SYNTAX:

Predefined tokens are specified between “ and “ :

Syntactic rules:

**<program>**::= “VAR” <decllist> “;”

**<decllist>**::=<declaration>

| <declaration> ‘,’< decllist>

**<declaration>**::= <const\_type> “Identifier” “;”

| <const\_types> ”Identifier” “,” <identifiers> “;”

| <list\_declar>

**<identifiers>**::=”Identifier”

|”Identifier”<identifiers>

**<const\_types>**::= “Integer”

|”Char”

|”String”

|”Bool”

**<list\_declar>**::= “Identifier” “->” “[“ ”]” “;”

| “Identifier” “->” “[“ <variables> “]” “;”

**<variables>** ::= <all\_types>

| <all\_types> ”,” <variables>

**<all\_types>**::= “Integer”

|”Char”

|”String”

|”List”

|”Bool”

**<stmt>** ::= <simple\_stmt>

| <struct\_stmt>

**<struct\_stmt>** ::= <cmp\_stmt>

| <if\_stmt>

| <while\_stmt>

**<cmpd\_stmt>** ::= “<<” <stmt\_list> “>>”

**<stmt\_list>** ::= <stmt> ”;”

| <stmt> ”;” <stmt\_list>

**<simple\_stmt>** ::= <assign\_stmt>

| <iostmt>

**<assign\_stmt>** ::= “Identifier” “->” <expression>

|“Identifier” “->” <all\_terms>

**<iostmt>** ::=”read” “(“ “Identifier” “)”

|“write” “(“ <prints> “)”

**<prints>** ::=”Identifier”

| <text>

| “Identifier” <prints>

| <text> <prints>

**<text>**::=”Char”

|”Digit”

| <tokens>

|”Char” <text>

|”Digit” <text>

| <tokens> <text>

**<whilestmt>** ::=”while” ”(“ <condition> ”)” ”<<” <stmt> “>>”

**<ifstmt>** ::=”if” “(“ <condition> “)” “<<” <stmt> “>>” “else” “<<” <stmt> “>>”

**<term>** ::=”Identifier”

|“Integer”

**<all\_terms>** ::=”Identifier”

|”Integer”

|”Char”

|”String”

|”List”

|”Bool”

**<condition>** ::= <expression> <relation> <expression >

| <expression> <relation> <expression> <bool\_op> <condition>

**<expression>** ::= “(“<term> <arithm\_op> <term>”)”

|“(“<term> <arithm\_op> **<expression>**”)”

| “(“**<expression>** <arithm\_op> **<expression>** ”)”

**<expr\_seq>** ::= <arithm\_op> <term> “(“

| <arithm\_op> <term> <expr\_seq>

**<arithm\_op>** ::= “+”

| “-“

| “\*”

| “/”

| “%”

**<bool\_op>** ::=”&”

|”^”

**<relation>** ::= "<"

|"<="

| "="

| "!="

| ">="

| ">"