

# 034 - FOR LOOP IN C

The for loop in C language is used to iterate the statements or a part of the program several times.

It is frequently used to traverse the data structures like the array and linked list.

```
for( initializing_counter; condition; updating_counter ){  
    // block_of_code;  
}
```

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## PROPERTIES OF FOR LOOP'S PART 1 : INITIALIZING COUNTER

We can initialize more than one variable in Expression 1.  
This Expression is optional.

In C, we can not declare the variables in Expression 1.  
However, It can be an exception in some compilers.

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## PROPERTIES OF FOR LOOP'S PART 2 : CONDITION

It checks for a specific condition to be satisfied.  
If it is not, the loop is terminated.

Expression 2 can have more than one condition.  
However, the loop will iterate until the last condition becomes false.  
Other conditions will be treated as statements.

Expression 2 is optional.

Expression 2 can perform the task of expression 1 and expression 3.  
That is, we can initialize the variable as well as update the loop variable in expression 2 itself.

We can pass zero or non-zero value in expression 2. However, in C, any non-zero value is true, and zero is false by default.

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## PROPERTIES OF FOR LOOP'S PART 3 : COUNTER VARIABLE

Expression 3 is used to update the loop variable a.k.a counter variable.  
We can update more than one variable at the same time.  
Expression 3 is optional.

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## LOOP BODY

The braces { } are used to define the scope of the loop. However, if the loop contains only one statement, then we don't need to use braces.

A loop without a body is possible.

The braces work as a block separator, i.e., the value variable declared inside for loop is valid only for that block and not outside.

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