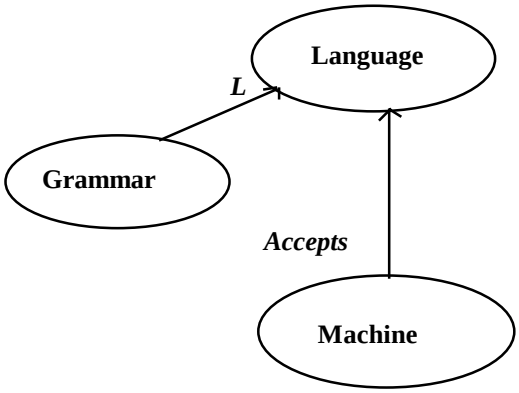
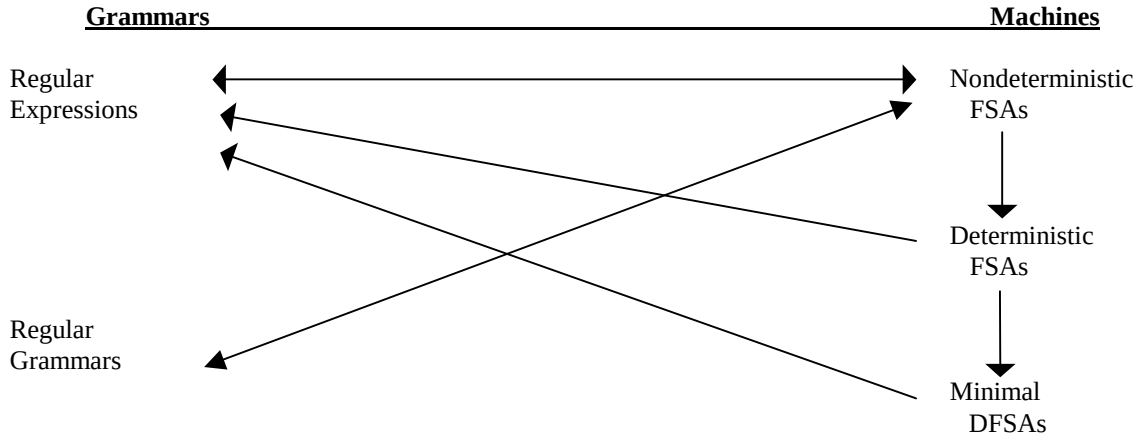
Summary of Regular Languages and Finite State Machines

Grammars, Languages, and Machines



Regular Grammars, Languages, and Machines

Most interesting languages are infinite. So we can't write them down. But we can write down finite grammars and finite machine specifications, and we can define algorithms for mapping between and among them.



What Does "Finite State" Really Mean?

There are two kinds of finite state problems:

- Those in which:
  - Some history matters.
  - Only a finite amount of history matters. In particular, it's often the case that we don't care what order things occurred in.

  Examples:
    - Parity
    - Money in a vending machine
    - Seat belt buzzer
- Those that are characterized by patterns.

  Examples:
    - Switching circuits:
      - Telephone
      - Railroad
    - Traffic lights
    - Lexical analysis
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