TINY+

We define here a programming language called TINY+, which is a superset of TINY in that it includes declarations, if statement, do-while statement, string type and so on.

**Part 1 Lexical Conventions of TINY+**

1. The keywords of the language are the following:

true false or and not int bool float double string do while

if then else end repeat until read write

All keywords are reserved and must be written in lowcase

1. Special symbols are the following:

**> <= >=** != **, '**

**{ } ; := + - \* / ( ) < =**

1. Other tokens are ID, NUM and STRING which are defined by the following regular expressions:

# ID=letter (letter | digit)\*

Identifier is letter followed by letters and digits

NUM=digit digit\*

STRING=**'** any character except **' '**

A STRING is enclosed in brackets **'…'**, any character except **'** can appear in a STRING. A STRING can’t be defined more than a line

letter=a|…|z|A|…|Z

digit=0|…|9

Lower and uppercase letters are distinct

1. White space consists of blanks, newlines and tabs. White space is ignored except that it must separate IDs, NUMs, and keywords
2. Comments are enclosed in curly brackets {…} and cannot be nested. Comments can include more than one line.

**Part 2 Sample programs in TINY+**

**string str;**

**int x, fact;**

**str:= 'sample program in TINY+ language- computes factorial' ;**

**read x;**

**if x>0 and x<100 then {don’t compute if x<=0}**

**fact:=1;**

**do**

**fact:=fact\*x;**

**x:=x-1；**

**while x>0;**

**write fact；**

**end**