

Lexic:

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 newline tab
- reserved words:

start stop array char integer boolean string appointment date

let if else then read while print for from to

b. identifiers

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

identifier = letter | letter{letter}{digit}

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

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

c. constants

1. integer - rule:

noconst = +no|-no|no

no = digit{no}

2. character

char = 'letter'|'digit'

4. boolean

boolean = "true" | "false"

5. string

constchar = "string"

string = char{string}

char = letter|digit

6. date

day = "1" | "2" | ... | "31"

month = "1" | "2" | ... | "12"

year = no

date = day-month-year

7.apointment

apointment = string,date

Syntax:

```
program = "START" decllist cmpdstmt "STOP"
decllist = declaration | declaration decllist
declaration = "LET" IDENTIFIER type
type1 = "INTEGER" | "CHARACTER" | "BOOLEAN" | "STRING" |
"DATE" | "APOINTMENT"
arraydecl = "ARRAY" "[" nr "]" "OF" type1
type = type1|arraydecl
cmpdstmt = stmtlist
stmtlist = stmt | stmt stmtlist
stmt = simplstmt | structstmt
simplstmt = assignstmt | iostmt
assignstmt = IDENTIFIER "=" expression
expression = expression "+" term | expression "-" term | term
term = term "*" factor | term "/" factor | factor
factor = "(" expression ")" | IDENTIFIER
iostmt = "READ" | "PRINT" IDENTIFIER
structstmt = cmpdstmt | ifstmt | whilestmt
ifstmt = "IF" condition "THEN" stmt ["ELSE THEN" stmt] "STOP IF"
whilestmt = "WHILE" condition "DO" stmt "STOP WHILE"
condition = factor RELATION expression
RELATION = "<" | "<=" | "=" | "<>" | ">=" | ">"
```

Token:

start
stop
array
char
integer
boolean
string

appointment
date
let
if
else
then
read
while
print
for
from
to
+
-
*
/
=
<
<=
=
>=
(
)
[
]
,
;
space
newline
tab
integer
character
boolean
string
date
apointment