1. Write a program to get the following output.

   Hey there,

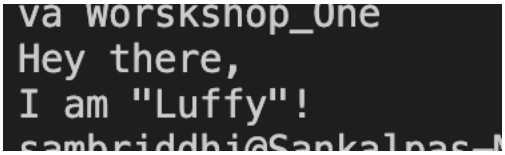
   I am “*some data*”! (assign a variable and print the variable data)

   -> Source Code:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        String data = "Luffy";
        System.out.println(x:"Hey there,");
        System.out.println("I am \""+ data + "\"!" );
    }
}
```

Output:



2. Write a program to print the difference and product of numbers 45 and 32.

   -> Source Code:

```java
// 2. Write a program to print the difference and product of numbers 45 and 32.

public class Worskshop_One {
    Run | Debug
    public static void main(String[] args) {
        int num1 = 45 ;
        int num2 = 32;

        int difference = num1 - num2;
        int product = num1 * num2;

        System.out.println("Difference: " + difference);
        System.out.println("Product: "  + product);

    }

}
```

Output:

```
sambriddhi@Sankalpas-MacB
Difference: 13
Product: 1440
sambriddhi@Sankalpas-MacB
```

3. Write a Java program to print an int, a double, and a char on the screen.

   -> Source Code:

```java
//  3. Write a Java program to print an int, a double, and a char on the screen.
/**
 * Worskshop_One
 */
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        int integer = 23;
        double d_num = 23.3432;
        char character = 'D' ;

        System.out.println("An int: " + integer);
        System.out.println("A double: " + d_num);
        System.out.println("A char: " + character);

    }
}
```

Output:

```
sambriddhi@Sankalpas-MacBook-Pro W
An int: 23
A double: 23.3432
A char: D
sambriddhi@Sankalpas-MacBook-Pro W
```

4. Write a program to calculate the area of a triangle.

$$A = \sqrt{s(s - a)(s - b)(s - c)}$$

Where s is the semi-perimeter of the triangle s = (a+b+c)/2

-> Source Code:

```java
import java.lang.Math;
import java.util.Scanner;
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        Scanner num1 = new Scanner(System.in);
        System.err.println(x:"Enter a side of a triangle: ");
        int a = num1.nextInt();
        Scanner num2 = new Scanner(System.in);
        System.err.println(x:"Enter second side of a triangle: ");
        int b = num2.nextInt();
        Scanner num3 = new Scanner(System.in);
        System.err.println(x:"Enter the third side of a triangle: ");
        int c = num3.nextInt();
        double s = (a+b+c) /2;
        double area = Math.sqrt(s*(s-a)*(s-b)*(s-c));
        System.out.println("The are of triangle is: " + area);

        num1.close();
        num2.close();
        num3.close();
    }
}
```

Output:

```
Enter a side of a triangle:
3
Enter second side of a triangle:
4
Enter the third side of a triangle:
5
The are of triangle is: 6.0
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

5. Write a Java program to calculate the area of a square. Prompt the user to enter the length of one side and then display the result. Ensure that the program handles user input as a double data type.

   -> Source Code:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        Scanner side = new Scanner(System.in);
        System.err.println(x:"Enter a side of a square: ");
        double a = side.nextDouble();
        double areaOfSquare = Math.pow(a, b:2);
        System.out.println("The area of square is: " + areaOfSquare);
        side.close();
    }
}
```

Output:

```
sambriddhi@Sankalpas-MacBook-Pro Workshop % cd "/Us
Enter a side of a square:
2.2
The area of square is: 4.840000000000001
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

6. Create a Java program that converts a temperature in Celsius to Fahrenheit. Prompt the user to enter the temperature in Celsius, perform the conversion using the formula (F = C * 9/5 + 32), and display the result as a double.

   -> Source Code:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        Scanner temp = new Scanner(System.in);
        System.err.println(x:"Enter temperature in Celcius: ");
        double celcius = temp.nextDouble();
        double Fahrenheit = celcius * 9/5 + 32;
        System.out.println("The required Farenheit temperature is: " + Fahrenheit + "°F");
        temp.close();
    }
}
```

   Output->

```
sambriddhi@Sankalpas-MacBook-Pro Workshop % cd "/Users/s
Enter temperature in Celcius:
36.8
The required Farenheit temperature is: 98.24°F
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

7. Develop a Java program that calculates the volume of a cylinder. Prompt the user to enter the radius and height of the cylinder and then display the result. Ensure that the program uses appropriate data types for calculation and output.

