

Models of Computation

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Rosen 5th ed., Ch. 11.1

Modeling Computation

- An algorithm:
 - A description of a computational procedure.
- Now, how can we model the computer itself, and what it is doing when it carries out an algorithm?
 - For this, we want to model the abstract process of *computation* itself.

Early Models of Computation

- Recursive Function Theory
 - Kleene, Church, Turing, Post, 1930's
- Turing Machines = Turing, 1936
- RAM Machines – von Neumann, 1940's
- Cellular Automata – von Neumann, 1950's
- Finite-state machines, pushdown automata
 - various people, 1950's
- VLSI models – 1970s
- Parallel RAMs, etc. – 1980's