Pseudocode syntax

The simplified formal description of the pseudocode
applied in the framework of "Algorithms and basics of programming" subject.

The main components of pseudocode presented through examples

Numeric constnat

```
3
0
-56
+789.321
```

Text constant

```
"Hello World!"
"Enter a number"
"Your score is "
```

Identifier (name of variables and subroutines)

```
i
size
NumOfCars
average_age
Grade3
3years
```

Arithmetic expressions

```
-123.45
size*2
12+34.5
(X + Y * Z - Q) % (W / 2)
3*(Num-data[i])-2.5*max(A, 0)-1/2
```

Logic expression (condition)

```
Age<18
10==score
Grade!=1
Heigth>=150
data+10 <= Max
x==1 AND y==0
N>0 OR M==0
NOT (Max>Min)
(NOT (x==0 AND y==1)) == (x!=0 OR y!=1)
```

Conversion to integer

```
(int)Data
(int)3.6
(int)(2.0-3.99)
```

Assignemt

```
x = +3.5
Max=Size
i=i+1
A = B+C*D[4]-56.78/abs(TMP)
x=(int)q%2
```

Getting data from the user

```
input size
input X, Y, Z
input A[i]
```

Displaying information

```
output "Ready"
output size
output 2*A[i]+f(N)
output X1, " ", X2
output "You are ", age, " year old. "
output "first line", NEWLINE, "second line"
```

Branching (selection)

```
if C!=0 then
   A=B/C
endif


if x%2==0 then
   output "Even"
else
   output "Odd"
endif


if x%2==0 AND x%3==0 then
   y=x/6
else
   output x/6
endif


if x>0 then
   if y==0 then
     z=+1
   else
     z=-1
   endif
else
   y=0
endif
```

Loop (iteration)

```
while i<10 do
   A[i]=i
   i=i+1
enddo
```

```
Num=-1
while Num<0 AND Num>100 then
   input Num
enddo
```

```
i=10
while i<=90 do
   j=0
   while j<10 do
     output i+j
     j=j+1
   enddo
   i=i+10
enddo
```

Explicit loop quitting

```
while 1==1 do
   if x%17==0 then
     break
   endif
   i=i+1
enddo
```

Array initialization

```
Count[]={0,0,0,0,0}
D[]={10,20,30}
```

Usage of array elements

```
A[2]=321
Min=Data[num]
Sum[i]=X1[i]+X2[i]
N[j]=N[j-1]*2
```

Procedure definition

```
procedure SayHello()
   output "Hello"
endprocedure
```

```
procedure lineBreakSometimes(N)
  if N%10==0 then
    output NEWLINE
  enddo
endprocedure


procedure lineBreakSometimes_2(N)
  if N%10>0 then
    return
  endif
  output NEWLINE
endprocedure
```

Procedure call

```
call SayHello()


call lineBreakSometimes(x+1)
```

Function definition

```
function absval(N)
  if N<0 then
    N=-1*N
  endif
  return N
endfunction


function min(a,b)
  if a<b then
    return a
  else
    return b
  endif
endfunction
```

Function call

```
x=absval(N1-N2)


halfmin=min(L,R)/2.0


value = absval(min(x,0))
```

Explicit termination of execution

```
if i<N then
  stop
endif
```

```
function q(A,B)
  if B==0 then
    stop
  endif
  return A/B
endfunction
```

List of pseudocode keywords

```
AND
break
call
do
else
enddo
endfunction
endif
endprocedure
function
if
input
int
NEWLINE
NOT
OR
output
procedure
return
stop
then
while
```

Precedence of operators

parenthesis	()	high
unary	+ - sign	
	NOT	
	(int)	
arithmetic	* / %	
	+ -	
comparison	< <= > >=	
	== !=	
logic	AND	
	OR	low