

General Introduction

Theory of Computation

- Theory of Computation is a branch of computer science and Mathematics that focuses on the logic of computation and how different problems are solved using algorithms and the efficiency of the solutions.
- Theory of Computation is very important as it helps in writing efficient algorithms that operate on computer devices, research and development of programming languages and in compiler design and construction that is efficient. The primary goal of creating this theory was to broaden approaches for explaining and analysing the active performance of discrete systems.
- The knowledge of Theory of Computation is critical for its applications, which include the construction of intelligent technology, cognitive psychology, as well as diverse models of computing such as algorithm, compiler, and VLSI design, etc

Types of theory of computation

- **Automata theory**
- **Formal language**
- **Computability theory**
- **Complexity theory**

Why study Theory of computation?

This course aims to provide mathematical foundation, for building compilers, parsers, and the design of programming language.

(Grammar and Automata)