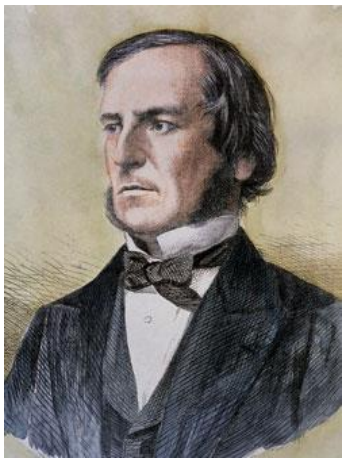
Nov. 2nd

George Boole

Born: Nov. 2, 1815;

Lincoln, UK
Died: Dec. 8, 1864

Boolean algebra was introduced by Boole in his 1847 pamphlet, "The Mathematical Analysis of Logic," and considerably expanded in 1854 when he published "An Investigation of the Laws of Thought, on Which are Founded the Mathematical Theories of Logic and Probabilities."



George Boole. Unknown artist.

Incredibly, Boole's ideas were largely ignored at the time, until the American logician Charles Sanders Peirce (and others) explained and elaborated on them in the 1870's after Boole's death. Perhaps it helped that Pierce coined the eponymous phrase in the chapter title, "A Boolean Algebra with One Constant "in his paper "The Simplest Mathematics". However, the paper wasn't published until much later, and many historians prefer to credit the catchy name to Henry M. Sheffer in 1913.

Boole's work caught the interest of several creators of mechanical logic machines. For example, William Jevons' Logical Piano of 1869 (see [Sept 1]) was informed by his reading of Boole's 1854 paper. However, the most decisive step took almost seventy years: in 1937 Claude Shannon [April 30] realized that Boolean algebra could be employed to optimize the design of electromechanical relay systems. He also showed how relay circuits could solve Boolean algebra problems [Aug 10].

Sergey Alexeyevich Lebedev

Born: Nov. 2, 1902;

Nizhny Novgorod, Russia
Died: July 3, 1974

In 1947, Lebedev designed the MESM [Nov 6], the earliest, fully operational electronic computer in the Soviet Union, and in continental Europe. As such, he's considered the founder of the Soviet computer industry.

Next was the BESM-1 ("Bolshaya Elektronno-Schetnaya Mashina"), aka the "High-speed Electronic Calculating Machine." It was completed in 1952, and while the MESM jogged along at 50 ops/sec, BESM-l sprinted at 1000 ops/sec in its first form, and increased in speed in later versions to reach 8000. Further machines appeared during the 1960's, with the BESM-6 achieving 1 million ops/sec in 1967. That computer stayed in production for 17 years, with over 350 being built.

The BESM series were developed at the Institute of Precision Mechanics and Computer Engineering (IPMCE), which was later home to the Elbrus supercomputer series [Dec 20]. By then the institute had been renamed in Lebedev's honor.

In his spare time Lebedev was a keen mountaineer. Colleague D.V. Svecharnik recalled their climb of Elbrus – Europe 's highest summit (5.6 km): "the last 50 meters I was literally creeping on my knees and elbows but Lebedev was boldly skipping over rocks".

Other soviet computing pioneers include Bashir Rameyev [May 1], Georgi Lopato [Aug 23], and Boris Babayan [Dec 20].

Adriaan "Aad" van Wijngaarden

Born: Nov. 2, 1916;

Rotterdam, the Netherlands
Died: Feb. 7, 1987

Wijngaarden was one of the founding fathers of computer science in the Netherlands, especially in the areas of numerical analysis and programming languages.

On Jan. 1, 1947 he became the head of the computing department at the new Mathematisch Centrum in Amsterdam, and led the construction of the first Dutch computer, the ARRA, in 1952. The engineering group formed by van Wijngaarden included several other Dutch pioneers, such as G.A. Blaauw [July 17], and Edsger W. Dijkstra [May 11].

