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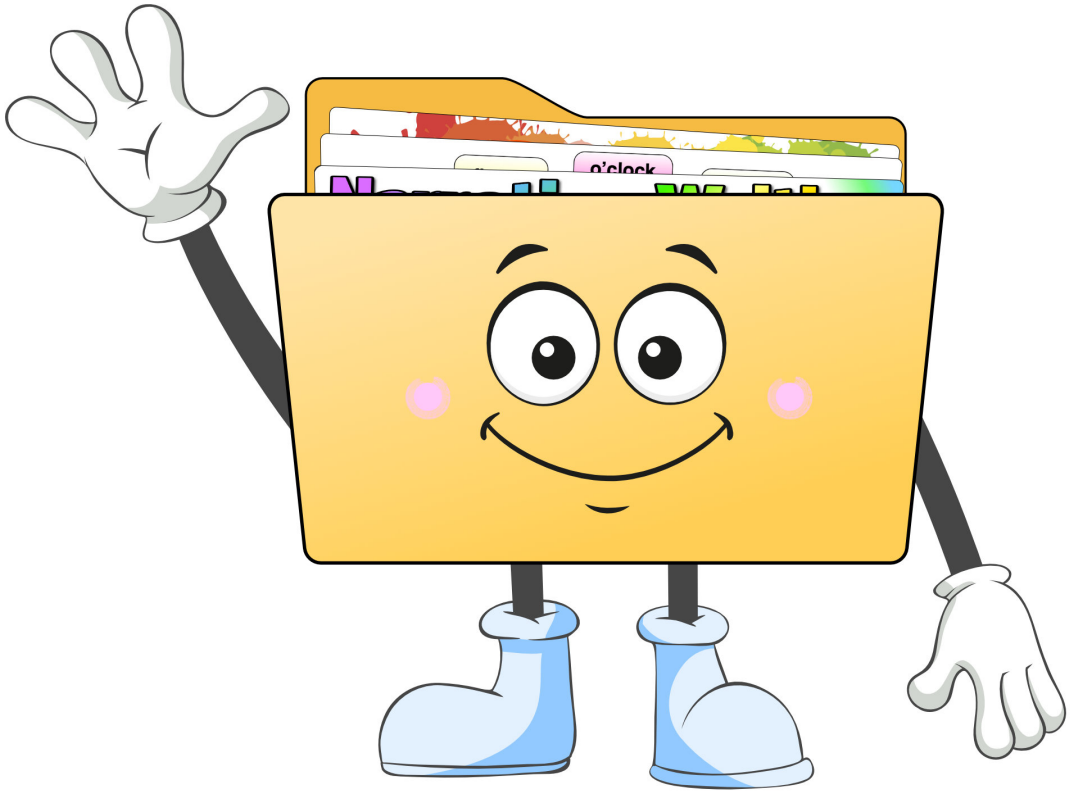

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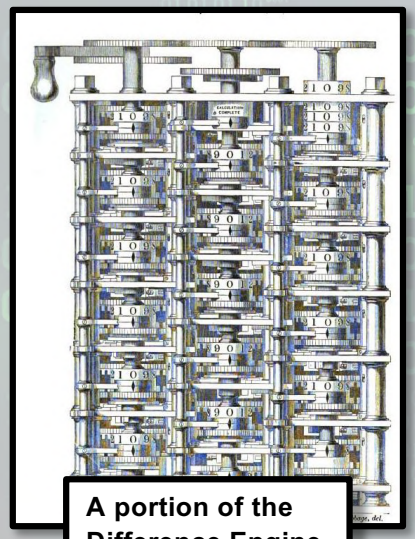
Katy (Teacher, UK)

