Lesson 49 C Practice (Tracing)

To be a good programmer, you have to learn how to trace, which means tracing your program on paper with a pen before starting using the machine.

In this lesson we will together learn how to exactly trace :

```
#include <stdio.h>
int main() {
int i, x;
//we declare two variables
x=0;

for (i = 1; i < 5; i++) {
//this for will do 4 loops
 x += 1;
printf("%d\n", x);
//print the value of x
}
```

Try the code : Click here.

First loop :

Inside the **for**

i becomes 1, verifies the condition **i<5** ?

if **true**, it executes the statements inside the **for**, then returns to the for and increments the i (**i ++**).

Second loop :

i changes value to 2,

verifies the condition **i<5** ?

if **true**, it executes the statements inside the **for**, then returns to the for and increments the i (**i ++**).

Third loop :

i changes value to 3,

verifies the condition **i<5** ?

if **true**, it executes the statements inside the **for**, then returns to the for and increments the i (**i ++**).

Fourth loop :

i changes value to 4,

verifies the condition **i<5** ?

if **true**, it executes the statements inside the **for**, then returns to the for and increments the i (**i ++**).

Fifth loop :

i changes value to 5,

verifies the condition **i<5** ?

Not so then **false** , the for stops and doesn't execute the statements.

then the machine executes the rest of the code, which is the printing.

When we were doing loops the command was i +=x is repeated in each rotation

The values of i and x are x = x +i;

Loop ?	value of i	value of x	Final value of x
LOOP 1	1	0	1
LOOP 2	2	1	3
LOOP 3	3	3	6
LOOP 4	4	6	10

So here we did a trace, which is to know what the program will do before it prints.