Father of Computing - Charles Babbage

Charles Babbage is Mathematician, philosopher and Computer Scientist. Charles Babbage was born in London on 26th of December 1791. He was son of Benjamin Babbage. Babbage family decided to move into the old Rowden's house, located in East Teignmouth in 1808 and Benjamin Babbage became a warden of the nearby church of St. Michael.

Charles get instruction from numerous elite schools and teachers during the course of his elementary education because his father was a rich man. He moved to a country school to recover from a dangerous fever. Then he joined King Edward VI Grammar School in South Devon, a thriving comprehensive school that's still operative today, but his fragile health status forced him back to private teaching for a period. Then, he finally joined a 30-student closed number academy managed by Reverend Stephen Freeman. Babbage used to study mathematics by himself through academy library, and learned to love it. He had two more personal tutors after leaving the academy. One was a clergyman of Cambridge, and the other one was an Oxford tutor who teaches Babbage the Classics.

When, in 1812, Babbage transferred to Peter's house, Cambridge, he was the best mathematician but he failed to graduate with honors. He received an honorary degree later, without even being examined in 1814.

Charles Babbage married Georgiana Whitmore at St. Michael's Church in Teignmouth, Devon in 1814. They lived in tranquility at 5 Devonshire Street, Portland Place, London. Tragically, Charles' father, his wife and one of his sons all died in 1827 only 3 of them were left out of 8.

In Babbage's times there was a really high error rate in the calculation of math tables. Babbage planned to find a new method that could be used to make it automatically by removing the human error factor and this idea started to tickle his since 1812. Three different elements influenced him in this decision and those where he disliked untidiness and imprecision, he was very able with logarithmical tables, he was inspired from an existing work on calculating machines produced by W. Schickard, B. Pascal, and G. Leibniz. He discussed the main principles of a calculating engine in a letter he wrote to Sir H. Davy in the early 1822.

Babbage presented something that he called "Difference engine" to the Royal Astronomical Society on 14th of June 1822 and in a paper label as "Note on the application of machinery to the computation of astronomical and mathematical tables." It was able to calculate polynomials by using a numerical method called the differences method. The Society approved the idea and the government granted him £1500 to construct it in 1823. Charles Babbage converted one of his rooms in home to a workshop and hired Joseph Clement to supervise construction of the engine. Every part had to be formed by hand using custom machine tools and many of its designed by Babbage. He had extensive tours of industry to better understand manufacturing processes. Based on these trips and his experience with the difference engine, Babbage published on the Economy of Machinery and Manufacture in 1832. It was the first publication on what we would now call operations research.

Work had already taxed Babbage heavily and he was on the edge of a breakdown. John Herschel and several other friends convinced Babbage to take a trip to Europe to recuperate. He passed through the Netherlands, Belgium, Germany, and Italy visiting universities and manufacturing facilities. In Italy he learned he had been named the Lucasian Professor of

Mathematics. He initially wanted to turn down the position but several friends convinced him to accept.

While he was separated from the difference engine, Babbage began to think about an improved calculating engine. He tried to build a machine that would be programmable to do any kind of calculation other than polynomial equations between 1833 – 1842. The first breakthrough came when he redirected the machine's output to the input for further equations. He described this as the machine "eating its own tail ". It did not take much longer for him to define the main points of his Analytical Engine.

The mature analytical engine used punched cards adapted from the Jacquard loom to specify input and the calculations to perform. The engine consisted of two parts, the mill and the store. The mill, analogous to a modern computer's CPU, executed the operations on values retrieved from the store, which we would consider memory. It was the world's first general-purpose computer.

Babbage won the Gold Medal of the Royal Astronomical Society "for his invention of an engine for calculating mathematical and astronomical tables" in 1824.

From 1828 to 1839 Babbage was Lucasian professor of mathematics at Cambridge. He is the Astronomical Society in 1820 and the Statistical Society in 1834.

Babbage also invented the pilot (also called a cow-catcher), the metal frame attached to the front of locomotives that clears the tracks of obstacles in 1838. He also performed several studies on Isambard Kingdom Brunel's Great Western Railway.

Charles Babbage died at age 79, on 18th Octomber1871 and he was named as the Father of the Computer.