Laboratory -1: Java Basic

Task - 1:

1. create a java file hello.java
2. save it to local drive c within a folder
3. access this path : C:\Program Files\Java\jdk-22\bin
4. open cmd there
5. access this path now (that folder you've created earlier)
    1. command : cd C:\tori
    2. command : dir (to watch how many files there)
6. now execute this command : javac hello.java (your program file)
7. and finally to run a java program execute this command : java hello (according to filename) and then boom!!

Task - 2:

1. Open Jcreator
2. Running the programs with Jcreator.

Task - 3:

1. Open Jcreator ✅
2. Configure Jcreator first ✅
3. Did open the program with Jcreator [SquareRoot.java] text-editor ✅

Task - 4:

1. Build this program
2. Run this program

a. Damn!! I got an error:
SquareRoot.java:15: error: ';' expected
Y=Math.sqrt(x)

b. so , the error is all about semicolons (;)
c. After executing second time i got another error:
SquareRoot.java:16: error: cannot find symbol
System.out.println("Y= "+ y);
^
symbol: variable y
d. So the problem is with the variable name is in lower Case (y) where the original variable is in upperCase (Y)
e. This time the program is working just fine. 😂

3. import java.lang.Math; Why do you need this line?
In order to use Math functionalities I need this line to import java.lang.Math.
On the other hand If I do not import **java.lang.Math** still the program will run smoothly. It's because the **java.lang** package is imported by default.

Lab Test - 1 :

a. Explain the necessity of the following line:
import javax.swing.JOptionPane;

Answer:

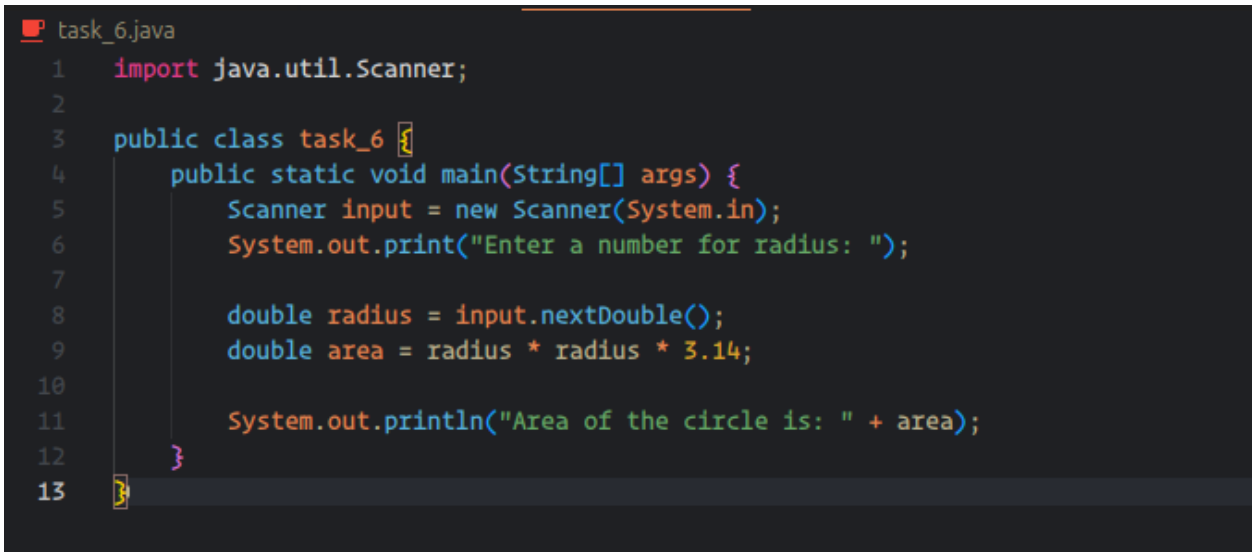
The **import javax.swing.JOptionPane** is essential for using the JOption class in our java code.

