Ada Lovelace: Pioneer of Modern Computer Science [B1]

Figlia legittima di Lord Byron, dedicò la sua breve vita allo studio della matematica, un campo poco esplorato dalle donne dell'epoca, e realizzò il primo programma informatico della storia.

Ada Lovelace, widely considered to be the world's first computer programmer, was born Augusta Ada Byron on 10 December 1815. Her parents, Anne Isabella Milbanke and the famous poet Lord Byron, separated one month later. A celebrity from birth, Ada never met her father, who died in Greece when she was just eight.

UNUSUAL EDUCATION

Ada's mother was determined to protect her daughter from Byron's wild reputation and what she saw as his disorderly, possibly insane poetical mind. She decided a strict education based on the sciences, maths and logic — very unusual for women in those days — was the solution. Ada showed a real talent for mathematics. Aged just twelve, she **drew up** plans for a flying machine, using **steam** for power.

IMPORTANT ENCOUNTER

On 5 June 1833, Ada made her debut in London society at a party held by the eccentric inventor and mechanical engineer Charles Babbage, now known as "the father of computers." In one of the most important encounters in modern history, Babbage explained to the **entran**ced Ada the workings of the Difference Engine, one of the world's earliest calculators. Babbage and Ada started a friendship and collaboration that would last the rest of her short life.

ANALYTICAL ENGINE

Ten years later, Ada was equally **entran**ced by Babbage's new machine, the Analytical Engine, whose design had the essential elements of a modern computer. She t**ran**slated an article on the machine by the Italian mathematician and engineer Luigi Menabrea, which was published in 1843 in an English science **journal**. She also added her own notes and annotations, which **ran** to three times the length of the original article. Ada showed her genius when she included what many believe to be the **first-ever** computer programme, an algorithm designed **to be carried out** by a machine.

PROCESSING INFORMATION

With incredible **foresight**, she was the first person to see the creative potential of the 'Engine', explaining how it could do much more than just calculate numbers: with the right programming and inputs, it could potentially create music and art. In a **groundbreaking** thought, she realised it could process notes, letters and images, using a chain of **punched cards**. Ada called it the "science of operations" — in other words, computing. According to the computing historian Doron Swade, what Lovelace saw was "that numbers could represent entities other than quantity. [...] If those numbers represented other things — letters, musical notes, then the machine could manipulate symbols [...] That is the fundamental t**ran**sition from calculation to computation." Ada herself wrote: "A new and powerful language is developed for the future use of analysis."

UNRECOGNISED GENIUS

Ada's contributions to computing were simply not recognised at the time. In fact, they were so far ahead of their time that nearly one hundred years had to pass before their real value was understood. Her notes would inspire Alan Turing, the father of modern computer science, in his work on the first modern computers in the 1940s. Ada's mother controlled her daughter's life until the very end. Towards the **close** of her life, Ada became an atheist. After she was diagnosed with cancer, her mother refused to give her a **painkiller**

(morphine) until she converted back to Christianity. She also prevented Ada's friends from seeing her, while Ada's husband deserted her after she made a confession to him (what she said remains unknown.) The computing genius died aged just thirty-six on 27 November 1852.

Glossary

- **to be carried out** = realizzare
- **foresight** = previsione
- **groundbreaking** = innovativo, rivoluzionario
- **close** = fine
- **painkiller** = analgesico, calmante
- **ran** = estendersi
- **first-ever** = primo nella storia
- **entranced** = estasiata
- **journal** = rivista
- **punched cards** = schede perforate
- **drew up** = disegnare
- **steam** = vapore