Hale's Tours of the World
April 30 – Dec. 1, 1904

"Hale's Tours of the World," conceived by George C. Hale and William Keefe, was an amusement park attraction which might be considered the earliest form of immersive real-world simulation.

A 15-minute tour took place in an imitation railway passenger carriage which could accommodate around 50 people. Through the carriage's windows, the passengers saw various travelogues, rear-projected onto screens. "Realism" was increased by park staff rocking the carriage, a wind machine, and sound effects. There was also a 'conductor', who snipped tickets, and 'lectured pleasantly' throughout the excursion.

The first Hale's Tours appeared at the 1904 St. Louis Exhibition, and hundreds of copies soon spread throughout the US and Canada.

George Robert Stibitz
Born: April 30, 1904;
York, Pennsylvania
Died: Jan. 31, 1995

In 1937, Stibitz realized that boolean logic circuits could be built from electromechanical relays, and constructed the Model K [Nov 00], a binary adder, to prove it. This prototype persuaded Bell labs to fund the creation of his Complex Number Calculator (CNC) [Jan 8], and several more relay calculators during the war, so the CNC was retroactively renamed the Model I.

Not only is Stibitz one of the fathers of the digital computing,

but he also coined the phrase [April 23].

In Sept. 1943, Stibitz finished the Model II, one of the first programmable calculators. The Model III was nicknamed "the baby" since its "fault" alarm often went off during the night, waking people up.

The Model V was the most ambitious, two of which were built in 1946 and 1947. Each one contained over 9,000 relays, could store up to 30 7-digit decimals, and took about a second to multiply two values together. Numbers were represented in floating point, a feature absent from later digital computers for many years, but relatively easy to implement with relays.

Stibitz began experimenting with electrical gadgets while still a boy. As usually happens in such cases, he nearly set his parent's house on fire by overloading its wiring with an electric motor (given to him by his father).

## Claude Elwood Shannon
Born: April 30, 1916;
Petoskey, Michigan
Died: Feb. 24, 2001

Shannon is known as "the father of information theory", a subject he created with the landmark paper, "A Mathematical Theory of Communication" in 1948. He's also credited with founding digital circuit design theory, with his Masters thesis [Aug 10] (1937) on the electrical application of Boolean algebra; its been called the most important Masters thesis of all time. In a spare moment in 1948, Shannon coined the word "bit."

Shannon made several important contributions to AI through his interest in games and puzzles. For example, he built a maze-solving mechanical mouse called "Theseus" as part of his work on telephone switching systems. He described it as being "capable of solving a maze by trial-and-error means, of remembering the solution, and also of forgetting it in case the situation changes and the solution is no longer applicable."
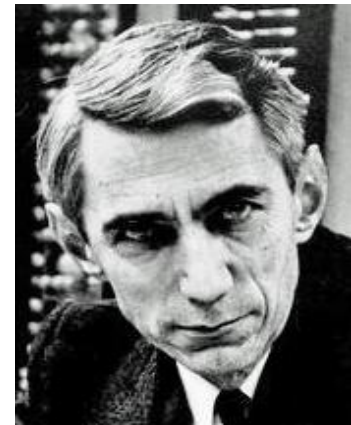
Claude Shannon. Photo by Konrad Jacobs. CC BY-SA 2.0 de.

Shannon also published the first paper on computer chess [Nov 8], and built several chess-playing machines to test his ideas, including one that moved the pieces with a three-fingered arm.

Some of his other game-playing devices included one that solved the Towers of Hanoi problem, manipulated a Rubik's Cube [Jan 30], and Nimwit which played Nim expertly [Sept 24].

His interest in building machines led him to develop the Minivac 601 Digital Computer Kit [Oct 00], which became very popular in the early 1960's. Less serious inventions included the THROBAC (Thrifty Roman-Numeral Backward-Looking Computer), and the "Ultimate Machine" based on an idea by Marvin Minsky [Aug 9]. It consisted of a plain-looking box with a switch on its side. When the switch was flipped, the lid of the box opened, a mechanical hand reached out, flipped off the switch, then retracted back inside the box.