Charles Babbage

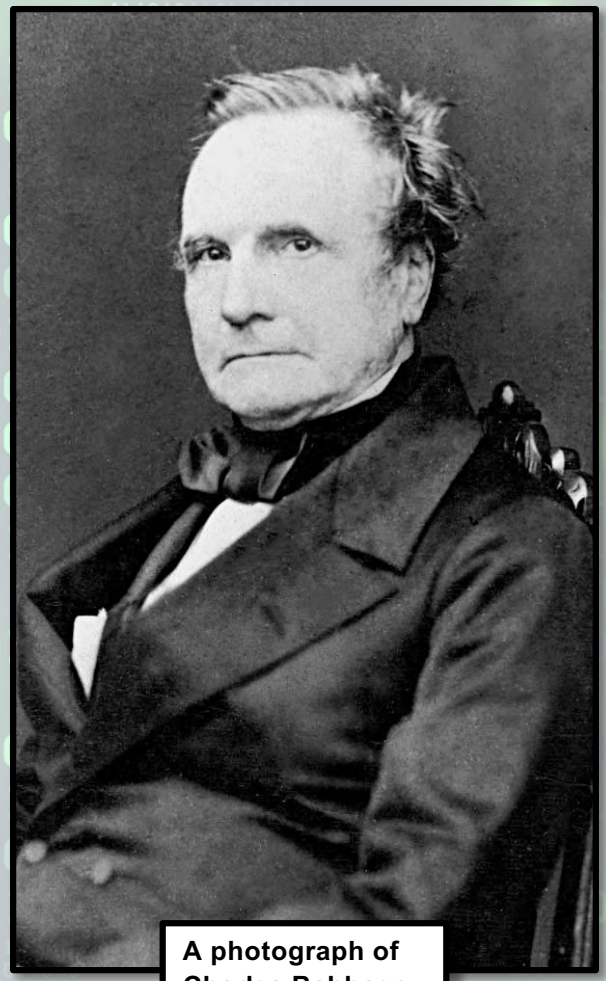
(26th December 1791 – 18th October 1871)

Charles Babbage's family was very wealthy, and he was mainly educated by tutors. He always enjoyed mathematics and even taught himself algebra. When he went to Cambridge University, he found he knew more about maths than his professors. After graduating, he got a job lecturing and became a very successful mathematician, eventually returning to Cambridge to teach.



A portion of the Difference Engine.

Babbage invented three mechanical computers; the Difference Engine, the Analytical Engine and the Difference Engine 2. Unfortunately, all of them proved too expensive and complicated to complete in his lifetime. However, his ideas laid the foundations for the development of modern computing.



A photograph of Charles Babbage.

Ada Lovelace

(10th December 1815 – 27th November 1852)

Ada Lovelace was the daughter of the poet Lord Byron and his wife, Annabella Milbanke Byron. Lovelace did not know her father, as her parents separated around the time of her birth. From a young age, she enjoyed solving mathematical problems. In 1833 she was introduced to Charles Babbage at a party and became interested in his work to develop a mechanical computer.

A painting of Ada Lovelace.

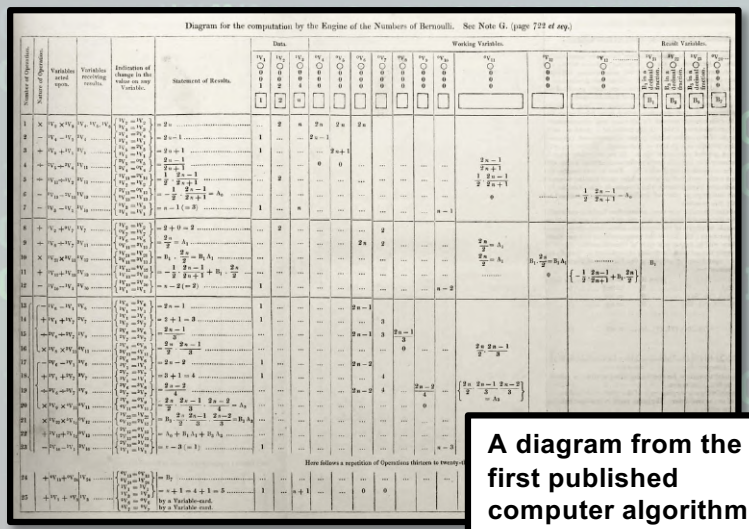


Diagram for the computation by the Engine of the Numbers of Bernoulli. See Note G. (page 722 et seq.)

