1. PROGRAM MODULEDECLARATIONS OTHERMODULES DRIVERMODULE OTHERMODULES

2. MODULEDECLARATIONS MODULEDECLARATION MODULEDECLARATIONS

3. MODULEDECLARATIONS epsilon

4. MODULEDECLARATION declare module id semicol

5. OTHERMODULES MODULE OTHERMODULES

6. OTHERMODULES epsilon

7. DRIVERMODULE driverdef driver program driverenddef MODULEDEF

8. MODULE def module id enddef takes input sqbo INPUT_PLIST sqbc semicol RET MODULEDEF

9. RET returns sqbo OUTPUT_PLIST sqbc semicol

10. RET epsilon

11. INPUT_PLIST id colon DATATYPE INPUT_PLIST_ONE

12. INPUT_PLIST_ONE comma id colon DATATYPE INPUT_PLIST_ONE

13. INPUT_PLIST_ONE epsilon

14. OUTPUT_PLIST id colon TYPE OUTPUT_PLIST_ONE

15. OUTPUT_PLIST_ONE comma id colon TYPE OUTPUT_PLIST_ONE

16. OUTPUT_PLIST_ONE epsilon

17. DATATYPE integer

18. DATATYPE real

19. DATATYPE boolean

20. DATATYPE array sqbo RANGE_ARRAYS sqbc of TYPE

21. RANGE_ARRAYS INDEX_ARR rangeop INDEX_ARR

22. TYPE integer

23. TYPE real

24. TYPE boolean

25. MODULEDEF start STATEMENTS end

26. STATEMENTS STATEMENT STATEMENTS

27. STATEMENTS epsilon

28. STATEMENT IOSTMT

29. STATEMENT SIMPLESTMT

30. STATEMENT DECLARESTMT

31. STATEMENT CONDITIONALSTMT

32. STATEMENT ITERATIVESTMT

33. IOSTMT get_value bo id bc semicol

34. IOSTMT print bo VAR_PRINT bc semicol

35. BOOLCONSTT true

36. BOOLCONSTT false

37. VAR_PRINT id VAR_PRINT_ONE

38. VAR_PRINT num

39. VAR_PRINT rnum

40. VAR_PRINT BOOLCONSTT

41. VAR_PRINT_ONE sqbo SIGN NEW_INDEX sqbc

42. VAR_PRINT_ONE epsilon

43. SIMPLESTMT ASSIGNMENTSTMT

44. SIMPLESTMT MODULEREUSESTMT

45. ASSIGNMENTSTMT id WHICHSTMT

46. WHICHSTMT ONEVALUEIDSTMT

47. WHICHSTMT ONEVALUEARRSTMT

48. ONEVALUEIDSTMT assignop EXPRESSION semicol

49. ONEVALUEARRSTMT sqbo ELEMENT_INDEX_WITH_EXPRESSIONS sqbc assignop EXPRESSION semicol

50. INDEX_ARR SIGN NEW_INDEX

51. NEW_INDEX num

52. NEW_INDEX id

53. SIGN plus

54. SIGN minus

55. SIGN epsilon

56. MODULEREUSESTMT OPTIONAL use module id with parameters ACTUAL_PARA_LIST semicol

57. ACTUAL_PARA_LIST SIGN K_OLD ACTUAL_PARA_LIST_TWO

58. ACTUAL_PARA_LIST_TWO comma SIGN K_OLD ACTUAL_PARA_LIST_TWO

59. ACTUAL_PARA_LIST_TWO epsilon

60. K_OLD num

61. K_OLD rnum

62. K_OLD BOOLCONSTT

63. K_OLD id N_ELEVEN

64. OPTIONAL sqbo IDLIST sqbc assignop

65. OPTIONAL epsilon

66. IDLIST id IDLIST_ONE

67. IDLIST_ONE comma id IDLIST_ONE

68. IDLIST_ONE epsilon

69. EXPRESSION ARITHMETICORBOOLEANEXPR

