



## Introduction

The following Classics item has been excerpted from the autobiography '*Passages from the Life of a Philosopher*' by Charles Babbage written in 1864. In this remarkable piece Charles Babbage has proposed the idea of a programmable computer almost a century before its advent. He has ingeniously proposed the use of punched cards used in Jacquard loom to write programs and feed data. What is remarkable is his idea of a program library for common functions. He also understood space-time tradeoff in programming. He was way ahead of his time as mechanical systems of the day did not have enough precision to implement his ideas. It was also very expensive with the result that his proposals remained unimplemented and later forgotten. The write-up itself is extremely interesting particularly because it conveys the excitement of an inventor in the process of conceptualizing his invention.

V Rajaraman

## OF THE ANALYTICAL ENGINE

*Charles Babbage*

*Man Wrongs, and Time Avenges*  
*Byron – The Prophecy of Dante*

To describe the successive improvements of the Analytical Engine would require many volumes. I only propose here to indicate a few of its more important functions, and to give to those whose minds are duly prepared for it some information which will remove those vague notions of wonder, and even of its impossibility, with which it is surrounded in the minds of some of the most enlightened.

To those who are acquainted with the principles of the Jacquard loom, and who are also familiar with analytical formulæ, a general idea of the means by which the Engine executes its operations may be obtained without much difficulty. In the Exhibition of 1862 there were many splendid examples of such looms.

It is known as a fact that the Jacquard loom is capable of weaving any design which the imagination of man may conceive. It is also the constant practice for skilled artists to be employed by manufacturers in designing patterns. These patterns are then sent to a peculiar artist, who, by means of a certain machine, punches holes in a set of pasteboard cards in such a manner that when those cards are placed in a Jacquard loom, it will then weave upon its produce the exact pattern designed by the artist.

\* For full text of autobiography of Charles Babbage see: <http://www.fourmilab.ch/babbage/lpae.html>