

1. **<program>**====><typeDefinition_s><globalStatements><otherFunctions><mainFunction>
2. <typeDefinition_s>====><typeDefinition><typeDefinition_s> | eps
3. <typeDefinition>====>TK_RECORD TK_RECORDID <fieldDefinition_s> TK_ENDRECORD
4. <fieldDefinition_s>====><fieldDefinition><moreFields>
5. <fieldDefinition>====> TK_VAR <primitiveDatatype> TK_ID <moreField_ID> TK_SEM
- 6.<moreField_ID>====>TK_COMMA TK_ID<moreField_ID>|eps7
7. <moreFields>====><fieldDefinition><moreFields> | eps
8. <primitiveDatatype>====> TK_INT | TK_REAL |TK_CHAR12
9. <globalStatements>====><globalDeclare><globalAssign>|eps
10. <globalDeclare>====> TK_GLOBAL TK_VAR <dataType> TK_ID TK_SEM
11. <globalAssign>====> TK_ASSIGN TK_ID TK_ASSIGNOP <var> TK_SEM| eps17
12. <var>====>TK_NUM | TK_RNUM |TK_CHR
13. <otherFunctions>====><function><otherFunctions> | eps 22
14. <function>====>TK_FUNCTION TK_FUNID <input_par><output_par><stmt_s> TK_ENDFUNCTION
15. <input_par>====>TK_INPUT TK_SQL <parameter_list> TK_SQR
16. <output_par>====>TK_OUTPUT TK_SQL <parameter_list> TK_SQR
17. <parameter_list>====>TK_VAR<dataType> TK_ID <remaining_list>|eps
18. <dataType>====><primitiveDatatype> |<constructedDatatype>
19. <constructedDatatype>====>TK_RECORD TK_RECORDID
20. <remaining_list>====>TK_COMMA <parameter_list> | eps 32
21. <mainFunction>====> TK_MAIN <stmt_s> TK_ENDMAIN
22. <stmt_s>====><declaration_s><otherStmts> 34
23. <declaration_s> ==><all_declaration><declaration_s>|eps
- 24.<all_declaration>====><declaration>|<array_declaration>|<map_declaration>39
25. <declaration>====> TK_VAR <dataType> TK_ID <more_IDs> TK_SEM
- 26.<array_declaration>====>TK_ARRAY <primitiveDatatype> TK_ARRAYID TK_SQL TK_NUM TK_SQR
<more_array_IDs> TK_SEM

27. <map_declaration>====>TK_MAP <primitiveDatatype>TK_MAPID<moreMapID>TK_SEM

28. <moreMapID>====>TK_COMMA TK_MAPID <moreMapID>|eps

29.<more_array_IDs>====>TK_COMMA TK_ID TK_SQL TK_NUM TK_SQR|eps46

30. <more_IDs>====> TK_COMMA TK_ID<more_IDs>|eps

31. <otherStmts>====><stmt><otherStmts> | eps50

32. <stmt>====><assignmentStmt> | <iterativeStmt>|<conditionalStmt>|<ioStmt>| <funCallStmt> | <mapStmt>56

33. <assignmentStmt>====>TK_ASSIGN<SingleOrRecOrArrayId> TK_ASSIGNOP <arithmeticExpression> TK_SEM

34. <SingleOrRecOrArrayId>====>TK_ID | TK_RECORDID TK_DOT TK_ID| TK_ARRAYID TK_SQL <numorid> TK_SQR

35. <arithmeticExpression>====> TK_OP <arithmeticExpression> TK_CL <more_variables> | <variable><more_variables>|eps

36.<more_variables> ====><arithmeticExpression>|<operator><arithmeticExpression>

37. <operator> ====> TK_PLUS | TK_MUL |TK_MINUS|TK_DIV|TK_MOD

38. <funCallStmt>====> TK_CALL TK_FUNID TK_SQL<idList>TK_SQR TK_SQL<idList>TK_SQR TK_SEM

39. <idList>====> TK_ID <more_ids> |eps

40. <more_ids>====> TK_COMMA <idList> | eps

41. <iterativeStmt>====> TK_WHILE <booleanExpression><stmt><otherStmts> TK_ENDWHILE

42. <conditionalStmt>====> TK_IF <booleanExpression><stmt><otherStmts><else&elseif> TK_ENDIF

43.<else&elseif>=== ><elseifs><else>

44.<elseifs>====><elseif><elseifs>|eps

45.<elseif>====> TK_ELSEIF <booleanExpression><stmt><otherStmts>

46.<else>=== > TK_ELSE <stmt><otherStmts>|eps

47. <ioStmt>====>TK_GET <allVar> TK_SEM | TK_PUT <allVar> TK_SEM|TK_PUTS TK_STRING TK_SEM

48. <allVar>====>TK_ID| TK_RECORDID TK_DOT TK_ID|TK_ARRAYID TK_SQL <numorid> TK_SQR

49. <numorid>====>TK_NUM|TK_ID

50. <booleanExpression>====>TK_OP<booleanExpression><bExp>| <variable> | TK_NOT <booleanExpression>

51. <bExp>====>TK_CL|<Op><booleanExpression>TK_CL

52. <Op>====><logicalOp> | <relationalOp>

53. <variable>====> TK_ID | TK_NUM | TK_RNUM | TK_CHR | TK_ARRAYID TK_SQL <numorid>
TK_SQR | TK_RECORDID TK_DOT TK_ID | TK_MAPID TK_SQL TK_MAPFIELD TK_SQR

54. <logicalOp>====> TK_AND | TK_OR

55. <relationalOp>====> TK_LT | TK_LE | TK_EQ | TK_GT | TK_GE | TK_NE

56. <mapStmt>====> <mapAdd> | <mapDelete>

57. <mapAdd>====> TK_MAPINSERT TK_MAPID TK_OP TK_MAPFIELD TK_COMMA <variable> TK_CL TK_SEM

58. <mapDelete>====> TK_MAPREMOVE TK_MAPID TK_OP TK_MAPFIELD TK_CL TK_SEM

