

Compiladores 1 - Gramática do Trabalho

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1 Regras da Gramática

1. $Program \rightarrow ClassList$
2. $Program \rightarrow \epsilon$
3. $ClassList \rightarrow ClassDecl\ ClassList'$
4. $ClassList' \rightarrow ClassList$
5. $ClassList' \rightarrow \epsilon$
6. $ClassDecl \rightarrow \mathbf{class}\ \mathbf{ID}\ ClassDecl'$
7. $ClassDecl' \rightarrow ClassBody$
8. $ClassDecl' \rightarrow \mathbf{extends}\ \mathbf{ID}\ ClassBody$
9. $ClassBody \rightarrow \{ ThingsOne \}$
10. $ThingsOne \rightarrow Type\ ThingsOneAux$
11. $ThingsOne \rightarrow \mathbf{constructor}\ MethodBody\ ThingsTwo$
12. $ThingsOne \rightarrow \epsilon$
13. $ThingsOneAux \rightarrow \mathbf{ID}\ ThingsOne'$
14. $ThingsOneAux \rightarrow [\mathbf{ID}\ ThingsOne']$
15. $ThingsOne' \rightarrow VarDeclOpt\ ;\ ThingsOne$
16. $ThingsOne' \rightarrow MethodBody\ ThingsThree$
17. $ThingsTwo \rightarrow \mathbf{constructor}\ MethodBody\ ThingsTwo$
18. $ThingsTwo \rightarrow Type\ ThingsTwo'$
19. $ThingsTwo \rightarrow \epsilon$
20. $ThingsTwo' \rightarrow \mathbf{ID}\ MethodBody\ ThingsThree$
21. $ThingsTwo' \rightarrow [\mathbf{ID}\ MethodBody\ ThingsThree]$
22. $ThingsThree \rightarrow Type\ ThingsTwo'$
23. $ThingsThree \rightarrow \epsilon$
24. $VarDeclOpt \rightarrow ,\ \mathbf{ID}\ VarDeclOpt$
25. $VarDeclOpt \rightarrow \epsilon$
26. $MethodBody \rightarrow (ParamListOpt) \{ StatementsOpt \}$
27. $Type \rightarrow \mathbf{int}$
28. $Type \rightarrow \mathbf{string}$
29. $Type \rightarrow \mathbf{ID}$
30. $ParamListOpt \rightarrow ParamList$
31. $ParamListOpt \rightarrow \epsilon$
32. $ParamList \rightarrow Param\ ParamList'$
33. $ParamList' \rightarrow ,\ Param\ ParamList'$
34. $ParamList' \rightarrow \epsilon$
35. $Param \rightarrow Type\ Param'$
36. $Param' \rightarrow \mathbf{ID}$
37. $Param' \rightarrow [\mathbf{ID}]$
38. $StatementsOpt \rightarrow Statements$
39. $StatementsOpt \rightarrow \epsilon$
40. $Statements \rightarrow Statement\ Statements'$
41. $Statements' \rightarrow Statement\ Statements'$
42. $Statements' \rightarrow \epsilon$

43. $Statement \rightarrow VarDeclAtribStat ;$
44. $Statement \rightarrow PrintStat ;$
45. $Statement \rightarrow ReadStat ;$
46. $Statement \rightarrow ReturnStat ;$
47. $Statement \rightarrow SuperStat ;$
48. $Statement \rightarrow IfStat$
49. $Statement \rightarrow ForStat$
50. $Statement \rightarrow \mathbf{break} ;$
51. $Statement \rightarrow ;$
52. $VarDeclAtribStat \rightarrow \mathbf{int} \ VarDecl'$
53. $VarDeclAtribStat \rightarrow \mathbf{string} \ VarDecl'$
54. $VarDeclAtribStat \rightarrow \mathbf{ID} \ DeclAtribDecisao$
55. $DeclAtribDecisao \rightarrow LValueComp = AtribStat'$
56. $DeclAtribDecisao \rightarrow \mathbf{ID} \ VarDeclOpt$
57. $DeclAtribDecisao \rightarrow [\ DeclAtribDecisao'$
58. $DeclAtribDecisao' \rightarrow Expression] LValueComp = AtribStat'$
59. $DeclAtribDecisao' \rightarrow]\mathbf{ID} \ VarDeclOpt$
60. $VarDecl' \rightarrow \mathbf{ID} \ VarDeclOpt$
61. $VarDecl' \rightarrow []\mathbf{ID} \ VarDeclOpt$
62. $AtribStat' \rightarrow Expression$
63. $AtribStat' \rightarrow AllocExpression$
64. $PrintStat \rightarrow \mathbf{print} \ Expression$
65. $ReadStat \rightarrow \mathbf{read} \ \mathbf{ID} \ LValueComp'$
66. $ReturnStat \rightarrow \mathbf{return} \ Expression$
67. $SuperStat \rightarrow \mathbf{super} \ (\ ArgListOpt \)$
68. $IfStat \rightarrow \mathbf{if} \ (\ Expression \) \ \{ \ Statements \} \ IfStat'$
69. $IfStat' \rightarrow \mathbf{else} \ \{ \ Statements \}$
70. $IfStat' \rightarrow \epsilon$
71. $ForStat \rightarrow \mathbf{for} \ (\ AtribStatOpt ; ExpressionOpt ; AtribStatOpt \) \ \{ \ Statements \}$
72. $AtribStatOpt \rightarrow \mathbf{ID} \ LValueComp' = AtribStat'$
73. $AtribStatOpt \rightarrow \epsilon$
74. $ExpressionOpt \rightarrow Expression$
75. $ExpressionOpt \rightarrow \epsilon$
76. $LValueComp \rightarrow \mathbf{.ID} \ LValueComp'$
77. $LValueComp \rightarrow \epsilon$
78. $LValueComp' \rightarrow LValueComp$
79. $LValueComp' \rightarrow [\ Expression \] \ LValueComp$
80. $Expression \rightarrow NumExpression \ Expression'$
81. $Expression' \rightarrow \mathbf{RelOp} \ NumExpression$
82. $Expression' \rightarrow \epsilon$
83. $AllocExpression \rightarrow \mathbf{new} \ \mathbf{ID} \ (\ ArgListOpt \)$
84. $AllocExpression \rightarrow Type \ [\ Expression \]$
85. $NumExpression \rightarrow Term \ NumExpression'$
86. $NumExpression' \rightarrow + \ Term$
87. $NumExpression' \rightarrow - \ Term$
88. $NumExpression' \rightarrow \epsilon$
89. $Term \rightarrow UnaryExpression \ Term'$
90. $Term' \rightarrow * \ UnaryExpression$
91. $Term' \rightarrow / \ UnaryExpression$
92. $Term' \rightarrow \% \ UnaryExpression$
93. $Term' \rightarrow \epsilon$
94. $UnaryExpression \rightarrow + \ Factor$

- 95. $UnaryExpression \rightarrow - Factor$
- 96. $Factor \rightarrow \mathbf{INTEGER_LITERAL}$
- 97. $Factor \rightarrow \mathbf{STRING_LITERAL}$
- 98. $Factor \rightarrow \mathbf{ID} LValueComp'$
- 99. $Factor \rightarrow (Expression)$
- 100. $ArgListOpt \rightarrow ArgList$
- 101. $ArgListOpt \rightarrow \epsilon$
- 102. $ArgList \rightarrow Expression ArgList'$
- 103. $ArgList' \rightarrow , Expression ArgList'$
- 104. $ArgList' \rightarrow \epsilon$