70. EXPRESSION UNARY

71. UNARY UNARY_OP NEW_NT

72. NEW_NT bo ARITHMETICEXPR bc

73. NEW_NT VAR_ID_NUM

74. VAR_ID_NUM id

75. VAR_ID_NUM num

76. VAR_ID_NUM rnum

77. UNARY_OP plus

78. UNARY_OP minus

79. ARITHMETICORBOOLEANEXPR ANYTERM ARITHMETICORBOOLEANEXPR_ONE

80. ARITHMETICORBOOLEANEXPR_ONE LOGICALOP ANYTERM ARITHMETICORBOOLEANEXPR_ONE

81. ARITHMETICORBOOLEANEXPR_ONE epsilon

82. ANYTERM ARITHMETICEXPR ANYTERM_ONE

83. ANYTERM BOOLCONSTT

84. ANYTERM_ONE RELATIONALOP ARITHMETICEXPR

85. ANYTERM_ONE epsilon

86. ARITHMETICEXPR TERM ARITHMETICEXPR_ONE

87. ARITHMETICEXPR_ONE OP_ONE TERM ARITHMETICEXPR_ONE

88. ARITHMETICEXPR_ONE epsilon

89. TERM FACTOR TERM_ONE

90. TERM_ONE OP_TWO FACTOR TERM_ONE

91. TERM_ONE epsilon

92. FACTOR bo ARITHMETICORBOOLEANEXPR bc

93. FACTOR num

94. FACTOR rnum

95. FACTOR BOOLCONSTT

96. FACTOR id N_ELEVEN

97. N_ELEVEN sqbo ELEMENT_INDEX_WITH_EXPRESSIONS sqbc

98. N_ELEVEN epsilon

99. ELEMENT_INDEX_WITH_EXPRESSIONS SIGN N_TEN

100. ELEMENT_INDEX_WITH_EXPRESSIONS ARREXPR

101. N_TEN NEW_INDEX

102. N_TEN bo ARREXPR bc

103. ARREXPR ARRTERM ARR_N_FOUR

104. ARR_N_FOUR OP_ONE ARRTERM ARR_N_FOUR

105. ARR_N_FOUR epsilon

106. ARRTERM ARRFACTOR ARR_N_FIVE

107. ARR_N_FIVE OP_TWO ARRFACTOR ARR_N_FIVE

108. ARR_N_FIVE epsilon

109. ARRFACTOR id

110. ARRFACTOR num

111. ARRFACTOR BOOLCONSTT

112. ARRFACTOR bo ARREXPR bc

113. OP_ONE plus

114. OP_ONE minus

115. OP_TWO mul

116. OP_TWO div

117. LOGICALOP and

118. LOGICALOP or

119. RELATIONALOP lt

120. RELATIONALOP le

121. RELATIONALOP gt

122. RELATIONALOP ge

123. RELATIONALOP eq

124. RELATIONALOP ne

125. DECLARESTMT declare IDLIST colon DATATYPE semicol

126. CONDITIONALSTMT switch bo id bc start CASESTMT DEFAULT end

127. CASESTMT case VALUE colon STATEMENTS break semicol CASESTMT_ONE

128. CASESTMT_ONE case VALUE colon STATEMENTS break semicol CASESTMT_ONE

129. CASESTMT_ONE epsilon

130. VALUE num

131. VALUE true

132. VALUE false

133. DEFAULT default colon STATEMENTS break semicol

134. DEFAULT epsilon

135. ITERATIVESTMT for bo id in RANGE_FOR_LOOP bc start STATEMENTS end

136. ITERATIVESTMT while bo ARITHMETICORBOOLEANEXPR bc start STATEMENTS end

137. RANGE_FOR_LOOP INDEX_FOR_LOOP rangeop INDEX_FOR_LOOP

138. INDEX_FOR_LOOP SIGN_FOR_LOOP NEW_INDEX_FOR_LOOP

139. NEW_INDEX_FOR_LOOP num

140. SIGN_FOR_LOOP plus

141. SIGN_FOR_LOOP minus

142. SIGN_FOR_LOOP epsilon