**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++;

}

**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.

1. 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]

**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();**

**/\*\***

**\* 1 -> +**

**\* 2 -> -**

**\* 3 -> \***

**\* 4 -> /**

**\* 5 -> %**

**\*/**

**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");**

**}**

**}**

**}**