



UNIT 7. Turing Machines

A Turing Machine is a hypothetical device that manipulates symbols on a input tape according to a table of rules. Despite its simplicity, a Turing Machine can be adapted to simulate the logic of any computer algorithm, and is particularly useful in explaining the functions of a CPU inside a computer. The Turing Machine was invented in 1936 by Alan Turing, who called it an "a-machine" (automatic machine). The Turing machine is not intended as practical computing technology, but rather as a hypothetical device representing a computing machine. Turing machines help computer scientists understand the limits of mechanical computation. They recognize Type-0 Languages.

The main objectives of Unit 7 are:

- To introduce Type-0 languages.
- To define a Turing Machine.
- To know the main variations of Turing Machines.
- To learn what is a Universal Turing Machine.
- To know additional issues when designing a Turing Machine.