   -> Source Code:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        // pi r ^2 h
        Scanner r = new Scanner(System.in);
        System.out.println(x:"Enter radius of cylinder: ");
        double radius = r.nextDouble();
        Scanner h = new Scanner(System.in);
        System.err.println(x:"Enter height of cylinder: ");
        double height = h.nextDouble();
        double volume = 3.14 * Math.pow(radius, b:2) * height;
        System.out.println("The volume od the cylinder is: " + volume);
        r.close();
        h.close();
    }
}
```

   Output->

```
sambriddhi@Sankalpas-MacBook-Pro Workshop % cd "/Us
Enter radius of cylinder:
3
Enter height of cylinder:
3.7
The volume od the cylinder is: 104.56200000000001
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

8. Write a Java program that calculates the simple interest on a loan. Prompt the user to enter the principal amount, the rate of interest, and the time period. Calculate and display the interest amount as a double.
-> Source Code:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        // p, r, t
        Scanner p = new Scanner(System.in);
        System.out.println(x:"To calculate simple interest on a loan:");
        System.out.println(x:"Enter principal amount: ");
        double principal = p.nextDouble();
        Scanner r = new Scanner(System.in);
        System.out.println(x:"Enter rate of interest: ");
        double rateInt = r.nextDouble();
        Scanner t = new Scanner(System.in);
        System.out.println(x:"Enter the time period (in years): ");
        double time = t.nextDouble();

        double interest = principal * rateInt * time / 100;
        System.out.println("The simple interest is: " + interest);
    }
}
```

Output:

```
sambriddhi@Sankalpas-MacBook-Pro Workshop % cd "/
To calculate simple interest on a loan:
Enter principal amount:
1000
Enter rate of interest:
4.5
Enter the time period (in years):
2
The simple interest is: 90.0
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

9. Create a Java program that takes two integer inputs from the user, performs all basic arithmetic operations (addition, subtraction, multiplication, and division) on these numbers, and displays the results.

   -> Source Code:

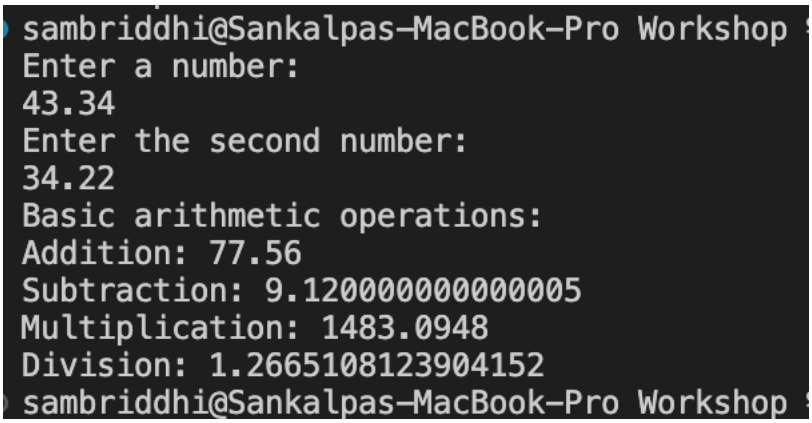
```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        Scanner a = new Scanner(System.in);
        System.out.println(x:"Enter a number: ");
        double num1 = a.nextDouble();
        Scanner b = new Scanner(System.in);
        System.out.println(x:"Enter the second number: ");
        double num2 = b.nextDouble();

        double add = num1 + num2;
        double sub = num1 - num2;
        double multiplication = num1 * num2;
        double division = num1 / num2;
        System.out.println(x:"Basic arithmetic operations: ");
        System.out.println("Addition: " + add);
        System.out.println("Subtraction: " + sub);
        System.out.println("Multiplication: " + multiplication);
        System.out.println("Division: " + division);
        a.close();
        b.close();

    }
}
```

Output->


sambriddhi@Sankalpas-MacBook-Pro Workshop
Enter a number:
43.34
Enter the second number:
34.22
Basic arithmetic operations:
Addition: 77.56
Subtraction: 9.120000000000005
Multiplication: 1483.0948
Division: 1.2665108123904152
sambriddhi@Sankalpas-MacBook-Pro Workshop

10. Write a Java program that calculates the perimeter of a rectangle. Prompt the user to enter the length and width of the rectangle, and then display the result. Use appropriate data types for calculation and output.

