UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

EXPERIMENT-2

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BATCH: 1(CCVT)
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ROLL NO. : R2142231013
SUBJECT: OOPS
SUBMITTED TO: Dr Satyam Tiwari

1. Print this Pattern:

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

```java
public static void main(String[] args) {
    int rows = 7;
    for (int i = 0; i < rows; i++)
    {

        for (int j = 0; j < i; j++)
        {
            System.out.print(s:" ");
        }

        for (int k = 0; k < rows - i; k++)
        {
            System.out.print(s:"*");
        }
        System.out.println();
    }
}
```

```
kinjal@Kinjals-MacBook-Air practice %  /usr/bin/env /Library/Java/Ja
ailsInExceptionMessages -cp /Users/kinjal/Library/Application\ Suppo
va/jdt_ws/practice_1152ccd8/bin Ass1
*******
 *****
  *****
   ****
    ***
     **
      *
kinjal@Kinjals-MacBook-Air practice %
```

Write a program to find the area of a shape (Rectangle, Square, Circle, Triangle) using method overloading.

area.java > ...

~/Desktop/Projects /java/practice/area.java

```java

    public int areacal(int sides) {
        int area = sides * sides;
        return area;
    }


    public int areacal(int l, int b) {
        int area = l * b;
        return area;
    }


    public double areacal(double radius) {
        double piv = 3.14;
        double area = piv * radius * radius;
        return area;
    }


    public double areacal(int b, double h) {
        double area = 0.5 * b * h;
        return area;
    }

Run | Debug
    public static void main(String[] args) {
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
kinjal@Kinjals-MacBook-Air practice %  /usr/bin/env /Library/Java/JavaVirtualMac
ailsInExceptionMessages -cp /Users/kinjal/Library/Application\ Support/Code/User
va/jdt_ws/practice_1152ccd8/bin area
Area of square: 25
Area of rectangle: 24
Area of circle: 38.465
Area of triangle: 13.0
kinjal@Kinjals-MacBook-Air practice %
```

1. Write a Java program that takes an operator (+, -, *, /, %) and two numbers as input from the user. Use a **switch statement** to perform the specified operation and display the result.

Calculator.java > ...

```java
import java.util.*;

public class Calculator {
    Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);


        System.out.print(s:"Enter an operator (+, -, *, /, %): ");
        char operator = scanner.next().charAt(index:0);


        System.out.print(s:"Enter the first number: ");
        double num1 = scanner.nextDouble();

        System.out.print(s:"Enter the second number: ");
        double num2 = scanner.nextDouble();

        double result;


        switch (operator) {
            case '+':
                result = num1 + num2;
                System.out.println("Result: " + result);
                break;

            case '-':
                result = num1 - num2;
                System.out.println("Result: " + result);
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
kinjal@Kinjals-MacBook-Air practice %  /usr/bin/env /Library/Java/JavaVirtualMachi
ailsInExceptionMessages -cp /Users/kinjal/Library/Application\ Support/Code/User/w
va/jdt_ws/practice_1152ccd8/bin Calculator
Enter an operator (+, -, *, /, %): +
Enter the first number: 2
Enter the second number: 10
Result: 12.0
kinjal@Kinjals-MacBook-Air practice %
```

1. Write a Java program that calculates the electricity bill based on the number of units consumed by a user. The electricity charges are determined as follows:

- For consumption between **1 and 100 units**, the cost is **Rs 5 per unit**.
- For consumption between **101 and 200 units**, the cost is **Rs 7 per unit**.
- For consumption between **201 and 300 units**, the cost is **Rs 10 per unit**.
- For consumption exceeding **300 units**, the cost is **Rs 15 per unit**.

The program should:

1. Take the total units consumed as input.
2. Calculate the total electricity bill based on the charges above.
3. Display the total electricity bill.

bill.java > ...

```java
import java.util.Scanner;
public class bill
{


    Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter the total units consumed: ");
        int units = scanner.nextInt();

        int billAmount = 0;

        if (units <= 100) {
            billAmount = units * 5;
        } else if (units <= 200) {
            billAmount = (100 * 5) + ((units - 100) * 7);
        } else if (units <= 300) {
            billAmount = (100 * 5) + (100 * 7) + ((units - 200) * 10);
        } else {
            billAmount = (100 * 5) + (100 * 7) + (100 * 10) + ((units - 300) * 15);
        }

        System.out.println("Total Electricity Bill: Rs " + billAmount);

        scanner.close();
    }
}

```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
kinjal@Kinjals-MacBook-Air practice %  /usr/bin/env /Library/Java/JavaVirtualMachines/temurin-17.jdk/
ailsInExceptionMessages -cp /Users/kinjal/Library/Application\ Support/Code/User/workspaceStorage/b0
va/jdt_ws/practice_1152ccd8/bin bill
Enter the total units consumed: 5
Total Electricity Bill: Rs 25
kinjal@Kinjals-MacBook-Air practice %
```