# Who was Ada?

## Who was Ada Lovelace?

*By Sydney Padua, author of The Thrilling Adventures of Lovelace & Babbage.*

*Read the longer biography of Ada Lovelace by Suw Charman-Anderson, taken from our book, A Passion for Science: Stories of Discovery and Invention, but for a short overview of her life and achievements, read on!*

The woman most often known as 'Ada Lovelace' was born Ada Gordon in 1815, sole child of the brief and tempestuous marriage of the erratic poet George Gordon, Lord Byron, and his mathematics-loving wife Annabella Milbanke.

Fearing that Ada would inherit her father's volatile 'poetic' temperament, her mother raised her under a strict regimen of science, logic, and mathematics. Ada herself from childhood had a fascination with machines- designing fanciful boats and steam flying machines, and poring over the diagrams of the new inventions of the Industrial Revolution that filled the scientific magazines of the time.

At the age of 19 she was married to an aristocrat, William King; when King was made Earl of Lovelace in 1838 his wife became Lady Ada King, Countess of Lovelace. She is generally called Ada Lovelace, which is a little incorrect but saves confusion! She had three children.

in 1833, Lovelace's mentor, the scientist and polymath Mary Sommerville, introduced her to Charles Babbage, the Lucasian Professor of Mathematics who had already attained considerable celebrity for his visionary and perpetually unfinished plans for gigantic clockwork calculating machines. Charles Babbage and Ada Lovelace both had somewhat unconventional personalities and became close and lifelong friends. Babbage described her as "that Enchantress who has thrown her magical spell around the most abstract of Sciences and has grasped it with a force which few masculine intellects could have exerted over it," or an another occasion, as "The Enchantress of Numbers".

## The Analytical Engine



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Ada Lovelace Day started with a simple promise on Pledgebank:

"I will publish a blog post on Tuesday 24th March about a woman in technology whom I admire but only if 1,000 other people will do the same."
— Suw Charman-Anderson

Lovelace was deeply intrigued by Babbage's plans for a tremendously complicated device he called the Analytical Engine, which was to combine the array of adding gears of his earlier Difference Engine with an elaborate punchcard operating system. It was never built, but the design had all the essential elements of a modern computer.

In 1842 Lovelace translated a short article describing the Analytical Engine by the italian mathematician Luigi Menabrea, for publication in England. Babbage asked her to expand the article, "as she understood the machine so well". The final article is over three times the length of the original and contains several early 'computer programs,' as well as strikingly prescient observations on the potential uses of the machine, including the manipulation of symbols and creation of music. Although Babbage and his assistants had sketched out programs for his engine before, Lovelace's are the most elaborate and complete, and the first to be published; so she is often referred to as "the first computer programmer". Babbage himself "spoke highly of her mathematical powers, and of her peculiar capability — higher he said than of any one he knew, to prepare the descriptions connected with his calculating machine."

Ada Lovelace died of cancer at 36, a few short years after the publication of "Sketch of the Analytical Engine, with Notes from the Translator".

The Analytical Engine remained a vision, until Lovelace's notes became one of the critical documents to inspire Alan Turing's work on the first modern computers in the 1940s.

Her thwarted potential, and her passion and vision for technology, have made her a powerful symbol for modern women in technology.

*Read some of the primary documents by or about Ada that are online, or read the longer biography of Ada Lovelace, taken from our book, A Passion for Science: Stories of Discovery and Invention.*

Ada Lovelace Day, an international day celebrating the achievements of women in science, technology, engineering and maths, is on the second Tuesday of October every year.


### With thanks to our partners

Ada Lovelace Day is dependent on the generosity of its partners, volunteers and supporters for survival. We would like to thank the following organisations for their support of Ada Lovelace Day and women in STEM.

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