Test Case #17 Stack . LexToken(VOID, 'void', 1,0) VOID . LexToken(ID, 'printExpressions', 1, 5) VOID ID . LexToken(LEFTPAREN, '(',1,21) VOID ID LEFTPAREN . LexToken(INT, 'int', 1, 22) VOID ID LEFTPAREN INT . LexToken(ID, 'i', 1, 26) VOID ID LEFTPAREN Type . LexToken(ID, 'i', 1, 26) VOID ID LEFTPAREN Type ID . LexToken(RIGHTPAREN,')',1,27) VOID ID LEFTPAREN Variable . LexToken(RIGHTPAREN,')',1,27) VOID ID LEFTPAREN Formals . LexToken(RIGHTPAREN, ')', 1,27) VOID ID LEFTPAREN Formals RIGHTPAREN . LexToken(LEFTBRACE, '{',1,29}) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE. LexToken(IF, 'if', 1, 32) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF. LexToken(LEFTPAREN, '(',1,34) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN . LexToken(ID, 'i', 1, 36) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN ID . LexToken(EQUAL, '==',1,38) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN LValue . LexToken(EQUAL, '==',1,38) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression . LexToken(EQUAL, '==',1,38) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression EQUAL . LexToken(INTCONSTANT, '0', 1, 41) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression CompareOperator, LexToken(INTCONSTANT, '0', 1, 41) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression CompareOperator INTCONSTANT. LexToken(RIGHTPAREN, ')', 1, 42) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression CompareOperator Constant . LexToken(RIGHTPAREN, ')', 1, 42) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression CompareOperator Expression . LexToken(RIGHTPAREN, ')', 1,42) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression . LexToken(RIGHTPAREN, ')', 1,42) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN . LexToken(LEFTBRACE, '[',1,45) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE . LexToken(WHILE, 'while', 1,49) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE . LexToken(LEFTPAREN, '(', 1, 54) VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE LEFTPAREN . LexToken(BOOLEANCONST VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE LEFTPAREN BOOLEANCONSTANT. LexTc VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE LEFTPAREN Constant. LexToken(RIGHT VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE LEFTPAREN Expression . LexToken(RIGH VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE WHILE LEFTPAREN Expression RIGHTPAREN . 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LexToken(LEFTPAREN, '[',1 VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE Statement PRINTLN LEFTPAREN . LexToken(STF VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE Statement PRINTLN LEFTPAREN STRINGCONST. VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE Statement PRINTLN LEFTPAREN Constant . Lex VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE IF LEFTPAREN Expression RIGHTPAREN LEFTBRACE Statement PRINTLN LEFTPAREN Expression . 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VOID ID LEFTPAREN Formals RIGHTPAREN LEFTBRACE Statements RIGHTBRACE . \$end

