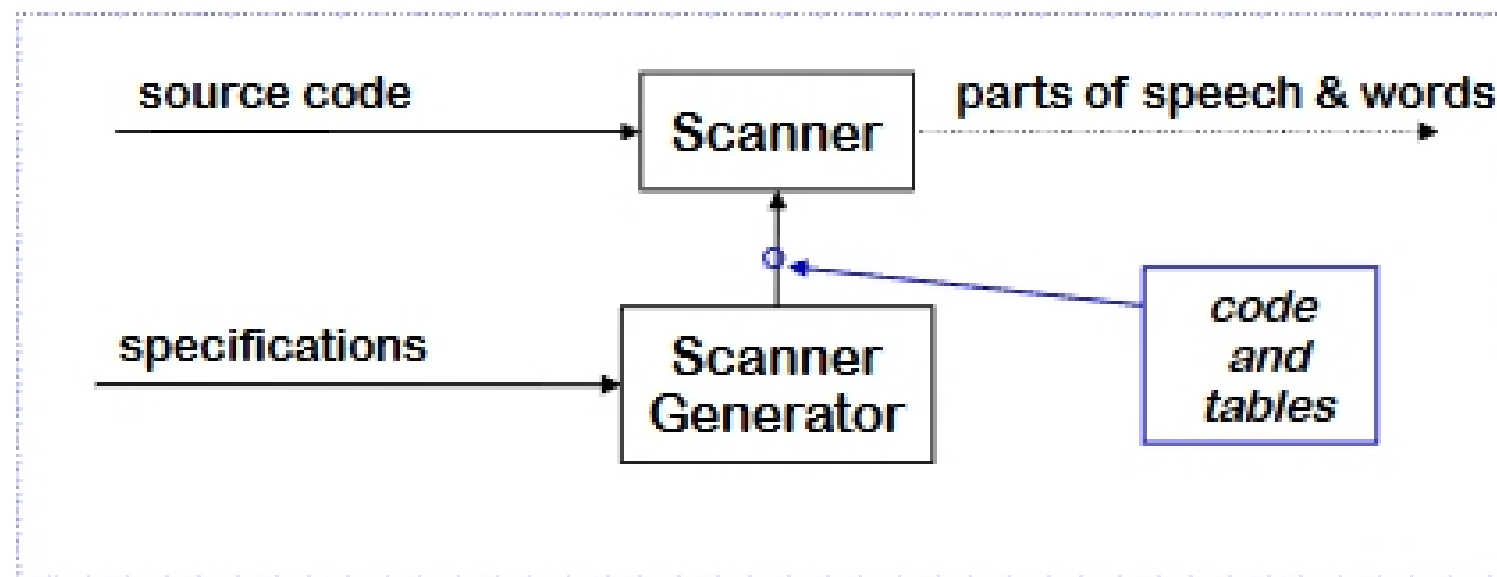




Lexical Analysis — Part II: Constructing a Scanner from Regular Expressions

Quick Review



Previous class:

- The scanner is the first stage in the front end
- Specifications can be expressed using regular expressions
- Build tables and code from a DFA

Goal



- We will show how to construct a finite state automaton to recognize any RE
- This Lecture
 - Convert RE to an **nondeterministic finite automaton (NFA)**
 - Requires ϵ -transitions to combine regular subexpressions
 - Convert an NFA to a **deterministic finite automaton (DFA)**
 - Use Subset construction

Next Lecture

- Minimize the number of states
 - Hopcroft state minimization algorithm
- Generate the scanner code
 - Additional code can be inserted