ECE251: Programming Languages & Translators Fall 2010

Lecture 7 — September 23, 2010

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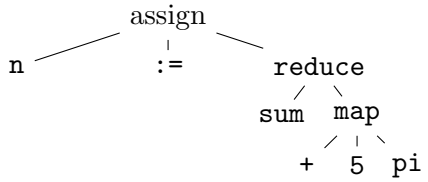
Parsing

We now return to regularly-scheduled material, namely parsing. Parsing aims to convert strings of tokens to parse trees. For instance,

```
n := reduce sum map + 5 pi
```

corresponds to



(and there is also a corresponding Abstract Syntax Tree).

Goals

I expect you to:

- be able to write a context-free grammar for a language;
- be able to successfully feed this CFG to a parser generator:
  - be able to eliminate left-recursion;
  - be able to fix shift-reduce conflicts.
- be able to create a parser using Earley's algorithm (and understand when you wouldn't)
- be able to use parser actions to implement an interpreter or generate an AST.