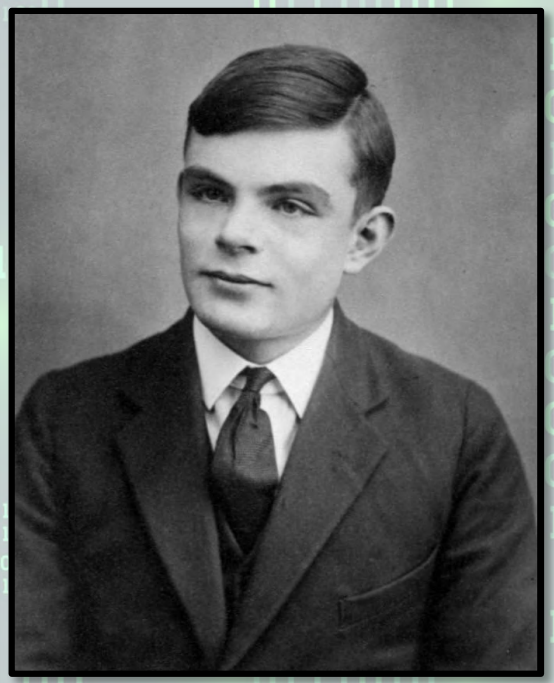
A diagram from the first published computer algorithm.

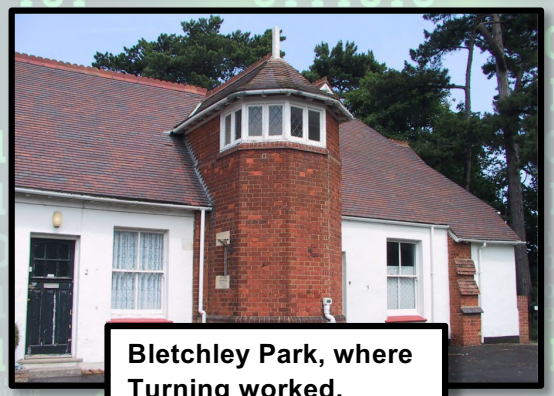
Lovelace's most important work is her notes on an article about Babbage's Analytical Engine. Her notes are three times longer than the original article! She saw massive potential in the machine and wrote what is now recognised as the first computer program.

Alan Turing

(23rd June 1912 – 7th June 1954)

As a child, Alan Turing loved spending time on maths and chess problems. He went to Cambridge University to study maths, and then to Princeton University in the USA. He designed a machine, known as a Turing Machine, that could follow instructions. When the Second World War broke out, Turing went to work at Bletchley Park, where the British were trying to decode encoded messages. His work allowed the Allies to intercept and decode encrypted messages sent by the Axis powers.