This package is in java swing library, which provides a set of GUI components for creating Graphical user interfaces

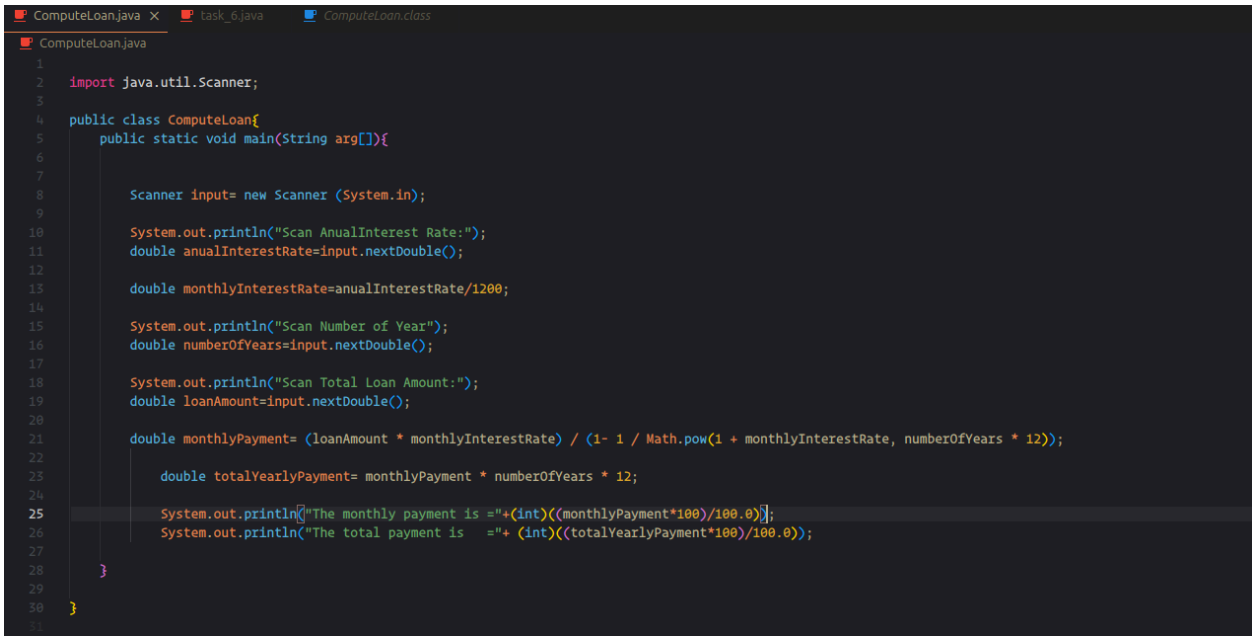
JOptionPane is designed for creating standard dialog boxes, such as message boxes, input dialogs, and confirmation dialogs.

Task 5: [didn't find the program] 🔍

Task 6: Write a program to compute the area of the circle.



Task 7: Compute and Run “ComputeLoan.java” program. ✅



```java
import java.util.Scanner;

public class ComputeLoan{
    public static void main(String arg[]){


        Scanner input= new Scanner (System.in);

        System.out.println("Scan AnualInterest Rate:");
        double anualInterestRate=input.nextDouble();

        double monthlyInterestRate=anualInterestRate/1200;

        System.out.println("Scan Number of Year");
        double numberOfYears=input.nextDouble();

        System.out.println("Scan Total Loan Amount:");
        double loanAmount=input.nextDouble();

        double monthlyPayment= (loanAmount * monthlyInterestRate) / (1- 1 / Math.pow(1 + monthlyInterestRate, numberOfYears * 12));

            double totalYearlyPayment= monthlyPayment * numberOfYears * 12;

            System.out.println("The monthly payment is ="+(int)((monthlyPayment*100)/100.0));
            System.out.println("The total payment is   ="+ (int)((totalYearlyPayment*100)/100.0));

    }

}
```

Why do we need type casting in the following line of code?

Ans :

Type Casting to ‘ int ‘ effectively rounds down the value, avoiding any fractional part.