-> Source Code:

```java
public class Worskshop_One{
    Run | Debug
    public static void main(String[] args) {
        System.out.println(x:"To calculate the perimeter of a rectangle");
        Scanner a = new Scanner(System.in);
        System.out.println(x:"Enter length: ");
        double length = a.nextDouble();
        System.out.println(x:"Enter width: ");
        double width = a.nextDouble();
        double perimeter = 2 * ( length + width);
        System.out.println("The  perimeter of a rectangle is: " + perimeter);
        a.close();
    }
}
```

Output:

```
To calculate the perimeter of a rectangle
Enter length:
7
Enter width:
4.5
The  perimeter of a rectangle is: 23.0
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

11. Develop a Java program that converts miles to kilometers. Prompt the user to enter the distance in miles and display the equivalent distance in kilometers as a double.

->

SourceCode:

```java
11.    Develop a Java program that converts miles to kilometers.
Prompt the user to enter the distance in miles and display the equivalent distance in kilometers as a double.*/
public class Worskshop_One {
    Run | Debug
    public static void main(String[] args) {
        System.out.println(x:"Miles -> Kilometer: ");
        Scanner a = new Scanner(System.in);
        System.out.println(x:"Enter distance in terms of miles: ");
        double miles = a.nextDouble();
        double kilometer = miles * 1.60934;
        System.out.println(miles +" miles = " +kilometer + "km");

        a.close();
    }

}
```

Output:

```
Miles -> Kilometer:
Enter distance in terms of miles:
2
2.0 miles = 3.21868km
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

12. Create a Java program that computes the area of a circle. Prompt the user to enter the radius and display the result as a double. Use the formula (Area = π * r * r) for the calculation.

->Sourcecode:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        System.out.println(x:"For are of a circle: ");
        Scanner a = new Scanner(System.in);
        System.out.println(x:"Enter radius of the circle: ");
        double radius = a.nextDouble();
        double area = Math.PI * Math.pow(radius, b:2);
        System.out.println("The area of the circle is: " + area);
        a.close();
    }
}
```

```
sambriddhi@Sankalpas-MacBook-Pro Workshop % cd "/
For are of a circle:
Enter radius of the circle:
3
The area of the circle is: 28.274333882308138
sambriddhi@Sankalpas-MacBook-Pro Workshop %
```

13. Develop a Java program that calculates the total cost of purchasing a given quantity of items at a certain price per item. Prompt the user to enter the quantity and price, and display the total cost as a double.

->Sourcecode:

```java
public class Worskshop_One {

    Run | Debug
    public static void main(String[] args) {
        Scanner a = new Scanner(System.in);
        System.out.println(x:"Enter the cost:");
        double cost = a.nextDouble();
        System.out.println(x:"Enter the number of items purchased");
        double number = a.nextDouble();
        System.out.println("The tosl cost is: " + (cost * number ) );
        a.close();
    }
}
```

```
Enter the cost:
120.5
Enter the number of items purchased
10
The tosl cost is: 1205.0
sambriddhi@Sankalpas-MacBook-Pro Workshop
```

14. Write a Java program that converts a given amount of money in U.S. dollars to another currency (e.g., rupees). Prompt the user to enter the amount and the exchange rate, and display the converted amount as a double.

->Sourcecode:

```java
public class Worskshop_One {
    Run | Debug
    public static void main(String[] args) {
        Scanner a = new Scanner(System.in);
        System.out.println(x:"US Dollar => Nepali Rupees");
        System.out.println(x:"Enter the amount to US dollars:");
        double dollar = a.nextDouble();
        double rupees = dollar * 133.43;
        System.out.println("$" +dollar + " = Rs." + rupees);
    }

}
```

Output ->

```
US Dollar => Nepali Rupees
Enter the amount to US dollars:
130
$130.0 = Rs.17345.9
sambriddhi@Sankalpas-MacBook-Pro Workshop
```