C PROGRAMMING

For Loop

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FOR LOOP

What is loop?

A loop is used for executing a block of statements repeatedly until a given condition returns false.

What is for loop?

A **for** loop is a repetition control structure that allows you to efficiently write a loop that needs to execute a specific number of times.
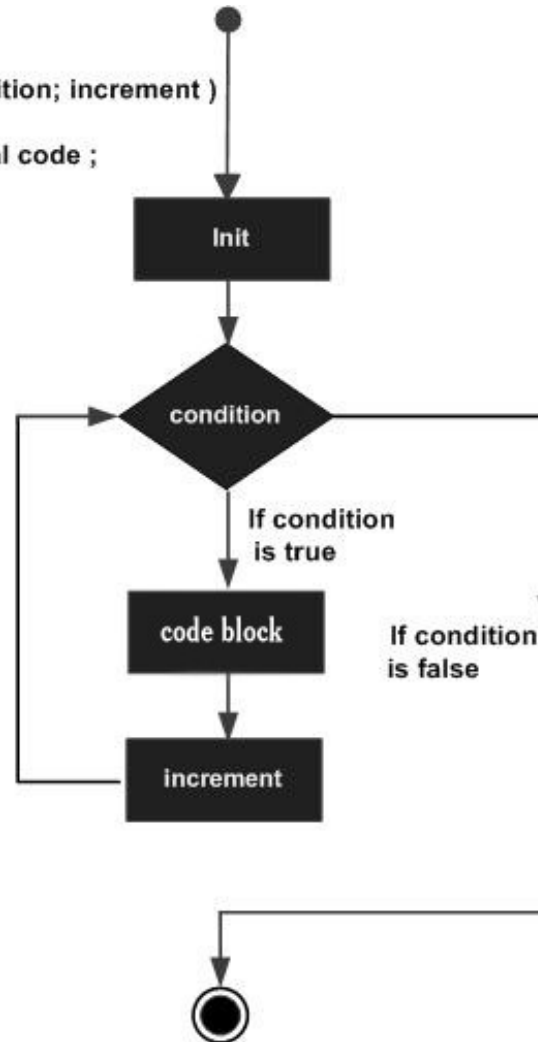
SYNTEX OF FOR LOOP

Syntax

```
for(initial value; condition; increment/decrement)
{
//code to be executed
}
```

FLOW DIAGRAM


```
for( init; condition; increment )
{
    conditional code ;
}
```

Example of For loop

```c
#include <stdio.h>
int main()
{
    int i;
    for (i=1; i<=10; i++)
    {
        printf("%d\n", i);
    }
    return 0;
}
```

Output

1
2
3
4
5
6
7
8
9
10

NESTED LOOP

What is Nested Loop?

Nested loop means **a loop statement inside another loop statement**. That is why nested loops are also called as "loop inside loop".

SYNTEX OF NESTED LOOP

Syntax

for(initial value; condition; increment/decrement)

{

for(initial value; condition; increment/decrement)

    {

        //statement of inside loop

    }

//statement of outer loop

}

Example of Nested loop

```c
#include <stdio.h>
int main()
{
   for (int i=0; i<2; i++)
   {
        for (int j=0; j<4; j++)
        {
          printf("%d, %d\n",i ,j);
        }
   }
   return 0;
}
```

Output

```
0, 0
0, 1
0, 2
0, 3
1, 0
1, 1
1, 2
1, 3
```

Thank you!