FLCD – lab2

Minilanguage specification

Github: https://github.com/IuliaPapureanu/FLCD

**Specification (file Lexic.txt)**

**Alphabet:**

**a. Upper (A-Z) and lower case letters (a-z) of the English alphabet**

**b. Underline character '\_';**

**c. Decimal digits (0-9);**

1. **Lexic:**

**a.Special symbols, representing:**

**- operators + - \* / < <= = >= == ^ % =**

**- separators [ ] { }  : ; space**

**- reserved words:**

**if then else endif while endwhile read print int string**

**array  var**

**b.identifiers**

**-a sequence of letters and  digits, such that the first character is a letter; the rule is:**

**identifier = letter{(letter|digit)}**

**letter = "A" | "B" | . ..| "Z"|”a”|”b”|…|”z”**

**digit = "0" | "1" |...| "9"**

**c.constants**

**1.integer - rule:**

**noconst:=”0”| [(”+”|”-”)] no**

**no:= nonzero[{digit}]**

**nonzero := “1”|”2”|…|”9”**

**2.string**

**conststring:="string"**

**string:={char}**

**char:=letter|digit**

**2. Syntax:**

**The words - predefined tokens are specified between " and ":**

**Sintactical rules: (file Syntax.in)**

**type1 = "string" | "int"**

**arraydecl = type1 “array” "[" nr "]"**

**type  = type1|arraydecl**

**declaration =type IDENTIFIER**

**decllist = declaration | declaration ";" decllist**

**stmtlist = stmt | stmt ";" stmtlist**

**stmt = simplstmt**

**simplstmt = assignstmt | iostmt**

**assignstmt = identifier "=" expression**

**expression = expression "+" term | term**

**term = term "\*" factor | factor**

**factor = "(" expression ")" | identifier**

**iostmt = ("read" | "print") "(" identifier ")"**

**ifstmt = "if" “(” condition “)” "then" stmt ["else" stmt] “endif”**

**whilestmt = "while" “(” condition “)” stmt “endwhile”**

**condition = expression RELATION expression**

**RELATION = "<" | "<=" | "==" | "<>" | ">=" | ">"|”!=”**

**Tokens: (file token.in)**

**Separatori:**

**‘ ‘,**

**‘;’**

**Operatori:**

**‘+’**

**’/’**

**’-’**

**’\*’**

**”and”**

**“or”**

**”xor”**

**”=”**

**Keywords:**

**“if”**

**”then”**

**”else”**

**”while”**

**”for”**

**“int”**

**“string”**