Looping Statements

A program loop is a series of statements that executes for a specified number of repetitions or until specified conditions are met.
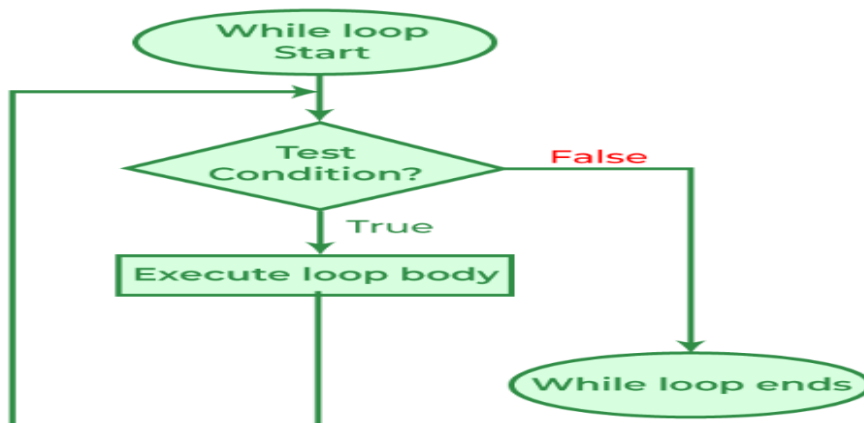
Types

- For
- While
- Do-while

While Loop

While loop does not depend upon the number of iterations. In for loop the number of iterations was previously known to us but in the While loop, the execution is terminated on the basis of the test condition. If the test condition will become false then it will break from the while loop else body will be executed.

Syntax:

initialization_expression;

while (test_expression)

{

   // body of the while loop

     update_expression;

}

PROGRAM:

```c
#include<stdio.h>
int main()
{
int n, reverse=0, rem;
printf("Enter a number: ");
 scanf("%d", &n);
 while(n!=0)
 {
   rem=n%10;
   reverse=reverse*10+rem;
   n/=10;
 }
if(reverse==n)
printf("%d is a palindrome number",n);
  else
printf("%d is not a palindrome number",num);
  return 0;
}
```

OUTPUT:
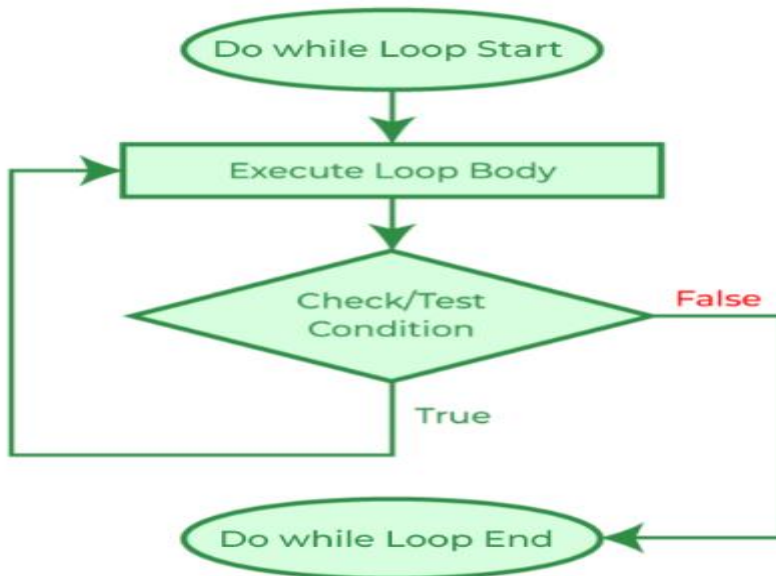
Enter a number: 121
121 is a palindrome number

do-while Loop

The do-while loop is similar to a while loop but the only difference lies in the do-while loop test condition which is tested at the end of the body. In the do-while loop, the loop body will **execute at least once** irrespective of the test condition.

Syntax:

```c
initialization_expression;
do
{
   // body of do-while loop


   update_expression;

} while (test_expression);
```

PROGRAM:

```c
#include <stdio.h>
int main()
{
inti=1, n;
printf("enter the range:\n");
scanf("%d",&n);
do{
printf("%d",i);
printf(",");
i=i+1;
}while(i<=n);
printf("\n");
return 0;
}
```

OUTPUT:

Enter the range:10

1,2,3,4,5,6,7,8,9,10