Declaration . \$end Program . \$end

Action Shift and goto state 10 Shift and goto state 23 Shift and goto state 30 Shift and goto state 13 Reduce rule [Type -> INT] with ['int'] and goto state 35 Shift and goto state 58 Reduce rule [Variable -> Type ID] with [None, 'i'] and goto state 39 Reduce rule [Formals -> Variable] with [None] and goto state 42 Shift and goto state 66 Shift and goto state 62 Shift and goto state 106 Shift and goto state 163 Shift and goto state 131 Reduce rule [LValue -> ID] with ['i'] and goto state 95 Reduce rule [Expression -> LValue] with [None] and goto state 198 Shift and goto state 148 Reduce rule [CompareOperator -> EQUAL] with ['=='] and goto state 137 Shift and goto state 105 Reduce rule [Constant -> INTCONSTANT] with ['0'] and goto state 96 Reduce rule [Expression -> Constant] with [None] and goto state 183 Reduce rule [Expression -> Expression CompareOperator Expression] with [None, None, None] and goto state 198 Shift and goto state 219 Shift and goto state 62 Shift and goto state 107 Shift and goto state 164 Shift and goto state 114 Reduce rule [Constant -> BOOLEANCONSTANT] with ['true'] and goto state 96 Reduce rule [Expression -> Constant] with [None] and goto state 199 Shift and goto state 220 Shift and goto state 109 Shift and goto state 166 Reduce rule [BreakStatement -> BREAK SEMICOLON] with ['break', ','] and goto state 90 Reduce rule [Statement -> BreakStatement] with [None] and goto state 234 Reduce rule [WhileStatement -> WHILE LEFTPAREN Expression RIGHTPAREN Statement] with ['while', '(', None, ')', None] and goto state 88 Reduce rule [Statement -> WhileStatement] with [None] and goto state 84 Shift and goto state 111 Shift and goto state 169 Shift and goto state 113 Reduce rule [Constant -> STRINGCONSTANT] with ["expresion: "] and goto state 96 Reduce rule [Expression -> Constant] with [None] and goto state 190 Shift and goto state 215 Shift and goto state 131 Shift and goto state 181 Shift and goto state 131 Reduce rule [LValue -> ID] with ['i'] and goto state 95 Reduce rule [Expression -> LValue] with [None] and goto state 185 Shift and goto state 212 Reduce rule [LValue -> ID LEFTBRACKET Expression RIGHTBRACKET] with ['a', '[', None, ']'] and goto state 95 Shift and goto state 155 Shift and goto state 97 Reduce rule [Expression -> THIS] with ['this'] and goto state 191 Reduce rule [Expression -> LValue ASSIGNOP Expression] with [None, '=', None] and goto state 190 Reduce rule [ExpressionList -> Expression] with [None] and goto state 230 Reduce rule [ExpressionList -> Expression COMMA ExpressionList] with [None, ',', None] and goto state 203

Reduce rule [PrintStatement -> PRINTLN LEFTPAREN ExpressionList RIGHTPAREN SEMICOLON] with ['println', '(', None, ')',','] and goto state 92

Shift and goto state 223 Shift and goto state 237

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Reduce rule [Statement -> PrintStatement] with [None] and goto state 84
Reduce rule [Statements -> Statement] with [None] and goto state 134
Reduce rule [Statements -> Statement Statements] with [None, None] and goto state 81
Shift and goto state 132
Reduce rule [StatementBlock -> LEFTBRACE Statements RIGHTBRACE] with ['\f', None, '\f'] and goto state 93
Reduce rule [Statement -> StatementBlock] with [None] and goto state 233
Shift and goto state 241
Shift and goto state 106
Shift and goto state 163
Shift and goto state 131
Reduce rule [LValue -> ID] with ['i'] and goto state 95
Reduce rule [Expression -> LValue] with [None] and goto state 198
Shift and goto state 148
Reduce rule [CompareOperator -> EQUAL] with ['=='] and goto state 137
Shift and goto state 105
Reduce rule [Constant -> INTCONSTANT] with ['1'] and goto state 96
Reduce rule [Expression -> Constant] with [None] and goto state 183
Reduce rule [Expression -> Expression CompareOperator Expression] with [None, None, None] and goto state 198
Shift and goto state 219
Shift and goto state 62
Shift and goto state 94
Reduce rule [LValue -> ID] with ['array'] and goto state 95
Shift and goto state 155
Shift and goto state 104
Shift and goto state 162
Shift and goto state 197
Shift and goto state 218
Shift and goto state 232
Shift and goto state 240
Reduce rule [Expression -> NEWARRAY LEFTPAREN INTCONSTANT COMMA ID RIGHTPAREN] with ['newarray', '(', '20',',', 'myType', ')'] and goto state 191
Reduce rule [Expression -> LValue ASSIGNOP Expression] with [None, '=', None] and goto state 86
Shift and goto state 135
Reduce rule [Statement -> Expression SEMICOLON] with [None, ';'] and goto state 84
Shift and goto state 111
Shift and goto state 169
Shift and goto state 113
Reduce rule [Constant -> STRINGCONSTANT] with ["expresion: "] and goto state 96
Reduce rule [Expression -> Constant] with [None] and goto state 190
Shift and goto state 215
Shift and goto state 131
Shift and goto state 153
Shift and goto state 186
Shift and goto state 213
Shift and goto state 131
Reduce rule [LValue -> ID] with ['i'] and goto state 95
Reduce rule [Expression -> LValue] with [None] and goto state 190
Reduce rule [ExpressionList -> Expression] with [None] and goto state 189
Reduce rule [Actuals -> ExpressionList] with [None] and goto state 228
Shift and goto state 238
Reduce rule [Call -> ID PERIOD ID LEFTPAREN Actuals RIGHTPAREN] with ['array','.','getInfo','(',None,')'] and goto state 98
Reduce rule [Expression -> Call] with [None] and goto state 190
Reduce rule [ExpressionList -> Expression] with [None] and goto state 230
Reduce rule [ExpressionList -> Expression COMMA ExpressionList] with [None, ',', None] and goto state 203
Shift and goto state 223
Shift and goto state 237
Reduce rule [PrintStatement -> PRINTLN LEFTPAREN ExpressionList RIGHTPAREN SEMICOLON] with ['println', '(', None, ')',','] and goto state 92
Reduce rule [Statement -> PrintStatement] with [None] and goto state 84
Reduce rule [Statements -> Statement] with [None] and goto state 134
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Reduce rule [Statements -> Statement Statements] with [None, None] and goto state 81

