Dec. 10th

Augusta Ada King, Countess of Lovelace

(née Gordon, or perhaps Byron)

Born: Dec. 10, 1815;

London, UK
Died: Nov. 27, 1852

Lovelace is remembered for her involvement with Charles Babbage's [Dec 26] Analytical Engine [Dec 23], and in particular for her translation and expansion [July 10] of a paper by Luigi Federico Menabrea which described a seminar Babbage gave on the Analytical Engine in the autumn of 1840. Her extra notes include what is considered the first 'program', for generating Bernouilli's Numbers, and the famous quote: "The Analytical Engine weaves Algebraical patterns just as the Jacquard loom [July 7] weaves flowers and leaves."

Her reputation as the first programmer, led to the Ada programming language [see entry two pages on] being named after her.

Ada Lovelace (1843 or 1850). A daguerreotype by Antoine Claudet.

Lovelace also helped Babbage in several of his schemes for raising money to build the Engine. For example, they considered building a tic-tac-toe machine and even a mechanical chess player.

She first met Babbage on June 5, 1833, and two weeks later visited his studio to see the Difference Engine [June 14]. She first heard of his ideas for an Analytical Engine at a dinner party in Nov. 1834.

Lovelace wrote a book entitled "flyology" on powered flight when she was 12 years old that accurately documented wing-body ratios necessary to achieve flight. She toiled away on this project until her mother reprimanded her for neglecting her studies, which were meant to set her on a rational course, not a fanciful one.

Babbage called her "The Enchantress of Number".

Allan Marquand

Born: Dec. 10, 1853;

New York City
Died: Sept. 24, 1924

During 1881–1882, Marquand built a machine inspired by William S. Jevons' Logic Piano [Sept 1]. It could display all the valid implications of a logical proposition using a mechanism constructed from various arrangements of rods and levers, catgut string, springs, and a bell.

In 1885-1887, following a suggestion of Charles Peirce's [Sept 10], he designed a logic machine employing electric circuits. It would have had 16 electromagnetic elements, with information represented as the magnetic state of each element. A side-effect was his development of Marquand diagrams – a visual method for simplifying Boolean expressions.

He lifted one example of the type of problem the machine could have solved from Lewis Carroll's "Symbolic Logic" textbook:

"No birds, except ostriches, are nine feet high. There are no birds in this aviary that belong to anyone but me; No ostrich lives on mince pies; I have no birds less than nine feet high."

The device (if built) would have had no trouble in drawing the conclusion, "No bird in this aviary lives on mince pies."

Nikola Tesla also developed an early electronic logic gate circuit, which he used to control his Teleautomaton remote-controlled boat [Dec 8].

Joseph F. Ossanna

Born: Dec. 10, 1928,

Detroit, Michigan
Died: Nov. 28, 1977

Ossanna was behind a Bell Labs' proposal to replace an aging PDP-7 [Dec 00] with a brand new PDP-11 [Jan 5] in the Patent department. Theat was all a smokescreen: the real motive was to allow the nascent UNIX group [Oct 15] to move their OS to a more powerful machine.

Ossanna interest in text formatting led him to create Nroff ("new roff"), an improvement on the roff text formatter [Nov 6] that was able to print formatted patent applications. By the end of 1971, typists were using UNIX during the day, while Ken Thompson [Feb 4], Dennis Ritchie [Sept 9] and others developed it at night.

In 1973, Ossanna wrote troff to drive a Graphic Systems CAT phototypesetter for producing camera-ready copy. troff stood for "typesetter 'roff", so was pronounced tee-roff. troff was eventually followed by Brian Kernighan's [Jan 1] ditroff (device independent troff).

Keith G. Taft

Born: Dec. 10, 1933;

Cut Bank, Montana
Died: Aug. 28, 2006

Taft was a wearable computing pioneer in a very specific domain – the creation of miniscule, hidden devices to give

him an advantage while playing Blackjack in casinos.

He was working as a chip designer at Raytheon in the early 1970s when he read "Beat the Dealer" (1962) by Edward O. Thorp [Aug 14]. He decided to apply his skills to developing a wearable computer that could count cards for him.