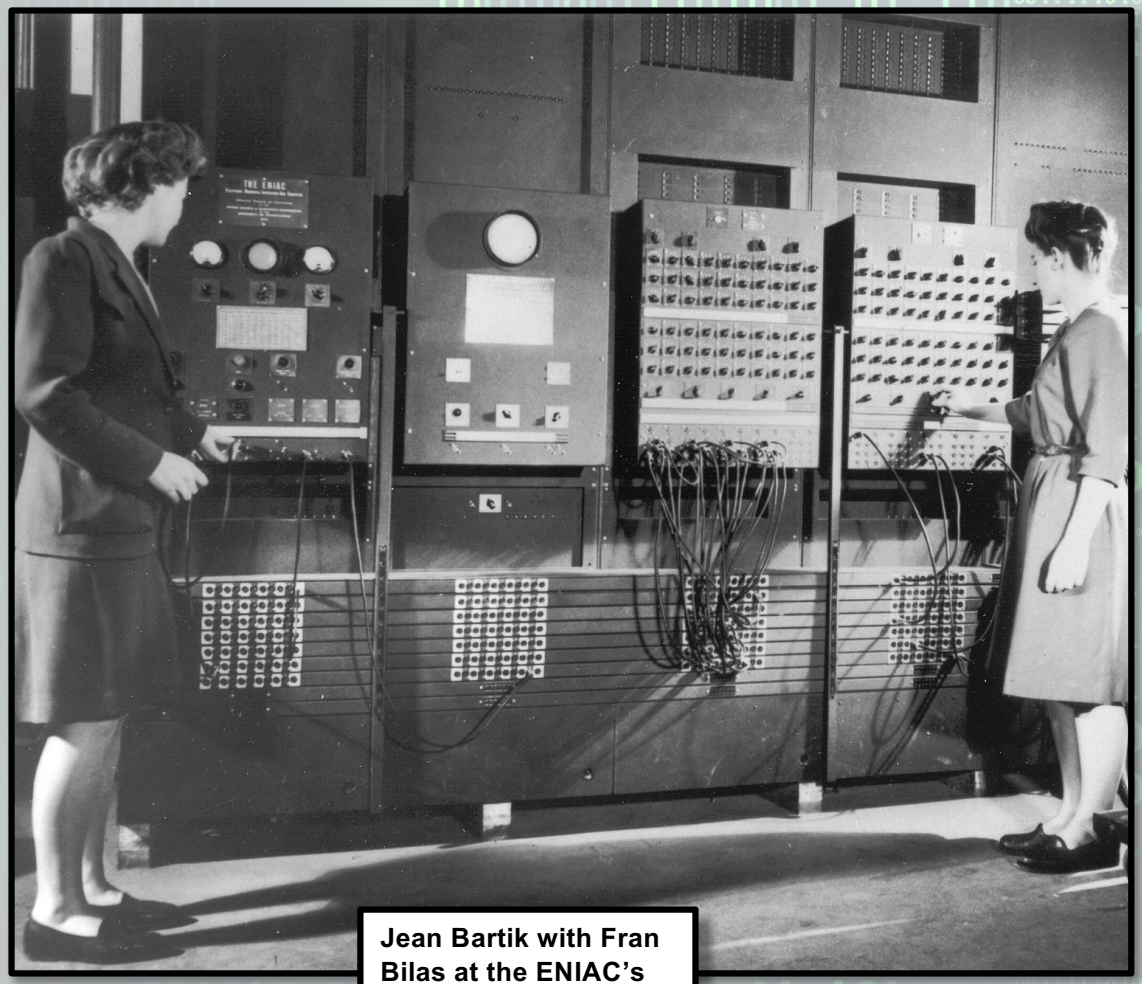


Bletchley Park, where Turning worked.

After the war, Turing designed an Automatic Computing Engine and was one of the first people to think and write about the idea of Articial Intelligence (AI). Despite Turing's enormous contribution to the war effort, he was arrested and persecuted for being gay, which was illegal in Britain at the time. In 2013, 59 years after his death, he was pardoned for this 'crime'.

Jean Bartik

(27th December 1924 – 23rd March 2011)



Jean Bartik with Fran Bilas at the ENIAC's main control panel.

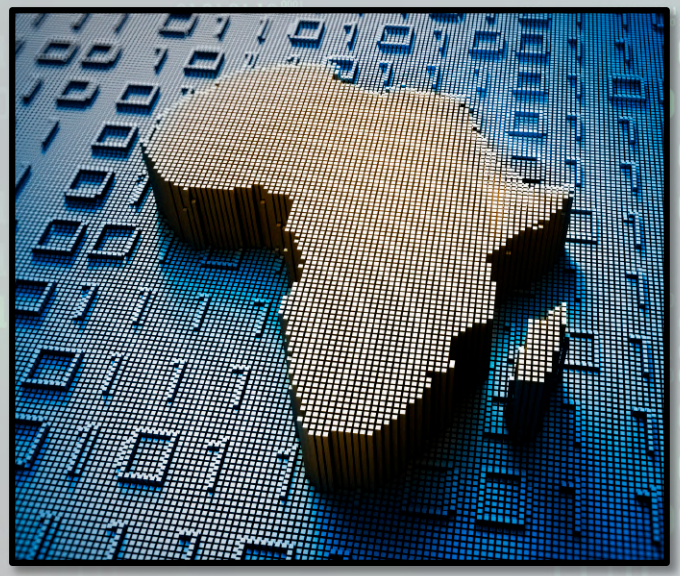
Jean Bartik studied mathematics at college and went to work for the US Army at the University of Pennsylvania. At that time, human "computers" were employed to make calculations, in her case, about gun firing information. When a new machine, called ENIAC (Electronic Numerical Integrator and Computer), was brought in, Bartik was one of the team of six who worked on it. The team taught themselves how to program the computer. She went on to work on improving the ENIAC and on other early computers, which were the first to be able to store information in their memory.

