also tended to mumble their words when their 12-volt power cells ran down, and were known to drop food and spin in circles when police radios were switched on nearby.

The robots were generally polite, asking "Will there be anything else?" and "See you tomorrow" - in Japanese, English, or Spanish. However, a misunderstood command would generate the response: "That's not my problem," accompanied by a short blast of disco music which caused the robots to start dancing.

For more robot waiter activity, see [March 17].

First Model M

June 10, 1985

The original keyboard released with the IBM 5150 [Aug 12] was unloved, with people complaining about its awkward layout and nonstandard design.

An early IBM Model M. Photo by Raymangold22. CC0.

IBM quickly assembled a ten-person task force to craft a new keyboard. The resulting 101-key design, the Model M, soon became a standard, with a layout that dominates keyboards to this day. In July 2008, *PC World* called it the "greatest keyboard of all time".

Most variants use a buckling-spring key design which gives the keyboard a unique feel and sound, and some users believe they can type faster and more accurately because of it.

All Model M keyboards made by IBM and Lexmark had an ID label on the underside indicating the part number, serial number, and manufacturing date. Some resellers use this information to sell “birthday” keyboards.

El Torito

June 10, 1994

The El Torito Bootable CD Specification was an extension to the ISO 9660 CD-ROM specification [Sept 1] which let a computer boot from a CD-ROM.

El Torito was the brainchild of two engineers – Curtis Stevens, of BIOS manufacturer Phoenix Technologies [July 10] in Irvine, and Stan Merkin, formerly of IBM, but working at Dell in Austin at the time.

The name “El Torito” came from the El Torito Grill restaurant in Irvine, where the pair collaborated on the specification over lunch. Reportedly, Merkin had calamari fajitas and Stevens went for steak fajitas, both with fresh tortillas.

The El Torito spec. was announced at the INFOCOMM conference on this day.
