LOOPS

➢ Loops are repeating statements.

➢ There are four types of loops.

➢ In loops the steps are repeated till the given condition is reached.

WHILE, DO…..WHILE LOOP

➢ **While loop:**

→syntax: while(condition)

{

}

Example program

```
class Test

{
    Public static void main(string args[])
    {
      int i=1,n=100;
      while(i<n)
      {
        System.out.println(i);
        i=i*2;
      }
    }
}
```

➢ The steps are executed if the condition is true.

➢ The condition is checked first and the process is followed.

➢ It is a pre-tested loop

➢ If the condition is false then the process is never executed.

➢ **Do…while loop**

→syntax: do
                {

                        }while(condition)

```
class test

{
  public static void main(string args[])
  {
    int i=1,n=100;
    Do
    {
        System.out.println(i);
        i=i*2;
    }while(i<n)
```

➢ First the process is followed and then the condition is checked.

➢ It is a post-tested loop.

➢ If the condition is false then the process is executed atleast once.

➢ The both loops work for the same purpose.

➢ But do....while loop is more suitable than while loop.

For loop:

➢ For loop is a counter controlled loop.

➢ It is the most frequently used loop.

➢ Syntax: for(initialization; condition; updation)
                {

                }

```
class test

{
  public static void main(string args[])
  {
    for(int i=1;i<=10;i++)
    {
      System.out.println(i);
    }
  }
}
```

➢ At first step a variable is initialised.

➢ At next step the condition Is checked.

➢ At third step the body is executed.

➢ At fourth step the updation is done.

Nested loop:

➢ For loop inside a for loop is he example of nested loop.

➢ The above one is used commonly.

➢ The working of the body is more than one dimensional.

➢ Nesting of any two types of loops can be done.

➢ Nested for loop may create the dimensional loops.

Example program for nested for loop

```java
class test

{
  public static void main(string args[])
  {
    for(int i=1;i<5;i++)
    {
      for(int j=1;j<5;j++)
      {
        System.out.println(i+","+j);
      }
    }
  }
}
```