Shannon and his wife Betty used to enjoy weekend trips to Las Vegas with mathematician Ed Thorp [Aug 14]. To add to their fun, Shannon and Thorp invented a small, concealable computer to help them calculate odds while playing roulette.

Outside of his academic pursuits, Shannon crafted a series of unicycles, trying to see how small they could be before they became impossible to ride. He invented a rocket-powered Frisbee, motorized Pogo sticks, a mind-reading machine, several juggling machines, and a flame-throwing trumpet.

A quote: "I visualize a time when we will be to robots what dogs are to humans, and I'm rooting for the machines."

Elektro and Sparko
April 30, 1939 – Oct. 27, 1940

The 1939-40 New York World's Fair, displayed a number of wonders that seem destined to be commonplace in "the world of tomorrow".

"Elektro the Moto-man" was a seven-foot tall humanoid robot built by Joseph M. Barnett of Westinghouse Electric, covered with an aluminum skin and weighing 265 pounds.

Elektro and Sparko. Photo by Daderot.

Internally, it consisted of a system of camshafts, gears and motors, which meant it was capable of performing 26 movements. These were linked to commands that its operator spoke into a microphone. Each word was converted into electrical impulses which operated relays controlling 11 motors. Some of them allowed his fingers to bend, and a large motor in his torso drove four rubber rollers under each foot, enabling him to move. Another motor worked bellows so that Elektro could 'realistically' smoke a cigarette.

He could also speak about 700 words, recorded as short messsages on a 78-rpm record player.

Although Elektro appeared in the same pavilion as Pedro the Voder [June 5] and the Nimatron [Sept 24], he was the only robot, (and so probably quite lonely). But in 1940, he was joined by Sparko the robot dog which could bark, wag its tail, sit up, and beg for a hot dog. *Newsweek* magazine assured its readers that it wouldn't bite. Sparko was designed by Don Lee Hadley, modelled after his Scotty dog.

After WWII, Elektro toured the US making promotional appearances for Westinghouse, and enjoyed a brief acting career, appearing as "Thinko", in "Sex Kittens Go to College" (1960). During the movie's dream sequence, Elektro turns his head rapidly, his eyes light up, and smoke billows from his neck, while burlesque dancers perform around him.

Today he resides more quietly at the Mansfield Memorial Museum. There have been claims that Sparko's was run over in the 1950's when attracted to car lights, but this seems unlikely since his eyes only lit up.

For more robot men, see [Feb 00], [Feb 24], [March 23], [March 24], [April 16], [July 17], [July 30], [Sept 15], [Nov 11], [Nov 30], [Dec 22].

For more electric/robot dogs, see [May 11], [June 7], [Sept 27], [Nov 18].

Edward Yourdon
Born: April 30, 1944;
USA
Died: Jan. 20, 2016

Yourdon was one of the developers of structured analysis techniques in the 1970's, a co-developer of the Yourdon/Whitehead method for object-oriented analysis and design in the late 1980's, and the Coad/Yourdon methodology in the 1990's.

During the late 1990's, he became widely known for his opinion that Y2K-related [Dec 31] problems might culminate in widespread societal collapse.

Robert Endre Tarjan
Born: April 30, 1948;
Pomona, California

Tarjan is known for his work on graph theory and data structures. Some of his algorithms include Tarjan's strongly connected components algorithm (a stated favorite of Donald Knuth's [Jan 10]), and his Hopcroft-Tarjan planarity test (can a graph be drawn without crossing edges?), the first linear-time algorithm of its type.

His data structures include the splay tree (a self-adjusting binary search tree; co-invented by Tarjan and Daniel Sleator), and the Fibonacci heap (a fast priority queue involving a forest of trees). These offer behind-the-scenes speedups to several important problems.

As a child, Tarjan became interested in mathematics after reading Martin Gardner's [May 22] mathematical games columns in *Scientific American*.

SIAM
April 30, 1952

The Society for Industrial and Applied Mathematics (SIAM) was founded in 1951, but

became a non-profit organization on this day. Rumor has it that SIAM may also stand for "Science and Industry Advance with Mathematics".

It has become the world's largest professional association devoted to applied mathematics, with over 14,500 individual members and over 500 institutional members.