Wijngaarden developed W-grammar (also called the Van Wijngaarden grammar or vW-grammar) first used for the definition of ALGOL 68 [Dec 20].

A W-grammar consists of a set of meta-rules, which are used to derive (possibly infinitely many) context-free grammar rules for a language. This allows syntactical constraints to be defined which had to be previously written in natural language, such as the rule that the type of a variable and its assigned value match each other.

BBC TV

Nov. 2, 1936

The BBC TV Service was launched at Alexandra Palace in London, becoming the world's first to produce regular programming, albeit just two hours per day (excepting Sunday when man rests). However, the world's oldest TV station, although purely an experimental venture, went live in the US on [Jan 13] 1928.

The BBC edged its bets by installing and testing two competing technologies: Marconi-EMI's 405-line system and John Logie Baird's [Aug 13] 240-line intermediate film system [Oct 2]. They transmitted on alternate weeks until the Marconi system was chosen as the winner early in 1937.

Baird's system was arguably technically inferior, but he also had some amazingly bad luck. On Nov. 30, 1936, the Crystal Palace, which housed all of Baird's TV equipment, burned to the ground. The Marconi system was adopted three months later.

The viewership of the BBC's service gradually increased from 100 or so homes, to an estimated 25,000 to 40,000 before the outbreak of WWII. It was suspended on Sept. 1, 1939, but resumed, post-war, at 3pm on June 7, 1946. The popular story goes that the service closed down in the middle of the broadcast of the Mickey Mouse cartoon "Touchdown Mickey" (1933), and that it resumed seven years later with the BBC presenter Jasmine Bligh explaining, "As I was saying when we were so rudely interrupted…". Then the cartoon was re-broadcast.

Leonid Anatolievich Levin

Born: Nov. 2, 1948;

Dnipropetrovsk, Ukraine

Levin works in the areas of randomness, algorithmic complexity, and intractability.

Levin and Stephen Cook [Dec 14] independently discovered the existence of NP-complete problems. While Cook considered a problem involving Boolean formula, Levin looked at search problems.

Personal Computer

Nov. 2, 1962

At a meeting of the American Institute of Industrial Engineers in Washington DC, John W. Mauchly [Aug 30] spoke of his vision for the future of computing: "There is no reason to suppose the average boy or girl cannot be master of a personal computer." Thus was the phrase "personal computer" coined.

Mauchly also showed off a "portable" 50-pound, suitcase-sized computer, and accurately predicted that "the present emphasis on miniaturizing components of missile and spacecraft will inevitably result in developing small, inexpensive computers within the financial reach of almost everyone." Unfortunately, the well-known photograph of Mauchley holding this 'computer' reveals, on closer scrutiny, that it's actually a demo box for his Critical Path Method (CPM) for scheduling problems.

The term "personal computer" only started becoming popular six years later (1968) when Hewlett Packard began referring to its 9100A calculator [Oct 4] as a 'personal computer' in its advertising. They also called it a "Powerful Computing Genie".

IBM was perhaps the first manufacturer to use "personal" in a product name, with its IBM 610 Auto-Point Computer, released on [Sept 3] 1957, which was also known as the PAC (Personal Automatic Computer),

A well-known 'first' use of the phrase is ascribed to Alan Kay [May 17] when he described his Dynabook concept in a paper called "A personal computer for children of all ages" presented at ACM '72 in Boston.

Or you might prefer when the magazine "Radio-Electronics" featured a real-life device, the Mark-8, dubbed the "personal minicomputer," on its front page in [July 00] 1974.

The Morris Worm

Nov. 2, 1988

Robert Tappan Morris, Jr., a graduate student at Cornell, released a self-replicating shell process upon the ARPANET as part of a research project to determine the network's size.

The 'worm' exploited two mechanisms to 'infect' systems: coding weaknesses in the UNIX sendmail, finger, and rsh/rexec utilities, and rudimentary password guessing, using a dictionary of just 432 words. Lest we scoff, that dictionary included the second most common password as of 2020 ("password"), but missed a trick by not testing for the all-time most popular, "123456".