Two years later he had a 16-bit machine called "George," built around a 4-bit ALU, that weighing around 15 lbs. when batteries were attached. It was operated by four switches: one above and one below each big toe, and sent instructions to him through LED lights on the inside of his glasses. The diodes were connected to a thin wire that was combed into his hair and ran down the back of his collar. "George" was strapped to his waist with bandages, and the bulkiness hidden by an oversized coat.

Ken Uston, a blackjack veteran, heard about Taft's invention and they became partners. This led to a new model called "David" which accepted input via a keyboard strapped to the user's thigh and was operated through a hole in the trousers' pocket. However, the biggest change was that "David" could communicate both with the player and the leader of the blackjack team via a small radio transmitter. The leader's receiver was concealed in the heel of one of his shoes.

Taft also developed a dental communicator which was linked to the machine via wires that ran through his mustache and beard, and an early digital camera hidden inside a belt buckle, called the "Belly Telly."

Cecil Wayne Ratliff
Born: Dec. 10, 1946;
Ironton, Ohio,

Ratliff helped kick start the PC database market when he released Vulcan in 1978. Ashton-Tate [Aug 00] bought the software in 1980, renaming it dBASE II, and turned it into the

most popular database product of the 1980's.

Vulcan wasn't Ratliff's first database: he had previously written a data management system called MFILE used in NASA's Viking lander [June 20] project.

Ratliff wrote Vulcan primarily so that he could track his bets on football. The software was based on a public domain database system called JPLDIS (JPL Display and Information Systems) written in FORTRAN on the UNIVAC 1108 [Oct 00] . Ratliff added a query-by-form interface, and recoded it in Intel 8080 [April 18] assembly on CP/M [June 22] for speed. Vulcan was named, of course, after Mr. Spock's home planet in Star Trek [Sept 8]. In October 1979, Ratliff placed a quarter-page ad in BYTE magazine, and was overwhelmed by the response.

Ratliff joined Ashton-Tate in 1982 as vice president of new technologies, and was the project manager, designer, and lead programmer for the even more successful dBASE III.

Ratliff later admitted that dBASE had made him so busy that he never got around to using the database for its original purpose: "I've only had time to watch two or three football games".

ERA 1101
Dec. 10-12 1951

Frank C. Mullaney presented a paper on the design of the ERA 1101, arguably the first reliable stored program computer built in the US. Usually the title of first American stored program computer is awarded to EMCC's BINAC [April 4], which was delivered to Northrop in Sept. 1949, but it suffered from major reliability problems.

Work on the 1101 had begun in 1947 when the Navy awarded

Engineering Research Associates (ERA [Jan 00]) a contract called "Task 13". Jack Hill became the project supervisor and Mullaney project engineer.

The finished machine contained 2700 vacuum tubes, 2400 crystal diodes, and employed drum memory. It was originally called the ERA Atlas after the mental giant in the "Barnaby" comic strip.
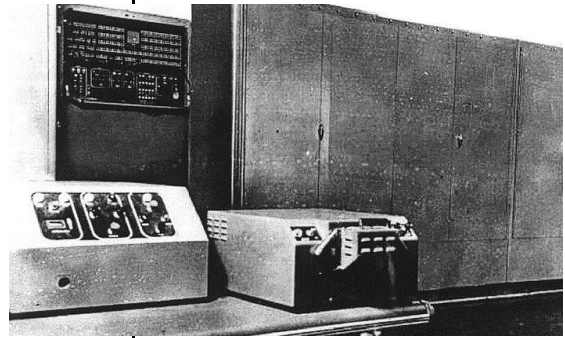
The ERA ATLAS (1101), circa 1954. Photo from NSA's "Center for Cryptologic History".

It was delivered to the NSA in Dec. 1950, and in its first 500 hours only required 16 hours of unscheduled maintenance, an unheard-of level of performance for the time. Its success led ERA to obtain permission from the Government to offer the computer for general sale, now renamed the ERA 1101. Jack Hill chose "1101" since it was the binary for 13, as in "Task 13".

After Remington Rand [Jan 25] acquired ERA in 1952, it continued to sell the 1101, although now as the "UNIVAC 1101".

UNIMATE Robot
Dec. 10, 1954

The Unimate (short for Universal Automation) was the first industrial robot, which began its life on this day as a patent filed by George Devol [Feb 20].

Although Devol's application was the first for an industrial robot arm, the first commercially available arm was the PLANOBOT [March 13]

available from 1957 (or perhaps 1955).

