# 1 CHANGE LOG v1.9

Možnost nekonečného do-loop cyklu při vynechání podmínky.

# 2 LL Grammar IFJ17 (v1.9)

(1) $Line \rightarrow GlobalStmt \quad ScopeStmt \quad LineEnd$
(2) $LineEnd \rightarrow$ **EOL** $\quad LineEnd$
(3) $\quad | \quad \varepsilon$
(4) $GlobalStmt \rightarrow FuncDecl$ **EOL** $\quad GlobalStmt$
(5) $\quad | \quad FuncDef$ **EOL** $\quad GlobalStmt$
(6) $\quad | \quad SharedVar$ **EOL** $\quad GlobalStmt$
(7) $\quad |$ **EOL** $\quad GlobalStmt$
(8) $\quad | \quad \varepsilon$
(9) $InnerStmt \rightarrow VarDecl$
(10) $\quad | \quad Assignment$
(11) $\quad | \quad IfStmt$
(12) $\quad | \quad ScopeStmt$
(13) $\quad | \quad DoStmt$
(14) $\quad | \quad ForStmt$
(15) $\quad | \quad PrintStmt$
(16) $\quad | \quad InputStmt$
(17) $\quad | \quad ReturnStmt$
(18) $\quad | \quad ExitStmt$
(19) $\quad | \quad ContinueStmt$
(20) $\quad | \quad \varepsilon$
(21) $StmtSeq \rightarrow InnerStmt$ **EOL** $\quad StmtSeq$
(22) $\quad | \quad \varepsilon$
(23) $VarDecl \rightarrow$ **DIM** $\quad VarDef$
(24) $\quad |$ **STATIC** $\quad VarDef$

(25) $SharedVar \rightarrow$ **DIM SHARED** $VarDef$

(26) $VarDef \rightarrow$ **ID AS** $Type$ $InitOpt$

(27) $InitOpt \rightarrow$ ‘=‘ $Expression$

(28) $\mid \varepsilon$

(29) $FuncDecl \rightarrow$ **DECLARE FUNCTION ID** ‘(‘ $Params$ ‘)‘ **AS** $Type$

(30) $Type \rightarrow$ **INTEGER**

(31) $\mid$ **DOUBLE**

(32) $\mid$ **STRING**

(33) $\mid$ **BOOLEAN**

(34) $FuncDef \rightarrow$ **FUNCTION ID** ‘(‘ $Params$ ‘)‘ **AS** $Type$ **EOL** $StmtSeq$ **END FUNCTION**

(35) $ParamDecl \rightarrow$ **ID AS** $Type$

(36) $Params \rightarrow$ $ParamDecl$ $ParamsNext$

(37) $\mid \varepsilon$

(38) $ParamsNext \rightarrow$ ‘,‘ $ParamDecl$ $ParamsNext$

(39) $\mid \varepsilon$

(40) $ReturnStmt \rightarrow$ **RETURN** $Expression$

(41) $Assignment \rightarrow$ **ID** $AssignOperator$ $Expression$

(42) $InputStmt \rightarrow$ **INPUT ID**

(43) $PrintStmt \rightarrow$ **PRINT** $Expression$ ‘;‘ $ExpressionList$

(44) $ExpressionList \rightarrow$ $Expression$ ‘;‘ $ExpressionList$

(45) $\mid \varepsilon$

(46) $ScopeStmt \rightarrow$ **SCOPE EOL** $StmtSeq$ **END SCOPE**

(47) $IfStmt \rightarrow$ **IF** $Expression$ **THEN EOL** $StmtSeq$ $IfStmtElseif$ $IfStmtElse$ **END IF**

(48) $IfStmtElseif \rightarrow$ **ELSEIF** $Expression$ **THEN EOL** $StmtSeq$ $IfStmtElseif$

(49) $\mid \varepsilon$

(50) $IfStmtElse \rightarrow$ **ELSE EOL** $StmtSeq$

(51) $\mid \varepsilon$

(52) $DoStmt \rightarrow$ **DO** $DoStmtEnd$

(53) $DoStmtEnd \rightarrow$ $TestTypeStart$ $Expression$ **EOL** $StmtSeq$ **LOOP**

(54) $\mid$ **EOL** $StmtSeq$ **LOOP** $TestTypeEnd$

(55) *TestTypeStart* → **WHILE**
(56) | **UNTIL**
(57) *TestTypeEnd* → **WHILE** *Expression*
(58) | **UNTIL** *Expression*
(59) | $\varepsilon$
(60) *ExitStmt* → **EXIT** *LoopType*
(61) *ContinueStmt* → **CONTINUE** *LoopType*
(62) *Looptype* → **DO**
(63) | **FOR**
(64) *ForStmt* → **FOR** **ID** *TypeOpt* ‘ = ‘ *Expression* **TO** *Expression* *StepOpt* **EOL** *StmtSeq* **NEXT** *IdOpt*
(65) *TypeOpt* → **AS** *Type*
(66) | $\varepsilon$
(67) *StepOpt* → **STEP** *Expression*
(68) | $\varepsilon$
(69) *IdOpt* → **ID**
(70) | $\varepsilon$
(71) *AssignOperator* → ‘ = ‘
(72) | ‘− = ‘
(73) | ‘+ = ‘
(74) | ‘∗ = ‘
(75) | ‘\ = ‘ `TOKEN_DIVI_ASIGN`
(76) | ‘/ = ‘ `TOKEN_DIVR_ASIGN`
(77) = `number of rules`

## 3 Komentář

- *Neterminály*: Psány kurzívou (*Global*, *ScopeStmt*, ...).
- **TERMINÁLY(TOKENY)**: Terminály (**IF**, **LOOP**, ...) psány VELKÝMI PÍSMENY a vyznačeny **tučně**. Nepísmenné terminály (‘=‘, ‘(‘, ‘)‘, ...) vyznačeny ‘uvozovkami‘.