

# Loops

In computer science, a loop is a programming structure that repeats a sequence of instructions until a specific condition is met.

## The Purpose of the Loop

is to repeat the same, or similar code a number of times.

## The four components of Loops

**Initialization** :- the first component listed inside of the parenthesis of the statement.

**Continuation** :- It is basically a condition part.

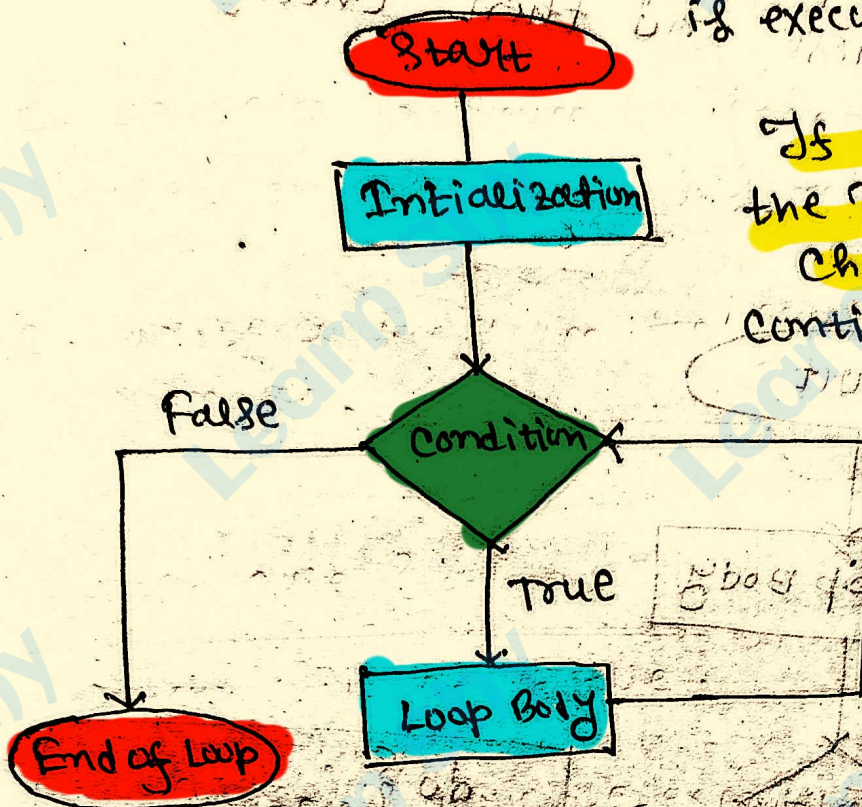
**Iteration / update step** :- The update is executed after each iteration of the loop body.

**Loop body** :- The sequence of the statements to be executed when the continuation test evaluates to true.



## While loop

Flowchart



In while loop the Condition is checked first. If it evaluates true, the body of the loop is executed, otherwise not.

If the loop is entered, the process of condition check and execution is continued until the condition becomes true.

Syntax

while (condition) {

// Statement

// increment (++) or Decrement (-)  
operation

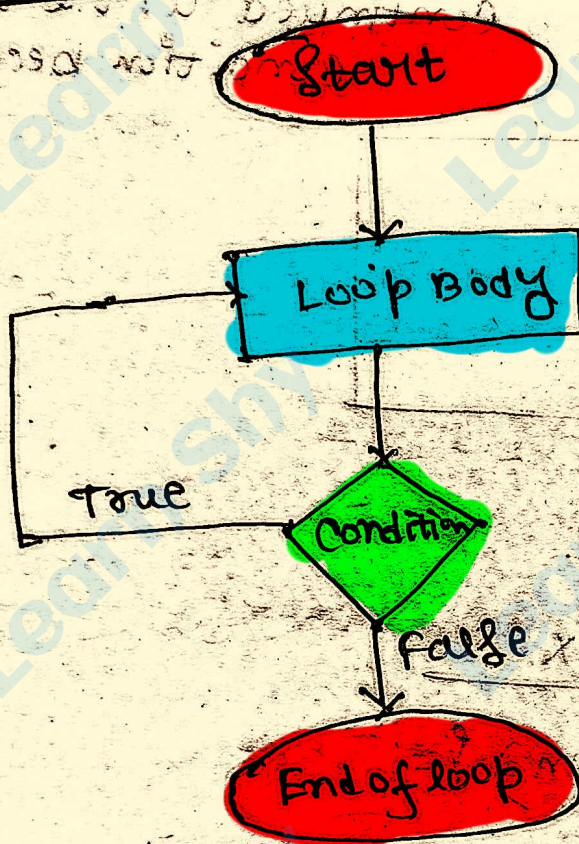
}



## do while Loop

A do while loop executes a block of the statement first and then checks the condition.

### Flowchart



```
do {  
    // Loop Body  
} while (condition)
```

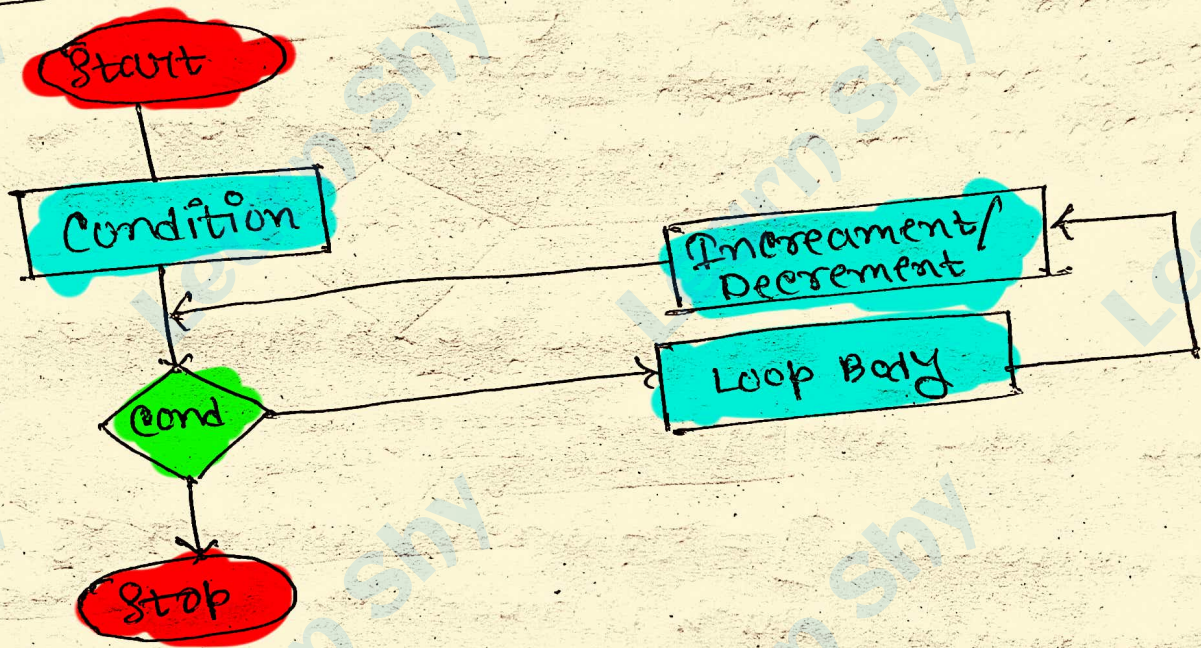


## For Loop

Short cut of while loop.

99% used this loop

### Flowchart



### Syntax

~~for (int i = 1; i <= 10; i++)~~

[ for (initialization, condition, incr/decr)