**Charles Babbage**

The Analytical Engine

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Charles Babbage is often referred as the "father of computing" because of his invention of the analytical engine, a prototype of the Difference Engine which was completed far after his death. The Difference Engine had features typical of today's computers. He was the first person to devise a mechanism for the storage of information into a computer, what we now call "memory." This machine was the first mechanical calculator to be automated. The machine was steam driven.

Charles Babbage was born in London on December 26, 1792, the son of Benjamin Babbage, a London banker. As a youth Babbage was his own instructor in algebra, of which he was passionately fond, and was well-read in the continental mathematics of his day. Upon entering Trinity College, Cambridge, in 1811, he found himself far in advance of his tutors in mathematics. With several of his fellow scientists, Babbage founded the Analytical Society for promoting continental mathematics and, reforming the mathematics of Newton then taught at the university.

In his twenties Babbage worked as a mathematician, principally in the calculus of functions. He was elected a Fellow of the Royal Society, in 1816, and played a prominent part in the foundation of the Astronomical Society (later Royal Astronomical Society) in 1820. It was about this time that Babbage first acquired the interest in calculating machinery that became his consuming passion for the remainder of his life.

Throughout his life Babbage worked in many intellectual fields typical of his day, and made contributions that would have assured his fame irrespective of the Difference and Analytical Engines. Prominent among his published works are A Comparative View of the Various Institutions for the Assurance of Lives (1826), Table of Logarithms of the Natural Numbers from 1 to 108, 000 (1827), Reflections on the Decline of Science in England (1830), On the Economy of Machinery and Manufactures (1832), Ninth Bridgewater Treatise (1837), and the autobiographical Passages from the Life of a Philosopher (1864). Babbage occupied the Lucasian chair of mathematics at Cambridge from 1828 to 1839. He played an important role in the establishment of the Association for the Advancement of Science and the Statistical Society (later Royal Statistical Society).

In creating his engines, he had to create special tools. He utilized the services of a skilled engineer and a crew of workmen. The English government recognized that his invention could be of value to British industry. The British government financed his efforts for almost two decades.

Despite his many achievements, the failure to construct his calculating machines, and in particular the failure of the government to support his work, left Babbage in his declining years a disappointed and embittered man. He died at his home in Dorset Street, London, on October 18, 1871.