Past presidents have included John Mauchly [Aug 30], J. Barkley Rosser, Gene H. Golub, Gilbert Strang, and Cleve Moler [Aug 17]. Grace Hopper [Dec 9] was an early vice-president.

SIAM is one of the digital trinity of professional societies that computing people tend to join, the others being the ACM [Sept 15] and IEEE [Jan 1].

Digi-Comp II Patented
April 30, 1965

The Digi-Comp II was a mechanical device using marbles and plastic flip-flop gates to perform binary arithmetic. It looked not unlike a pinball machine, and was manufactured by E.S.R., Inc. A patent was filed for its design by John Thomas Godfrey on this day, and granted on July 2, 1968.

A Digi-Comp II. oldcomputermuseum.com.

It proved so popular that Godfrey and E.S.R. later used the same marbles and flip-flops approach to create "Dr. NIM" (1966), a 'computer' capable of playing Nim.

Although the name was very suggestive, the Digi-Comp II wasn't programmable like the Digi-Comp I [Sept 30] which E.S.R. had released in 1963.

Web Made Public
April 30, 1993

At the urging of Tim Berners-Lee [June 8], the directors of CERN [Sept 29] released the source code of the WorldWideWeb [Dec 25] browser and its associated Web protocols into the public domain. As a result, many historians mark this day as the birth of the Web, although others prefer [Dec 25] 1990, when the first Web page went live.

This release came just two months after the announcement that the server implementation of the Gopher protocol [Feb 7] would no longer be free to use. That was enough to produce a rapid shift away from Gopher, towards the Web.

Microsoft iLoo
April 30, 2003

The iLoo, supposedly being developed by Microsoft's MSN division, was a portable toilet (aka a "loo" in the UK) equipped with a wireless keyboard and a height-adjustable screen in front of the seated user. MSN was also reported to be in talks with toilet-paper manufacturers to produce paper with interesting URLs printed on the sheets. The principal use-case for the iLoo would be at events such as music festivals.

On May 12, Microsoft announced that the iLoo concept was a "hoax perpetrated by its British division" calling it an April Fool's joke. On May 13, a second Microsoft press release clarified this by stating that although the project had *not* been a hoax, it had been cancelled because it

would do little to promote the MSN brand.

Incidentally, Microsoft's marketing slogan at the time was "where do you want to go today?"

Unsurprisingly, the iLoo concept wasn't new: Andrew Cubitt had prototyped an 'i-Loo" at Brunel University in 2001.

For more toilet action, see [April 16].

Sasser Worm Released
April 30, 2004

The Sasser worm targeted Windows XP [Oct 25] and Windows 2000 by exploiting a buffer overflow problem. It spread by sending itself to randomly selected IP addresses.

One of the interesting aspects of this attack was that a bug fix had been issued 17 days earlier, but there were still more than a million infections recorded, costing an estimated $18 billion. For example, the British coastguard lost access to its electronic mapping service for a few hours.

On May 7, 2004, a 18-year-old German computer science student was arrested for writing the worm. Authorities were led to him partly through information obtained in response to a bounty [Nov 4] offered by Microsoft.

For more virus nasties, see [Jan 26; March 26; May 5; July 13; July 15; July 17; Sept 5; Oct 26; Nov 21].

Inform 7 Released
April 30, 2006

Inform is a programming language developed by Graham Nelson for writing interactive fiction (IF) games, where the players use text commands to control their characters and investigate the game environment.

Notable language features include rule-based programming, and the ability to infer properties of objects from the way they are used in sentences. For example, the processing of the statement "John wears a hat." creates a "person" called "John", and a "hat" "thing" with the "wearable" property. This is done through the analysis of each sentence based on its grammatical elements, a feature that can be traced back to systems such as ELIZA [Jan 8] and SHRDLU [Feb 24].

Inform was created by Nelson in part to make it easier for hobbyists to create IF games that matched the same high standards as the Zork series [Dec 00] developed by Infocom [June 22]. Indeed, the first Inform compiler generated Z-code that was executed by a Z-machine, both of which were created at Infocom for Zork.

Nelson styles himself as a mathematician and poet, and has been described by *The New York Times* as "ornately literate."

The first IF game was Will Crowther's Adventure [March 11].