

Introduction to the Theory of Computation

Chapter 1: The Theory of Computation

1.1 The Theory of Computation

The diagram illustrates the hierarchy of computational models. At the top, 'Computational Model' branches into four categories: 'Turing Machine', 'Pushdown Automaton', 'Finite Automaton', and 'Regular Expression'. Below these, arrows indicate simulation capabilities: 'Turing Machine' can simulate 'Pushdown Automaton', 'Finite Automaton', and 'Regular Expression'. 'Pushdown Automaton' can simulate 'Finite Automaton' and 'Regular Expression'. 'Finite Automaton' can simulate 'Regular Expression'. At the bottom, 'Turing Machine' is also shown to simulate 'Pushdown Automaton', 'Finite Automaton', and 'Regular Expression'.

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