

Data Structures and Algorithms

CSE2001

Lab - 1 - Assignment - 1

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Problem : Write a Program to find the “factorial” of a given Number

Time Complexity = $O(N)$ or $T(O) = 1$

Codes

```
import java.util.*;
class Factorial {
    public static int fact1(int n){
        int i =1, fact = 1;
        do
        {
            fact = fact * i;
            i++;
        }while (i<=n);

        return fact;
    }
    public static int fact2(int n){
        int i =1,fact = 1;
        for (i = 1; i<=n; i++)
```

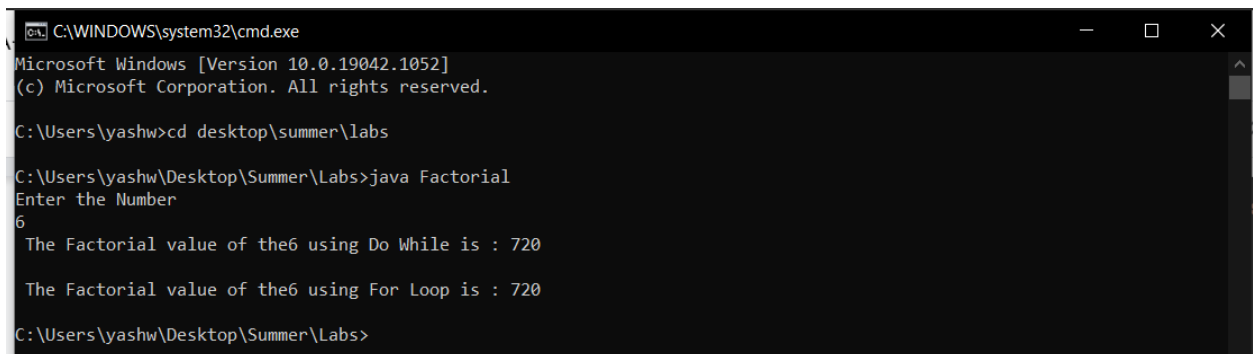
```

    {
        fact = fact * i;
    }
    return fact;
}

public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter the Number");
    int n = sc.nextInt();
    if (n==0){
        System.out.println("Number is 0");
    }
    else{
        System.out.println(" The Factorial value of the"+n+" using Do While is : " +
fact1(n));
        System.out.println(" ");
        System.out.println(" The Factorial value of the"+n+" using For Loop is : " +
fact2(n));
    }
}
}
}

```

Output



```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.19042.1052]
(c) Microsoft Corporation. All rights reserved.

C:\Users\yashw>cd desktop\summer\labs
C:\Users\yashw\Desktop\Summer\Labs>java Factorial
Enter the Number
6
The Factorial value of the6 using Do While is : 720

The Factorial value of the6 using For Loop is : 720
C:\Users\yashw\Desktop\Summer\Labs>

```