INSTITUTE OF ENGINEERING, JIWAJI UNIVERSITY
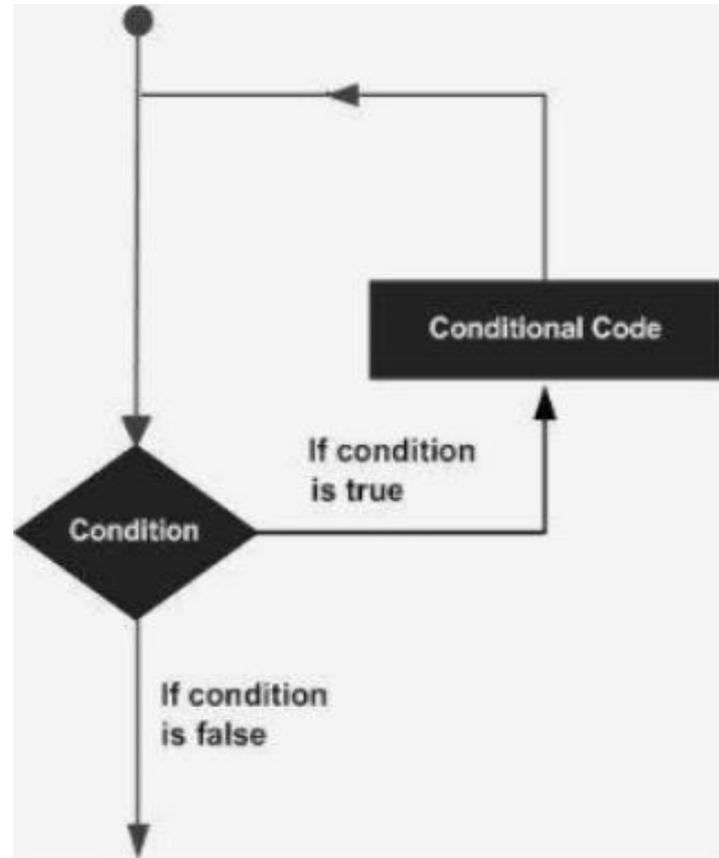
Alpana Sharma

Subject:- (CS-206)

Semester:- B.E. First Semester

Loop Statements

- The loop statements allow a set of instruction to be performed repeatedly until a certain condition is fulfilled .

PART OF A LOOP

- **Initialization Expression(s)** initialize(s) the loop variables in the beginning of the loop.
- **Test Expression** decides whether the loop will be executed (if test expression is true) or not (if test expression is false).
- **Update Expression(s)** update(s) the values of loop variables after every iteration of the loop.
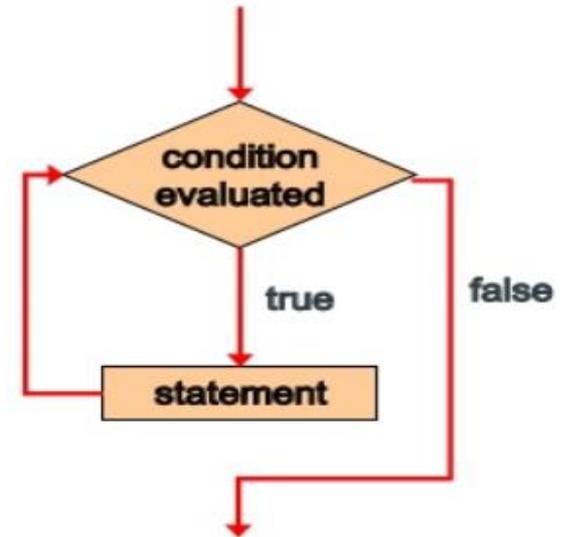- **The Body-of-the-Loop** contains statements to be executed repeatedly.

TYPES OF LOOPS

- **while loop**
- **for loop**
- **do While loop**

while loop

- The syntax of while statement :
  while (loop repetition condition)

  {statement}

- **Loop repetition condition** is the condition which controls the loop.

- The **statement** is repeated as long as the loop repetition condition is **true**.

- A loop is called an **infinite loop** if the loop repetition condition is always true.