Unfortunately, Morris' code included the ability for the worm to occasionally duplicate itself even when another worm was detected on the system. This proved to be a major design flaw as the growing number of worms slowed systems down to a crawl.

Robert Tappan Morris, Jr. (2008). Photo by Trevor Blackwell. CC BY-SA 3.0.

The next day, Nov. 3, was later dubbed "Black Thursday" as sysadmins around the US discovered hundreds or thousands of worms on their machines, that reproduced faster than they could be killed. Eventually the worm spread to an estimated 6,000 machines, roughly 10% of the ARPANET, and caused significant disruption for two days.

Morris Jr. was dismissed from Cornell, and on July 26, 1989 became the first person convicted under the "Computer Fraud and Abuse Act". However, he didn't go to jail since the judge felt that "the characteristics of this case were not fraud and deceit." Instead, he was sentenced to three years' probation, 400 hours of community service, and fined $10,000.

Morris, Jr. is the son of Robert Morris, Sr. a respected cryptographer and computer professional who in the 1970's made significant contributions to UNIX, including the bc 'math' language, crypt, and (ironically) its password encryption scheme. By the mid 1980's Morris, Sr. was chief scientist at the NSA's [Oct 24] National Computer Security Center, where he was involved in the production of the Rainbow Series [Aug 15].

In 2015, Morris Jr. was elected an ACM Fellow for "contributions to computer networking, distributed systems, and operating systems."

John Titor Needs an IBM 5100

Nov. 2, 2000

"John Titor" posted messages to several bulletin boards during 2000 and 2001 claiming to be an American military time traveler from 2036. He had been sent back to 1975 to retrieve an IBM 5100 [Sept 9] which was needed to debug various legacy programs, perhaps in relation to the imminent UNIX year 2038 problem [Jan 19]. He had made a stopover in the year 2000 for "personal reasons".

The first posts labelled with John Titor's favored military symbol appeared in posts to several forums on this day, under the name TimeTravel_0.

Just in case, people doubted the veracity of his story, Titor later uploaded pictures of his "displacement" unit (made by General Electric), and pages from the user manual.

Titor also made numerous predictions regarding calamitous events that would occur in 2004 and beyond, none of which have taken place. Maybe he inadvertently altered the time-stream by revealing them?

A 2009 investigation concluded that Titor was likely the creation of Larry Haber, a Florida entertainment lawyer, along with his brother John, a computer scientist.

For more time travelling, see [May 7] and [Nov 26].

Hacking Democracy

Nov. 2, 2006

"Hacking Democracy" is an Emmy nominated documentary film by Russell Michaels and Simon Ardizzone. It focuses on irregularities with 'e-voting' (electronic voting) systems that occurred during the 2000 and 2004 US elections, particularly on machines made by Diebold Election Systems. The film argues that it is particularly easy to change the numbers tallied on these machines. For example, Finnish computer security expert Harri Hursti demonstrated his "Hursti Hack" which allows negative votes to be assigned to candidates.

Diebold President David Byrd said that the movie was "replete with material examples of inaccurate reporting", and demanded that it not be shown.

Unicorns

Nov. 2, 2013

The term "unicorn" was coined by Aileen Lee in a TechCrunch article. Lee wanted a word for the group of tech startups that carried valuations over $1 billion and were founded after 2003. She eventually plumped for the mythical animal to represent the statistical rarity of such ventures,, although it soon became apparent that such businesses weren't that uncommon. As of Oct. 2020, there were 450.

A unicorn on the City Hall, Bristol. Photo by Angel the Techrat.

Canadian tech unicorns are known as "narwhals", while 'decacorn" is used for companies valued at over $10 billion (23), and "hectocorn" for those over $100 billion (just one, Bytedance).

Bill Gurley coined the term "Frankenunicorn": companies that would die without the artificial life-force supplied by venture capital.