

LOOP IN C SHORT NOTES



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.
- When you know exactly how many times you want to loop through a block of code, use the for loop instead of a while loop:

Syntax of "for loop":

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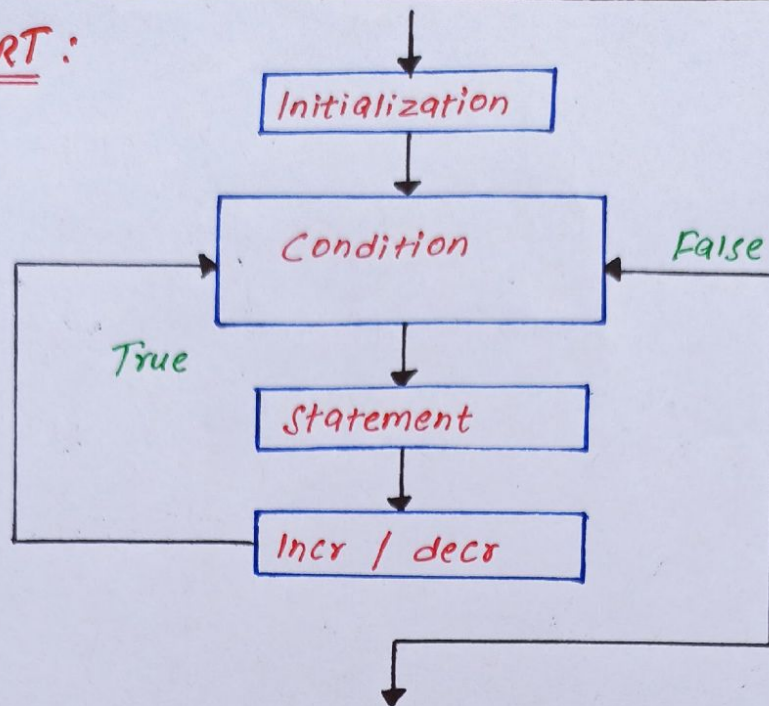
// Author : @Arul_kumar

// For loop syntax

for (initialization; condition;
increment/decrement) {

// statement or code to be executed
}

FLOW CHART :



Example :

```
// Author : @Atul_kumar
#include <stdio.h>
int main ( )
{
    int i;
    for(i=0;i<5;i++)
    {
        printf ("%d\n", i);
    }
    return 0;
}
```

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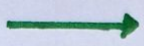
OUTPUT :

Output

/tmp/CFEAFLO5YO.0

0
1
2
3
4

Continue →

- 
- Statement 1 sets a variable before the loop starts ($int\ i=0$).
 - Statement 2 defines the condition for the loop to run (i must be less than 5). If the condition is true, the loop will start over again, if it is false, the loop will end.
 - Statement 3 increases a value ($i++$) each time the code block in the loop has been executed.

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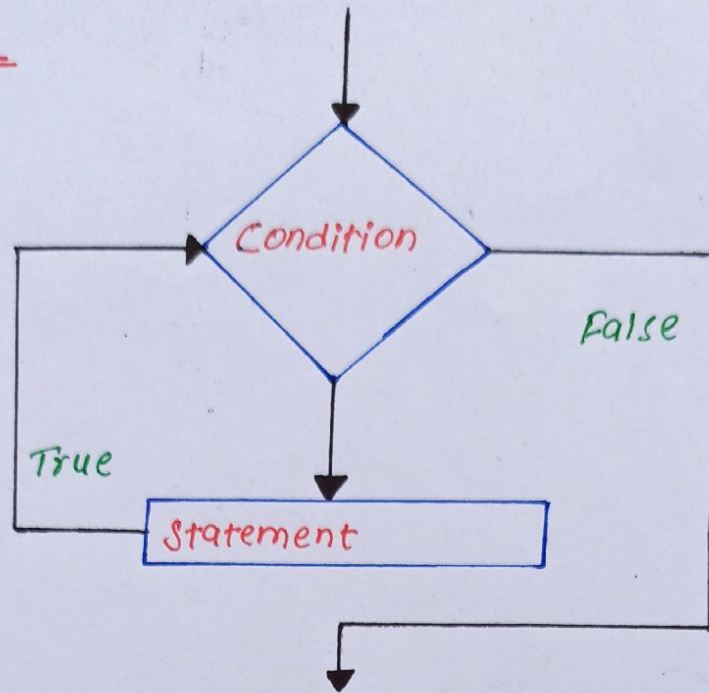
WHILE LOOP:

- A while loop in C programming repeatedly executes a target statement as long as a given condition is true.
- In general, a while loop allows a part of the code to be executed multiple times depending upon a given boolean condition.
- While loop is also known as a pretested loop.
- The while loop is mostly used in the case where the number of iterations is not known in advance.

Syntax:

```
// Author : @Atul_kumar  
while (Condition) {  
    // code to be executed  
}
```


FLOW CHART



Example:

```
// Author : @Atul_Kumar
#include <stdio.h>
int main ( )
{
    int i = 1;
    while (i <= 10)
    {
        printf ("%d \n", i);
        i++;
    }
    return 0;
}
```

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DO - WHILE LOOP:

- Unlike for and while loops, which test the loop condition at the top of the loop.
- the do... while loop in C programming checks its condition at the bottom of the loop.
- The do while loop is a post tested loop.

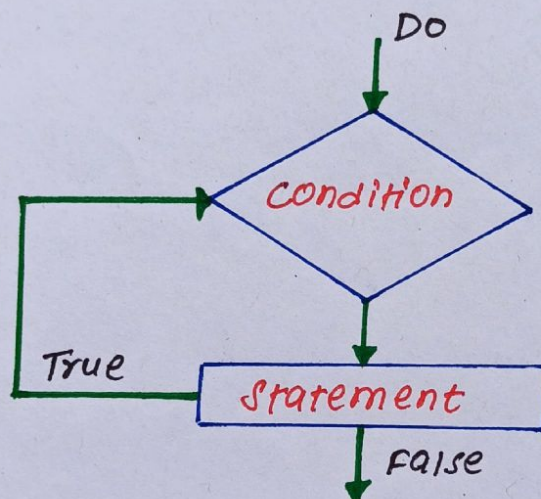
Continue →

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- A do... While loop is similar to a while loop, except the fact that it is guaranteed to be executed at least one time.

Syntax:

```
// Author : @Atul-kumar  
do {  
    // code to be executed  
} while (condition);
```

Flowchart:



Example:

```
// Author @Atul-kumar  
#include <stdio.h>  
int main()  
{  
    int i = 1;  
    do {  
        printf("%d \n", i);  
        i++;  
    } while (i <= 10);  
    return 0;  
}
```

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