

1. Write a program to get the following output.  
Hey there,  
I am "some data"! (assign a variable and print the variable data)

```
Run | Debug
public static void main(String[] args) {
    Scanner sc = new Scanner(System.in); {
        System.out.print("Enter the first line to print :");
        String a = sc.nextLine();
        System.out.print("Enter a Second line to print : ");
        String b = sc.nextLine();

        System.out.println(a);
        System.out.println(b);
        sc.close();
    }
}
```

```
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Enter the first line to print :Hey there,
Enter a Second line to print : I am "some data"!
Hey there,
I am "some data"!
```

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

```
Run | Debug
public static void main(String [] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("Enter the first number : ");
    int a = sc.nextInt();
    System.out.print("Enter the Second number : ");
    int b = sc.nextInt();

    int diff = a - b;
    System.out.println("The diff : " + diff);

    int pro = a * b;
    System.out.println("The prod : " + pro);
}

PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Enter the first number : 45
Enter the Second number : 32
The diff : 13
The prod : 1440
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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

```

public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("int :");
    int a = sc.nextInt();
    System.out.print("double :");
    double b = sc.nextDouble();
    System.out.print("Enter char : ");
    String c = sc.nextLine();

    System.out.println(a);
    System.out.println(b);
    System.out.println(c);
}

PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
int :10
double :2.2
Enter char : 10
2.2

```

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  $s = (a+b+c)/2$

//4.Are tringle

Run | Debug

```
public static void main (String[] arg) {  
    Scanner sc = new Scanner(System.in);  
    System.out.print("Side 1  : ");  
    double a = sc.nextDouble();  
    System.out.print("side 2  : ");  
    double b = sc.nextDouble();  
    System.out.print("side 3  : ");  
    double c = sc.nextDouble();  
  
    double s = (a + b + c)/2;  
  
    System.out.println("Area : " + a);  
}
```

side 2 : 20

side 3 : 30

Area : 10.0

PS C:\Users\SUMIT SHAH\Desktop\oops>

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.

```
// //5
Run | Debug
public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("Length : ");
    double l = sc.nextDouble();
    double a = Math.pow(l,2);

    System.out.println("Area : " + a);
}
PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Length : 10
Area : 100.0
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

```
Run | Debug
93 public static void main(String [] args) {
94     Scanner sc = new Scanner(System.in);
95     System.out.print("Enter Temperature(Celsius) : ");
96     double c = sc.nextDouble();
97
98     double f = (c * (9/5) + 32);
99     System.out.println("Temperature(Fahrenheit) : " + f );
100 }
101
102
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Enter Temperature(Celsius) : 25
Temperature(Fahrenheit) : 57.0
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

```
106
107 //7
Run | Debug
108 public static void main(String[] args) {
109     Scanner sc = new Scanner(System.in);
110     System.out.print("Radius : ");
111     double r = sc.nextDouble();
112     System.out.print("height : ");
113     double h = sc.nextDouble();
114
115     double a = (Math.PI * Math.pow(r,2) * h);
116
117     System.out.println("Volume : " + a);
118 }
119
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
height : 10
Volume : 785.3981633974483
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

```
124 // //8.
Run | Debug
125 public static void main(String[] args) {
126     Scanner sc = new Scanner(System.in);
127     System.out.print("Principle : ");
128     double p = sc.nextDouble();
129     System.out.print("Time : ");
130     double t = sc.nextDouble();
131     System.out.print("Rate : ");
132     double r = sc.nextDouble();
133
134     double s = (p * t * r)/100;
135
136     System.out.println("SimpleIntrest : " + s);
137 }
138
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Principle : 1000
Time : 5
Rate : 8
SimpleIntrest : 400.0
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

```
public static void main(String [] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("a : ");
    double a = sc.nextDouble();
    System.out.print("b : ");
    double b = sc.nextDouble();
    System.out.print("c : ");
    double c = sc.nextDouble();

    double add = a + b + c;
    double sub = a - b - c;
    double mul = a * b * c;
    double div = a / b / c;

    System.out.println("Addition : " + add);
    System.out.println("Subbtraction : " + sub);
    System.out.println("Multiplication : " + mul);
    System.out.println("Division : " + div);
}

PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
a : 10
b : 20
c : 30
Addition : 60.0
Subbtraction : -40.0
Multiplication : 6000.0
Division : 0.016666666666666666
PS C:\Users\SUMIT SHAH\Desktop\oops>
```

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.

