**Context Free Grammar (CFG)**

1. Terminals:

T = { for, int, float, ID, NUMBER, +, -, \*, /, =, <, >, ==, !=, <=, >=, (, ), {, }, ; }

2. Non-terminals:

N = { Program, StmtList, Stmt, Declaration, Type, ForLoop, Assignment, Condition, RelOp, Expr, Expr\_Tail, Term, Factor, BinOp }

3. Start Symbol:

S = Program

4. Production Rules:

Program -> StmtList

StmtList -> Stmt StmtList| **Σ**

Stmt -> Declaration| ForLoop| Assignment ;

Declaration -> Type ID ;

Type -> int | float

ForLoop -> 'for' '(' Assignment ';' Condition ';' Assignment ')' '{' StmtList '}'

Assignment -> ID '=' Expr

Condition -> Expr RelOp Expr

RelOp -> '<' | '>' | '==' | '!=' | '<=' | '>='

Expr -> Term Expr\_Tail

Expr\_Tail -> BinOp Term Expr\_Tail | **Σ**

Term -> Factor

Factor -> '(' Expr ')' | ID | NUMBER

BinOp -> '+' | '-' | '\*' | '/'