In 1958, Devol and Joseph Engelberger founded Unimation, the world's first robot manufacturing company. Their first Unimate robot was sold to General Motors in 1961, and was deployed to a car plant in Ewing Township, New Jersey. It weighed 4,000 pounds and cost $25,000, but the arm had six fully programmable axes of motion and could handle parts weighing up to 500 lbs. It was originally used to lift hot pieces of metal out of a die-casting machine and stack them. This was a dangerous task for human workers, who could be poisoned by the fumes or be seriously burnt if they were careless. The robot turned out to be a dedicated employee, putting in an estimated 100,000-hour shift before its retirement to the Smithsonian.

Perhaps the most famous Unimate appearance was on Johnny Carson's "The Tonight Show" in 1966. It successfully knocked a golf ball into a cup, poured a beer, and directed the band, although it also managed to drop the baton at one point, and waved an accordion around in a somewhat threatening manner. Its appearance required two weeks of rehearsal.

A more up-market Unimate found gainful employ at the prestigious Biltmore Hotel in Los Angeles in 1967, pouring out cups of coffee.

In 2005, *Popular Mechanics* magazine selected the Unimate as one of its "Top 50 Inventions of the Past 50 Years".

Transistor Nobel
Dec. 10, 1956

Prev: [Oct 3]

John Bardeen [May 23], Walter Brattain [Feb 10], and William Shockley [Feb 13] were awarded the 1956 Nobel Prize for Physics for their work on the transistor at a ceremony hosted by King Gustav VI Adolph of Sweden.

The award had been announced back on Nov 1, by which time, the trio no longer worked together. Shockley had formed his own company, Bardeen had taken a job at the University of Illinois, and only Brattain was left at Bell Labs.

Bardeen was at home cooking scrambled eggs, when he heard the announcement on the radio. He was so surprised he dropped the pan on the floor.

When the trio were getting ready for the awards ceremony, Bardeen realized that the vest and tie for his white suit had been washed with some colored laundry and had turned green; luckily Brattain had an extra outfit to lend him.

After the ceremony, the three of them, together with wives and guests, held a late-night champagne-fueled party to celebrate. They deserved it.

Ada Manual
Dec. 10, 1980

The reference manual for the Ada programming language was released on the anniversary of Ada Lovelace's birthday [prev. entry two pages ago], and assigned the number MIL-STD-1815 (the "1815" was a reference to her year of birth).

Ada was designed for the US Department of Defense (DoD) by a team led by Jean Ichbiah [March 25] of CII Honeywell Bull. It was based on Pascal [Feb 15] but possessed stronger typing, object-oriented features, explicit concurrency, message passing, and support for non-determinism.

It was intended to replace over 450 languages then employed by the DoD in various projects, and Ichbiah declared that within ten years, only two languages would still be tolerated: Ada and Lisp [April 15]. It never achieved that level of ubiquity, but definitely found a niche for writing safety critical systems (e.g. in missile guidance, avionics, and spacecraft navigation). For example, it was used in the

Mirage 2000 fighter and the Boeing 777. The 80,000 lines of code found in the Ariane rocket included "more than 99% Ada," according to the *Le Monde Informatique* magazine.

On the downside, Tony Hoare [Jan 11] used his Turing Award [June 23] speech in 1981 to criticize Ada for being overly complex. However, it does possess the longest palindromic language name.

Pray Mr. Babbage
Dec. 10, 1982

Maurice Wilkes' [June 26] play, "Pray Mr. Babbage – A character study in dramatic form", was performed at the DEC museum in Marlborough, Mass. The center, located in DEC's MR-2 building, was the forerunner of today's Computer History Museum (CHM [Sept 24]).

The title is a quote from Charles Babbage's [Dec 26] autobiography, "Passages from the Life of a Philosopher" (1864): "On two occasions I have been asked, —"Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?" In one case a member of the Upper, and in the other a member of the Lower, House put this question. I am not able rightly to apprehend the kind of confusion of ideas that could provoke such a question."

Cisco
Dec. 10, 1984

Cisco Systems, currently the world's largest networking hardware company, was founded by Leonard Bosack and his wife Sandy Lerner, two Stanford sysadmins.

