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**Div-B Batch-B1**

**Experiment no-03**

**Experiment name- Implement java programs based on while ,do while and for loop.**

Three types of Conditional statements this second type is loop statement .

- **while loop:** A while loop is a control flow statement that allows code to be executed repeatedly based on a given Boolean condition. The while loop can be thought of as a repeating if statement.

**Syntax :**

```
while (boolean condition) {  
    loop statements...  
}
```

- **for loop:** for loop provides a concise way of writing the loop structure. Unlike a while loop, a for statement consumes the initialization, condition and increment/decrement in one line thereby providing a shorter, easy to debug structure of looping.

**Syntax:**

```
for (initialization condition; testing condition;increment/decrement) {  
    statement(s)  
}
```

- **do while:** do while loop is similar to while loop with only difference that it checks for condition after executing the statements, and therefore is an example of **Exit Control Loop**.

**Syntax:**

```
do {  
    statements..  
}  
while (condition);
```

### 1. Implement a Java program to print multiplication table of user entered number.

Input-

```
import java.util.Scanner;  
class Std10  
{  
    public static void main(String args[])  
    {  
        int num;  
        System.out.println("Enter num to print the  
table");  
        Scanner aa=new Scanner(System.in);  
        num=aa.nextInt();  
        for(int i=1;i<=10;i++)  
        {  
            int table=num*i;  
            System.out.println(+table);  
        }  
    }  
}
```

Output-

```
D:\class work>javac Std10.java  
D:\class work>java Std10.java  
Enter num to print the table  
2  
2  
4  
6  
8  
10  
12  
14  
16  
18  
20  
D:\class work>|
```

2. Implement a Java program to accept an integer number from user and check whether it is an Armstrong number or not. (Armstrong number: e. g.  $153 = 1^3 + 5^3 + 3^3$ )

```
import java.util.Scanner;
```

```
public class Std11
{
    public static void main(String[] args)
    {
        Scanner aa = new Scanner(System.in);
        System.out.print("Enter an integer number: ");
        int number = aa.nextInt();
        int originalNumber = number;
        int sum = 0;

        while (number > 0)
        {
            int digit = number % 10;
            sum += (digit * digit * digit);
            number /= 10;
        }

        if (sum == originalNumber)
        {
            System.out.println(originalNumber + " is an Armstrong number.");
        }
        else
        {
            System.out.println(originalNumber + " is not an Armstrong number.");
        }
    }
}
```

```
D:\class work>javac Std11.java
```

```
D:\class work>java Std11.java
Enter an integer number: 111
111 is not an Armstrong number.
```

Output-

3. Program to print numbers less than 5.

Input-

```
public class Main {
    public static void main(String[] args) {
        int count = 0;
        do {
            System.out.println(count);
            count++;
        }
        while (count < 5);
    }
}
```

Output-

```
C:\Users\LENOVO-PC\Desktop\pradnya_magennavar>javac Main.java
```

```
C:\Users\LENOVO-PC\Desktop\pradnya_magennavar>java Main.java
0
1
2
3
4
```