Plan for Today

Meggy Java compiler for PA3

Regression testing

Expressions in MeggyJava

Syntax-directed expression evaluation
  – example
  – but what about grammar ambiguity?

Ambiguity and examples of removing it
  – modifying the grammar
  – using JavaCUP precedence and left and right keywords

Overview of PA3

Building a lexer with JLex

Building a parser with JavaCUP

Use syntax-directed eval of constant integer and byte expressions.

Use syntax-directed translation to generate AVR code.

Create regression testing framework and show to instructor in recit.
Regression Testing

Main ideas
– Automated testing framework
– When modify program, test that previous functionality works
– Be able to easily add test cases for new functionality

Examples you have written?

PA3
– MeggyJava compiler
– Meggy java-only interface
– Meggy AVR simulator

Ideas?

Subset of MeggyJava Expression Grammar

```
Subset
Expression ::= Expression ("+" | "+" | "+") Expression
| "(" "byte" ")" Expression
| <INTEGER_LITERAL>
| <COLOR_LITERAL>
| "(" Expression ")"
```
Parse Tree Example

Semantic Rules for Expression Example (JavaCUP)
Semantic Rules for Expression Example (book notation)

Another valid parse tree