EXAMPLE:-

```
#include<stdio.h>
#include<conio.h>
void main(void)
{ int j;
  j=-5;
  //while Loop
  while(j<0)
  { printf("%d  ",j);
   j=j+1;
  }
  getch();
}
```
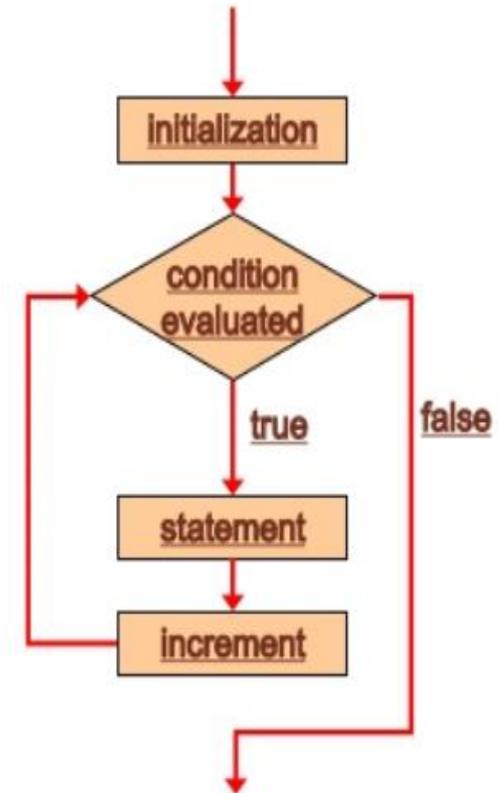
Output:-

-5 -4 -3 -2 -1

for loop

- A for statement has the following syntax:

  for (initialization ; condition; increment/decrememt)
  {
  statement;
  }

- The **initialization** is executed once before the loop begins.

- The **statement** is executed until the condition becomes false.

- The **increment/decrement portion** is executed at the end of each iteration.

EXAMPLE:-

//Program to display table of a given number using for loop.

```
#include<iostream.h>
#include<conio.h>
void main()
{ int n;
  cout<<"\n Enter the Number :";
  cin>>n;
  //For Loop
  for(int i=1;i<=10;i++)
  cout<<"\n"<<n<<"*"<<i<<"="<<n*i;
getch();

}
```

Output:-

Enter Number :3

3*1=3

3*2=6

3*3=9

3*4=12

3*5=15

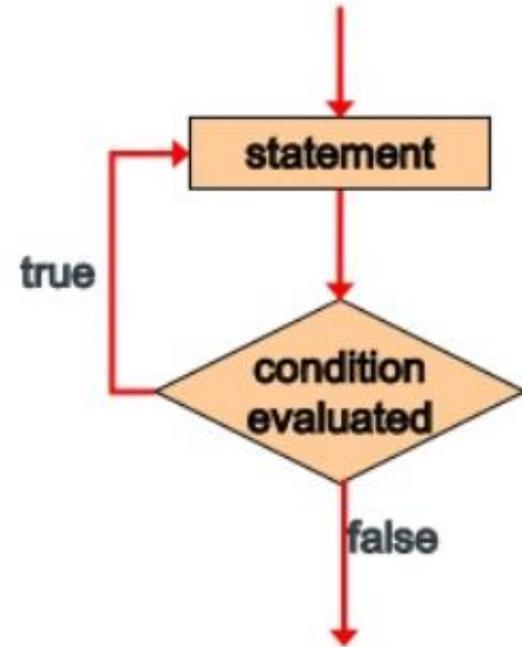3*6=18

3*7=21

3*8=24

3*9=27

3*10=30

do while loop

- The syntax of do-while statement in C++:

do

{

   statement

} while (loop repetition condition);

- The **statement** is first executed.

- If the loop repetition condition is true, the statement is repeated. Otherwise, the loop is exited.

EXAMPLE:-

//Program to display counting from 1 to 10 using do-while loop.

```cpp
#include<iostream.h>
#include<conio.h>
void main()
{ int i=1;
  //do-while loop
 do
 { cout<<"\n"<<i;
   i++;
 }while(i<=10);
getch();
 }
```

Output:-

1

2

3

4

5

6

7

8

9

10

REFERENCE

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THANKS