Nii Quaynor

(1948 - Present)

Nii Quaynor was born into a family of scientists and technologists. He went to the USA to study Engineering and computer science. When he returned to Ghana he started a computer science department at the University of Cape Coast.

Internet access in Africa has improved access to education.



Seeing the potential of the Internet, in 1994, he set up the first internet service provider in Ghana and West Africa. He then worked to provide internet access across several countries, including Togo, Nigeria and Ethiopia. For this reason, he is known as the Father of the Internet in Africa.

Steve Wozniak

(11th August 1950 - present)

When he was a student, Wozniak (Woz) invented a "Blue Box", which allowed the user to hack the phone network and get free long-distance calls. He and Steve Jobs sold it to other students. He was also interested in making his own computer and designed one while doing work experience at the computer company Hewlett Packard. The company were not interested in his design. So he and Steve Jobs founded Apple Computer to develop the idea.

Image by Marcin Wichary

Wozinak's 'Blue Box'.

Wozniak worked at Apple until 1981, when an accident in his plane left him with temporary amnesia, and he had to give up work. He returned to university, under a false name to hide his identity, but soon returned to Apple. In 1985 he retired from Apple and devoted his life to philanthropy, mostly to do with young people and technology.

Tim Berners-Lee

(8th June 1955 - present)

Berners-Lee was born into a computing family; his parents had both worked on large computers. He studied at Oxford University and later took a short-term job at CERN, the vast physics laboratory in Switzerland. His job meant that information had to be shared between workers in different places, and Berners-Lee developed a system that connected information between files using hypertext.

Image by Silvio Tanaka

A photograph of Tim Berners-Lee.

When he returned to work at CERN in 1984, he looked at ways for computers to communicate with each other. Although the Internet already existed, it was not easy to use. Berners-Lee's idea was to make it easier for researchers to share information without emailing each other back and forth. This became the first version of the World Wide Web. Berners-Lee has never made any money from this idea because he believes it should be free for everyone.

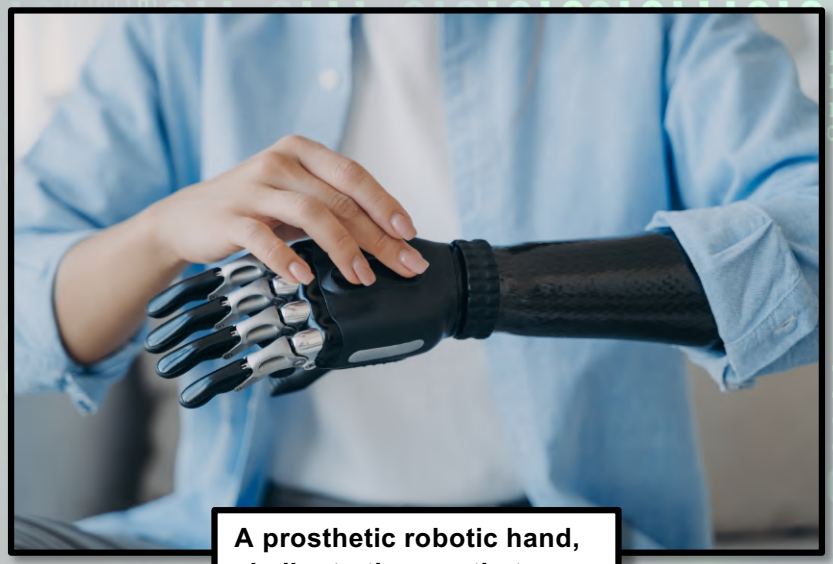
Yoky Matsuoka

(1972 - present)

Image by University of Washington

Yoky Matsuoka

Yoky Matsuoka was born in Japan but moved to the USA aged 16 in the hope of becoming a professional tennis player. However, when she became injured, she had to give up tennis and turned to computer science. She also studied neuroscience (how the brain works) and medicine, and then became a professor.



A prosthetic robotic hand, similar to the one that Matsuoka helped develop.

She worked on developing robotic prosthetics, such as a robotic hand. From there, she worked at Google and Apple, among other Silicon Valley companies. Today she is interested in how technology can make things easier for busy families.

