PPL 2/26

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February 26, 2020

LL vs LR Parsing

LL

- Assumes string was produced via left-most derivation
- Top down discovery
- In general, moves down and right
- Starts from the root and moves downwards

LR

- Assumes the input string was produced via a right-most derivation
- Bottom up discovery
- In general, moves up and left
- The last symbol derived is on the leftmost side of the string. . . ?
- He's talking about LR parsing and how to do it but I'm kinda lost
  - It seems like one of those things that you could teach yourself in a handful of minutes but the graphs and how fast he's talking make my brain stop working

Semantic Analysis

- Syntax is referring to form and structure, semantics is referring to meaning
- Relevance allows for enforcing rules and provides information to produce equivalent programs
- Why do we need it?
  - We need rules to provide the structure of a list
  - We can't determine the length of a list by the rule alone
  - Function definitions and calling requires a specific number of parameters
- Things that need to be considered in semantic analysis:
  - Anything that needs counting or accumulating
  - Anything that is nested
  - Putting things together that appear separated in time/space
- There are static and dynamic rules
  - static: add code for checking, array bounds checking
  - dynamic: division by zero, accessing valid array positions
  - Line between the two can be fuzzy depending on language and implementation