OOP Lab: Experiment 2

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Exercise 1: Write a program to find the largest of 3 numbers.

Code:

```java
import java.util.*;


public class Largestof3 {
    void threeNumbers(int a, int b, int c){
        int temp;
        if(a>=b)
            temp=a;
        else
            temp=b;
        if(temp>=c)
            System.out.println("Largest Number: "+temp);
        else
        System.out.println("Largest Number: "+c);
    }

    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter first number: ");
        int a= sc.nextInt();
        System.out.print("Enter second number: ");
        int b= sc.nextInt();
        System.out.print("Enter third number: ");
        int c= sc.nextInt();
        Largestof3 obj = new Largestof3();
        obj.threeNumbers(a,b,c);
        sc.close();
    }
}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd
morphism\src\" ; if ($?) { javac
Enter first number: 5
Enter second number: 0
Enter third number: -5
Largest Number: 5
```

Exercise 2: Write a program to implement a command line calculator. (Try for Add sub Mul Division in same program for 2 digits.)

Code:

```java
public class CL_Calculator {
    void Calc(int x, String c, int y)
    {
        int Output;
        switch (c)
        {
            case "+":
                Output= x+y;
                System.out.println(x + c + y + "= "  + Output);
                break;
            case "-":
                Output= x-y;
                System.out.println(x + c + y + "= "  + Output);
                break;
            case "*":
                Output= x*y;
                System.out.println(x + c + y + "= "  + Output);
                break;
            case "/":
                Output= x/y;
                System.out.println(x + c + y + "= "  + Output);
                break;
            default:
                System.out.println("Wrong Input!");
                break;
        }
    }

    public static void main(String args[])
    {
        int x=Integer.parseInt(args[0]);
        int y=Integer.parseInt(args[2]);
        CL_Calculator obj = new CL_Calculator();
        obj.Calc(x, args[1], y);
    }
}
```

Output:

```
F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Week 2\Week 2 Polymorphism\src>javac CL_Calculator.java

F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Week 2\Week 2 Polymorphism\src>java CL_Calculator 21 / 3
21/3= 7

F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Week 2\Week 2 Polymorphism\src>
```

Exercise 3: Write a program to accept 10 student's marks in an array, arrange it into ascending order, convert into the following grades and print marks and grades in the tabular form.

Code:

```java
import java.util.Scanner;
public class Marks {
    public static void arraysort(float[] arr)
    {
        float temp = 0;
        for(int i=0;i<arr.length;i++)
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]>arr[j])
                {
                    temp = arr[i];
                    arr[i]=arr[j];
                    arr[j]=temp;
                }
            }
        }
    }

    void Report(float[] arr)
    {
        //System.out.println("Enter Marks: \n");
        Scanner sc = new Scanner(System.in);;
        for(int i=0;i<arr.length;i++)
        {
            System.out.println("Enter Marks of Student " + (i+1) + " : ");
            arr[i]= sc.nextInt();
        }
        sc.close();

        arraysort(arr);

        System.out.println("\n-------Report-------\n");
        for(int i=0;i<arr.length;i++)
        {
            if(arr[i]>75)
                System.out.println(arr[i] + ": DISTINCTION");
            else if(arr[i]>=51 && arr[i] <= 75)
                System.out.println(arr[i] + " MERIT");
            else if(arr[i]>=40 && arr[i] <= 50)
                System.out.println(arr[i] + " PASS");
            else
                System.out.println(arr[i] + " Fail");
        }
    }

    public static void main(String[] args)
    {
        float marksarray[];
```

```
        marksarray = new float[10];
        Marks obj = new Marks();
        obj.Report(marksarray);
    }
}
```

Output:

```
2\" ; if ($?) { javac Marks.java
Enter Marks of Student 1 :
56
Enter Marks of Student 2 :
34
Enter Marks of Student 3 :
65
Enter Marks of Student 4 :
76
Enter Marks of Student 5 :
0
Enter Marks of Student 6 :
34
Enter Marks of Student 7 :
67
Enter Marks of Student 8 :
46
Enter Marks of Student 9 :
99
Enter Marks of Student 10 :
08

-------Report-------

0.0 Fail
8.0 Fail
34.0 Fail
34.0 Fail
46.0 PASS
56.0 MERIT
65.0 MERIT
67.0 MERIT
76.0: DISTINCTION
99.0: DISTINCTION
PS F:\UPES\Academics\2nd Year\3rd
```

Exercise 4: WAP to Take input as DD MM YYYY(04 08 2021) incommand line and calculate number of days since 1 January 1970.

Code:

```
public class lab2_Days
{



    public static void main(String args[])
```

```java
    {
        int d = Integer.parseInt(args[0]);
        int m = Integer.parseInt(args[1]);
        int y = Integer.parseInt(args[2]);

        int monthDays[] = {31, 59, 90, 120, 151, 181, 212, 243, 273, 304, 334,
365};

        int dyear = y - 1970;
        int x, num = 0;

        for(x = 1970; x<=y; x++)
        {
            if(x%4 == 0 && x%400 == 0 && x%100 != 0){
                num++;
            }
        }

        int days;

        days = dyear*365 + monthDays[m-2] + d + num;
        System.out.println("Total days = " + days);
    }
}
```

Output:

```
PS E:\codes\java> java lab2_Days 12 08 2021
Total days = 18839
PS E:\codes\java>
```

Exercise 5: WAP to print the following pattern using loops

```
*
**
***
```

Code:

```java
public class Pattern
{
    void printpattern()
    {
        int n=3;
        for(int i=0; i<n; i++)
        {
            for(int j=0; j<(2*i+1); j++)
            {
                System.out.print("*");
            }
            System.out.println("\n");
        }
    }
```

```
    public static void main(String[] args)
    {
        Pattern obj = new Pattern();
        obj.printpattern();
    }
}
```

Output:

```
PS F:\UPES\Academics\
-OOP\LAB\Week 3\Exper
*

***

*****

PS F:\UPES\Academics\
```