CS352 PL

Syntax vs Semantics = Shape vs Meaning

Different parts of code

* Declarations
  + Variable: int i = 42;
  + Type: class pair {public int x; public int y;}
  + Function: public double cos(double x) { … }
* Expressions – produce a value
  + a+b | cos(3.14) | myPair.x
* Statements - action
  + a += 7; | System.out.println(“Hello”);

Grammars

* Tokens – each individual piece
  + int myVar = x ;

**Parsing Expression Grammars (PEG)**

**Ex:** IfStmt = “if” “(“ Expr “)” Stmt

-Terminals: fixed strings – “if”, “+”, etc.

-Nonterminals: named constructs – IfStmnt, Expr

-Parsing Expressions

-Rules – each nonterminal has exactly one

-Start symbol

For | symbol – is OR but short circuits