

Java Language Grammar

Program \rightarrow MainClass ClassDecl^{*}

MainClass \rightarrow **class** id { **public static void main** (String [] id) { Stm } }

ClassDecl \rightarrow **class** id [**extends** id] { VarDecl ^{*} MethodDecl ^{*} }

VarDecl \rightarrow Type id ;

MethodDecl \rightarrow

public Type id (Formallist) { VarDecl ^{*} Stm ^{*} **return** Exp ; }

Formallist \rightarrow Type id (, Type id)^{*} | ϵ

Stm \rightarrow **if** (Exp) Stm **else** Stm | **while** (Exp) Stm

| **System.out.println** (Exp) | **id** [[Exp]] = Exp ; | { Stm^{*} }

Type \rightarrow **int** [] | **boolean** | **int** | **id**

Exp \rightarrow Exp (**&&** | **<** | **+** | **-** | *****) Exp | **!** Exp | **new int** [Exp] | **new id** () | Exp [Exp] | Exp.**length** | Exp.**id** ([Exp (. Exp)^{*}]) | **true** | **false** | **this** | **num** | **id** | (Exp)