Shift and goto state 132

Reduce rule [StatementBlock -> LEFTBRACE Statements RIGHTBRACE] with ['\f', None, '\f'] and goto state 93

Reduce rule [Statement -> StatementBlock] with [None] and goto state 233

Shift and goto state 241

Shift and goto state 111

Shift and goto state 169

Shift and goto state 113

Reduce rule [Constant -> STRINGCONSTANT] with ["expresion: "] and goto state 96

Reduce rule [Expression -> Constant] with [None] and goto state 190

Shift and goto state 215

Shift and goto state 131

Shift and goto state 153

Shift and goto state 186

Shift and goto state 213

Shift and goto state 131

Reduce rule [LValue -> ID] with ['i'] and goto state 95

Reduce rule [Expression -> LValue] with [None] and goto state 190

Reduce rule [ExpressionList -> Expression] with [None] and goto state 189

Reduce rule [Actuals -> ExpressionList] with [None] and goto state 228

Shift and goto state 238

Reduce rule [Call -> ID PERIOD ID LEFTPAREN Actuals RIGHTPAREN] with ['array','.','getInfo','(',None,')'] and goto state 98

Reduce rule [Expression -> Call] with [None] and goto state 190

Reduce rule [ExpressionList -> Expression] with [None] and goto state 230

Reduce rule [ExpressionList -> Expression COMMA ExpressionList] with [None,',',None] and goto state 203

Shift and goto state 223

Shift and goto state 237

Reduce rule [PrintStatement -> PRINTLN LEFTPAREN ExpressionList RIGHTPAREN SEMICOLON] with ['println', (', None, ')',','] and goto state 92

Reduce rule [Statement -> PrintStatement] with [None] and goto state 245

Reduce rule [IfStatement -> IF LEFTPAREN Expression RIGHTPAREN Statement ELSE Statement] with ['if', '(', None, ')', None, 'else', None] and goto state 87

Reduce rule [Statement -> If Statement] with [None] and goto state 245

Reduce rule [IfStatement -> IF LEFTPAREN Expression RIGHTPAREN Statement ELSE Statement] with ['if,'(', None, ')', None, 'else', None] and goto state 87

Reduce rule [Statement -> IfStatement] with [None] and goto state 84

Reduce rule [Statements -> Statement] with [None] and goto state 81

Shift and goto state 132

Reduce rule [StatementBlock -> LEFTBRACE Statements RIGHTBRACE] with ['{', None, '}'] and goto state 119

Reduce rule [FunctionDeclaration -> VOID ID LEFTPAREN Formals RIGHTPAREN StatementBlock] with ['void', <str @ 0x111fcb108>, '(', None, ')', None] and

Reduce rule [Declaration -> FunctionDeclaration] with [None] and goto state 2

Reduce rule [Program -> Declaration] with [None] and goto state 1