1. program → declarationList

2. declarationList → declarationList declaration | declaration

3. declaration → funDeclaration | varDeclaration

————————————————————functions——————————————————————-

4. funDeclaration → typeSpecifier **ID (** params **)** statement

5. typeSpecifier → returnTypeSpecifier

6. returnTypeSpecifier → **INT** | **BOOL** | **CHAR**

7. params → paramList | **ε**

8. paramList → paramList **,** typeSpecifier **ID** | typeSpecifier **ID**

—————————————————————statements———————————————————-

9. statement → expressionStmt | compoundStmt | selectionStmt | iterationStmt | returnStmt |

   breakStmt

10. compoundStmt → **{** statementList **}**

11. statementList → statementList statement | **ε**

12. expressionStmt → expression **;** | **;**

13. selectionStmt → **if (** simpleExpression **)** statement | **if (** simpleExpression **)** statement **else**

   statement

14. iterationStmt → **while (** simpleExpression **)** statement

15. returnStmt → **return ;** | **return** expression **;**

16. breakStmt → **break ;**

—————————————————————expressions———————————————————

17. expression → mutable mutBinOp expression | mutable mutUnaryOp | mutUnaryOp mutable

   | simpleExpression

18. mutBinOp → = | += | -= | *= | /=

19. mutUnaryOp → ++ | --

20. simpleExpression → simpleExpression **or** andExpression | andExpression

21. andExpression → andExpression **and** unaryRelExpression | unaryRelExpression

22. unaryRelExpression → **not** unaryRelExpression | relExpression

23. relExpression → sumExpression relOp sumExpression | sumExpression

24. relOp → <= | < | > | >= | == | !=

25. sumExpression → sumExpression sumOp term | term

26. sumOp → + | -

27. term → term mulOp unaryExpression | unaryExpression

28. mulOp → * | / | %

29. unaryExpression → unaryOp unaryExpression | immutable | mutable

30. unaryOp → - | *

31. mutable → **ID**

32. immutable → **(** expression **)** | call | constant

33. call → **ID (** args **)**

34. args → argList | **ε**

35. argList → argList **,** expression | expression

36. const → **NUMCONST** | **CHARCONST** | **true** | **false**

————————————————————variables—————————————————-

37. varDeclaration → typeSpecifier varDeclList;

38. varDeclList → varDeclList **,** varDeclInitialize | varDeclInitialize

39. varDeclInitialize → **ID** | **ID** = simpleExpression