



Ada Lovelace





- If you imagine a computer programmer, somebody who works at the computer, writing a program, do you imagine a man or a woman?
- I guess you would say: a man.
- Why?
- Because many people think that women are not very technological, certainly not as much as men.
- But the world's first programmer was a **WOMAN**.





Call me Ada Lovelace

- The Daughter of a Poet
- My Accomplishment? Math.
- Out in Society
- Ada & Babbage
- The Analytical Engine
- Ada's contribution
- Ada's «note G»
- Together at Last





The Daughter of a Poet

- Daughter of Annabella Milbanke, a successful mathematician, and acclaimed poet George Gordon Byron.
- Combined unfortunate marriage.
- She was 5 weeks when her mother left her husband.
- Ada grew up without ever meeting her father.
- Chose as surname Lovelace to distance herself from her father.
- Byron died when she was only eight.





My Accomplishment? Math.

- Her education was mostly focused on Mathematics and Science.
- It was Lady Byron herself that introduced Ada to Mathematics.
- At the age of 12 she wrote, *Flyology*, a study on:
 1. Bird flight
 2. Wing-to-body ratio
 3. Material and steam to fly
- Ada was taught university level Math
- Her tutor proclaimed that if a young male student had her skills, *“they would have certainly made him an original mathematical investigator, perhaps of first-rate eminence.”*



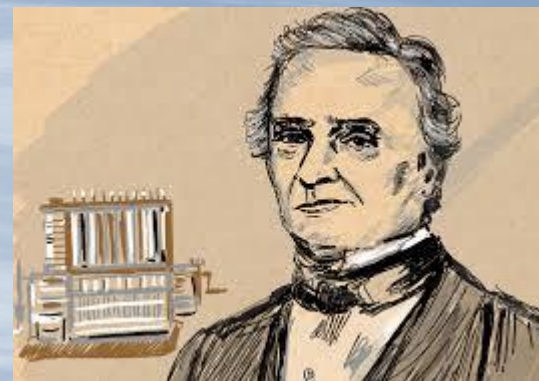


Out in Society

- Thanks to her wealth and station Ada had the best tutors.
- Scottish scientist Mary Sommerville was one of them.
- She introduced her to British inventor Charles Babbage.
- Mary will also introduce her to William King, who will become her husband.
- Her husband did not limit her academic ambitions:

“I now read Mathematics every day and am occupied in Trigonometry and in preliminaries to Cubic and Biquadratic Equations. So you see that matrimony has by no means lessened my taste for these pursuits, nor my determination to carry them on.”

- The couple had three children



Ada & Babbage

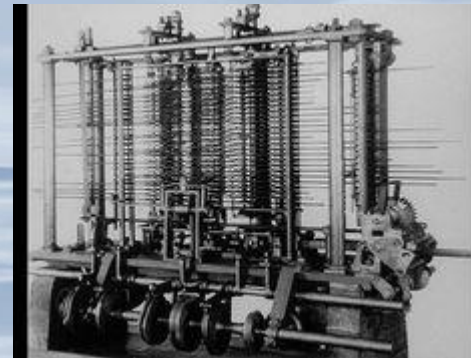
- Ada and Charles Babbage became close colleagues.
- Babbage's «Difference Engine»:
 1. Mathematical solution produced by the pulling of gears and levers ..
 2. First model for the automatic calculator.
- Ada studied and translated Babbage's work to the public.
- Babbage called Ada : «the enchantress of numbers».





The Analytical Engine

- The Analytical Engine is referred to as the world's first computer.
- It created operation cards with patterns that could be inserted into it.
- These cards would carry codes of instructions that enabled the machine to perform various calculations.
- The Analytical Engine was a general purpose computer, not only computation.
- It could be given data and run operations in sequence, had memory and a primitive printer.





ADA's contribution

- **TRANSLATED**: the Italian mathematician Luigi Menabrea's article on the Analytical Engine.
- **ADDED** a set of notes to the article, which were three times longer than the article itself
- **EXPLAINED** how the Analytical Engine differed from the original Difference Machine.
- **INCLUDED**(in Note G) a method for calculating a sequence of Bernoulli numbers using the Analytical Engine
- Based on this work, Lovelace is now considered by many to be the **first computer programmer**.



Ada's «note G»: the first published computer algorithm

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Outcomes

- Ada's work with Babbage and the old analytic machine were rediscovered by Alan Turing
- The U.S. Department of Defence named its high-order computer programming language “Ada” in her honour.
- Every second Tuesday of October, Ada Lovelace Day is celebrated to honour women in science, technology, engineering, and mathematics.



Together at Last

- She died very young, at the age of 36, the same age of her father.
- She wanted to be buried next to her father's tomb.





Thank you for your attention



