```
program -> decls EOF
decls -> typ id decls_prime | ε
decls_prime -> vdecl decls | fdecl decls
fdecl -> lparen formals_opt rparen LBRACE vdecl_list stmt_list RBRACE
formals_opt -> formal_list | ε
formal_list -> typ ID formal_list_prime
formal_list_prime -> COMMA formal_list | ε
typ -> INT | BOOL | VOID
vdecl_list -> vdecl vdecl_list | ε
vdecl -> SEMI
stmt_list -> stmt stmt_list | ε
stmt -> assignment SEMI | RETURN stmt_opt | LBRACE stmt_list RBRACE | IF
LPAREN assignment RPAREN stmt | FOR LPAREN assignment SEMI assignment SEMI
assignment RPAREN stmt  | WHILE LPAREN assignment RPAREN stmt
stmt_opt -> SEMI | expr SEMI
assignment -> ID assignmentID | typ ID assign expr
actuals -> expr actuals | COMMA actuals | epsilon
assignmentID -> ASSIGN expr | LPAREN actuals RPAREN
expr -> T E*
E* -> PLUS T EPRIME | MINUS T EPRIME | ε
T -> F TPRIME
TPRIME -> TIMES F TPRIME | DIVIDE F TPRIME | ε
F -> LPAREN E RPAREN |LITERAL | TRUE | FALSE| ID
```