# Java - Introduction to Programming Lecture 4

# Loops

A loop is used for executing a block of statements repeatedly until a particular condition is satisfied. A loop consists of an initialization statement, a test condition and an increment statement.

## **For Loop**

```
The syntax of the for loop is :
    for (initialization; condition; update) {
        // body of-loop
    }

for (int i=1; i<=20; i++) {
        System.out.println(i);
}

While Loop
The syntax for while loop is:
        while(condition) {
        // body of the loop
      }

int i = 0;
while (i<=20) {
        System.out.println(i);
        i++;
}</pre>
```

## **Do-While Loop**

```
The syntax for the do-while loop is :
    do {
        // body of loop;
    }
    while (condition);
```

```
int i = 0;
do {
    System.out.println(i);
```

```
i++;
} while(i<=20);
```

#### **Homework Problems**

- 1. Print all even numbers till n.
- 2. Run

```
for(; ;) {
          System.out.println("Apna College");
     }
```

loop on your system and analyze what happens. Try to think of the reason for the output produced.

3. Make a menu driven program. The user can enter 2 numbers, either 1 or 0.

If the user enters 1 then keep taking input from the user for a student's marks(out of 100).

If they enter 0 then stop.

If he/ she scores:

```
Marks >=90 -> print "This is Good"

89 >= Marks >= 60 -> print "This is also Good"

59 >= Marks >= 0 -> print "This is Good as well"
```

Because marks don't matter but our effort does.

(Hint: use do-while loop but think & understand why)

#### **BONUS**

Qs. Print if a number is prime or not (Input n from the user).

[In this problem you will learn how to check if a number is prime or not]

## **Apna College**

# **Homework Solution (Lecture 3)**

```
import java.util.*;
public class Conditions {
  public static void main(String args[]) {
       Scanner sc = new Scanner(System.in);
      int a = sc.nextInt();
      int b = sc.nextInt();
      int operator = sc.nextInt();
       switch(operator) {
           case 1 : System.out.println(a+b);
          break;
           case 2 : System.out.println(a-b);
           break;
           case 3 : System.out.println(a*b);
           break;
           case 4 : if(b == 0) {
                       System.out.println("Invalid Division");
                   } else {
                       System.out.println(a/b);
          break;
           case 5 : if(b == 0) {
                       System.out.println("Invalid Division");
                   } else {
                       System.out.println(a%b);
          break;
           default : System.out.println("Invalid Operator");
```