

Lab 1b

Lexic:

a.Special symbols:

-operators: + - * / < <= = >= == !=

-separators: ; space

-reserved words: readFromKeyboard repeat until char const int else check then while write

b.Identifiers:

-a sequence of letters and digits or just letters, such that the first character is a & then a letter;

identifier = &letter | &letter{ letter } { digit }

letter = "A" | "B" | . .. | "Z" | "a" | "b" | ... | "z"

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

c.Constants:

1.integer:

number = (+ | -) digit | digit { digit }

2.Char

character = "" letter "" | "" digit ""

3.String

constchar = "" string ""

string = char | char { string }

char = "" letter "" | "" digit ""

Token:

+

-

*
/
=
<
>
<=
>=
!=
==
space
;
readFromKeyboard
write
repeat
until
char
const
string
int
check
else
then
while

Syntax:

RELATION = < | <= | = | != | >= | == | >
condition = expression RELATION expression
whileStmt = "WHILE" condition stmt
ifStmt = "CHECK" condition "THEN" stmt | "CHECK" condition "THEN" stmt
"ELSE" "THEN" stmt
assignStmt = IDENTIFIER "=" expression
ioStmt = "READFROMKEYBOARD" | "WRITE" "(" IDENTIFIER ")"
simpleStmt = assignStmt | ioStmt
stmt = simpleStmt | structStmt

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stmtList = stmt | stmt ";" stmtList
structStmt = stmtList | ifStmt | whileStmt
factor = "(" digit ")" | IDENTIFIER
term = term (* | /) factor | term | factor
expression = expression (+ | -) term | term
type1 = "BOOLEAN" | "CHAR" | "INT" | "STRING"
arrayDecl = type1 "[" expression "]"
declaration = type IDENTIFIER

decllist = declaration | declaration ";" decllist
program = decllist ";"
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