Their first product was based on Stanford's "Blue Box" router with software written by William Yeager. Supposedly, it was the result of Lerner and Bosack's efforts to connect two incompatible Stanford systems so they could send romantic

messages to each other. Some three years after the product's release, Stanford decided to officially license the software and boards to the company.

The "Cisco" name was derived from "San Francisco", so the company's engineers insisted on using the lower case "cisco" in its early years. The company's logo depicts the two towers of the Golden Gate Bridge.

The Cisco logo (2016).

Much needed venture capital came with the appointment of a new CEO, John Morgridge, in 1988. Apparently, the first thing he said to Lerner was, "I hear that you're everything that's wrong with Cisco."

In 1990 Lerner was fired, and Bosack resigned in protest, and the two subsequently sold their stock for $170 million. Lerner later became a respected Jane Austen scholar, and bought a 125-year lease on Chawton House, the estate where Austen lived.

We're All Doomed
Dec. 10, 1993

id Software [Feb 1] released Doom for MS-DOS via a FTP server at the University of Wisconsin–Madison. Thousands connected to the site to get the software, crashing it twice. Doom was downloaded around ten million times during its first two years.

Doom, like "Wolfenstein 3D" [May 5] (another id Software title), was a 3D FPS, but had multiplayer support, which made it possible for players to fight (and kill) each other; this led to the coining of the term "deathmatch".

John Carmack [Aug 20] had started developing the game's

engine in 1992, and it became the first one to feature a fully texture-mapped environment, walls joined at any angle with any thickness, variable height floors and ceilings, variable lighting, and animated elements such as lava and radioactive waste. The ability to create custom game levels in the form of WAD files ("Where's All the Data?") was particularly popular.

The main influences on the game's look were the movies Aliens (1986) and "Evil Dead II" (1987). Some of the weapons were inspired by toy guns from "Toys "R" Us". The game's name came from Tom Cruise's "Doom" pool cue in the "The Color of Money" (1986).

Doom player with chainsaw.

By 1995, Doom was estimated to have been installed on more computers than MS Windows 95 [Aug 24], and one Windows 95 promotional video even had Bill Gates digitally superimposed into the game. Microsoft Excel 95 [May 2] included a Doom-esque secret level as an Easter egg.

Interest in the game was rekindled in 1997, when the engine's source code was released.

The Book of Mozilla
Dec. 10, 1994

The "Book of Mozilla" was an Easter egg found in the Netscape [March 25] and early Firefox [Nov 9] browsers, that was accessed by typing the command, about:mozilla.

The 'book' took the form of passages written in the style of biblical apocalyptic literature. The first one reads:

"And the beast shall come forth surrounded by a roiling cloud of vengeance. The house of the unbelievers shall be razed and they shall be scorched to the earth. Their tags shall blink until the end of days.

from The Book of Mozilla, 12:10"

The punishment refers to a feature in early versions of Netscape where incorrectly used tags would blink. The 12:10. refers to this day, when Netscape Navigator version 1.0 was released (although some sources suggest it debuted on Dec. 15).

Keyboard Damages
Dec. 10, 1996

In the first verdict of its kind, a federal jury ordered DEC [Aug 23] to pay nearly $6 million to three women (two secretaries and a clerk) who suffered disabling arm and wrist injuries that they blamed on their keyboards. However, the judgment was thrown out in May 1997 when DEC presented new evidence, and on June 17, 1998, another federal jury rejected similar claims by nine people, also against DEC.

One of the lawyers, Thomas C. Siekman, noted: ''A hammer, if improperly used, can be quite dangerous.''

Nobel Prize for GMR
Dec. 10, 2007

Albert Fert and Peter Grünberg received the 1988 Nobel Prize in physics for their independent discovery of the Giant Magnetoresistive Effect (GMR) – that small changes in magnetic fields can trigger major

fluctuations in electrical resistance.

One consequence is that GMR allows disk drives to read more densely packed magnetic signals, making it possible to shrink disk sizes and/or increase their storage capacities.

However, nearly a decade passed before GMR was put to practical use – largely because the ultra-thin layered metals necessary for the effect were too expensive to produce commercially. Stuart Parkin, a researcher from IBM, was the first to come up with a cheap way to achieve GMR. By 1997, the first hard drives utilizing the phenomenon were in production.