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
While Loop
The syntax for while loop is:
      while(condition) {
       // body of the loop
   System.out.println(i);
```

Do-While Loop

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

```
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]

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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");
```