Larry Page and Sergey Brin

(26th March 1973 - present) *(21st August 1973 - present)*

Larry Page and Sergey Brin co-founded Google in 1998 while they were both studying at Stamford University. The pair's idea was to develop a search engine that ranked web pages by how often they were linked to other pages. This system, known as PageRank, became the basis of the Google search engine.

Image by Ehud Kenan

Page and Sergey, founders of Google.

Google has become the most popular search engine.

In 1999 they put the company up for sale at the price of $1 million, but the sale fell through. However, in 2004, the company was worth $27 billion, and its parent company, Alphabet, is worth many times that today, so it is a good thing for them that they did not sell! Today, Google is more than a search engine; it offers services like instant language translation, online maps and Gmail. In addition, Alphabet is developing advanced projects, including self-driving cars, healthcare and Artificial Intelligence.

Mark Zuckerberg

(14th May 1984 - present)

Mark Zuckerberg and his roommates at Harvard University launched the original Facebook as a directory for their fellow students. It was incredibly popular, and the team worked on adding new features and making it available to students at other universities. It was so successful that Zuckerberg dropped out of Harvard to run the company. At first, it was limited to schools and universities, but by 2006 anyone could join.

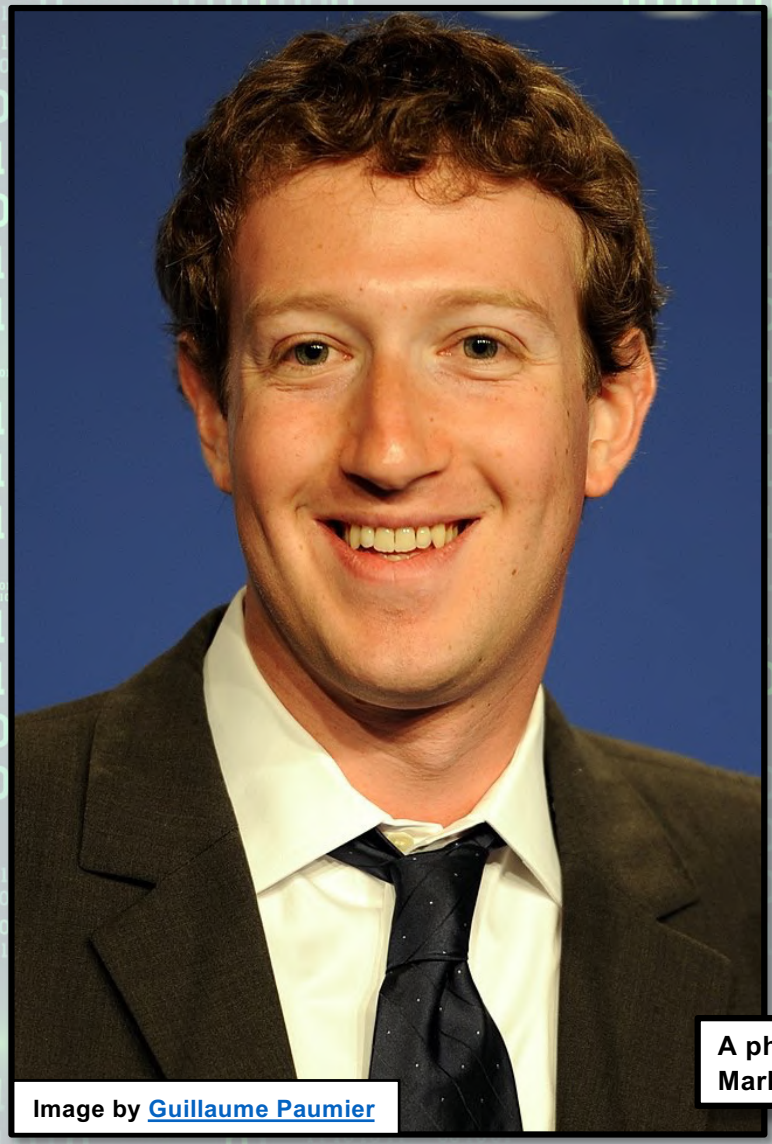


Image by Guillaume Paumier

A photograph of Mark Zuckerberg.

Today, Facebook is part of Meta, which also includes messaging and social media apps such as Instagram and WhatsApp. The company's success has made Zuckerberg one of the richest people in the world.