```
168 // //10.
169 Run | Debug
170 public static void main(String[] args) {
171     Scanner sc = new Scanner(System.in);
172     System.out.print("Length : ");
173     double l = sc.nextDouble();
174     System.out.print("Width : ");
175     double w = sc.nextDouble();
176
177     double p = (2 * (l + w));
178
179     System.out.println("Perimeter : " + p);
180 }
181
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Length : 10
Width : 5
Perimeter : 30.0
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

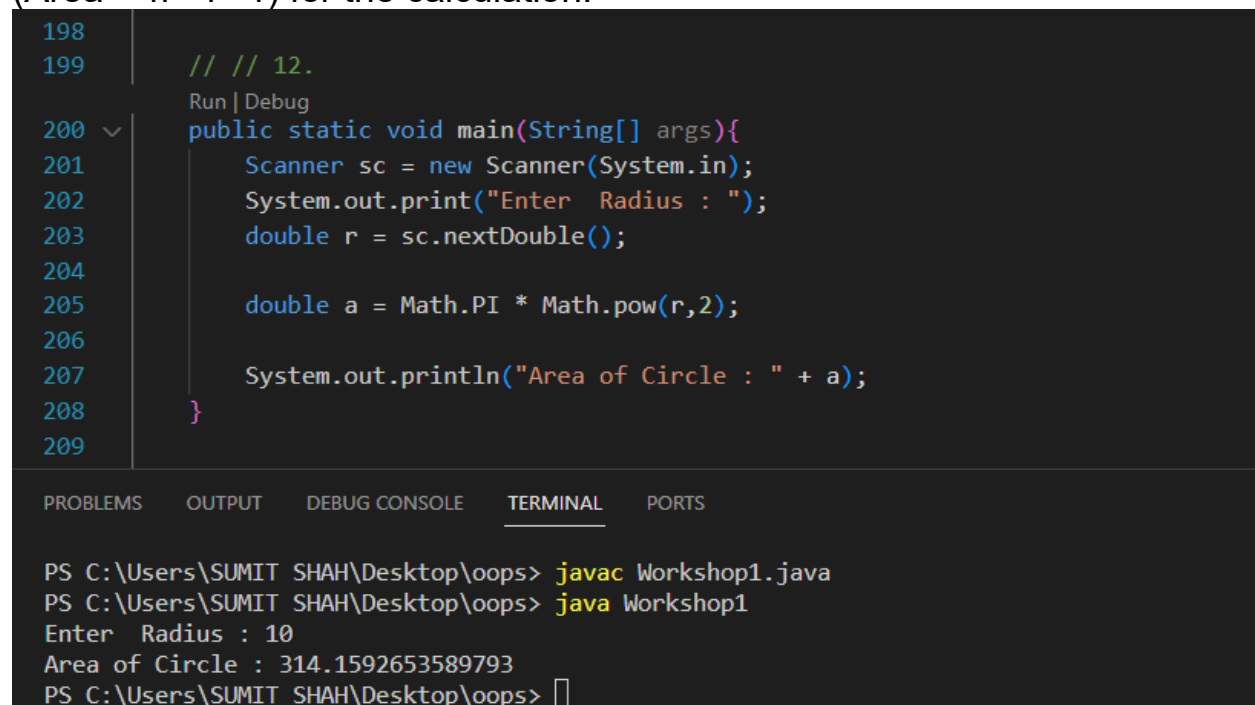
```
183 // //11.
184 Run | Debug
185 public static void main(String [] arg) {
186     Scanner sc = new Scanner(System.in);
187     System.out.print("Distance (Mile) : ");
188     double m = sc.nextDouble();
189
190     double k = m * 1.609344;
191
192     System.out.println("Distance : " + k + "Killometer");
193 }
194
195
196
197
198
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Distance (Mile) : 400
Distance : 643.7376Killometer
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```



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 ( $\text{Area} = \pi * r * r$ ) for the calculation.



The screenshot shows an IDE with a Java program for calculating the area of a circle. The code is as follows:

```
198
199 // // 12.
    Run | Debug
200 public static void main(String[] args){
201     Scanner sc = new Scanner(System.in);
202     System.out.print("Enter Radius : ");
203     double r = sc.nextDouble();
204
205     double a = Math.PI * Math.pow(r,2);
206
207     System.out.println("Area of Circle : " + a);
208 }
209
```

Below the code editor, the 'TERMINAL' tab is active, showing the execution of the program:

```
PS C:\Users\SUMIT SHAH\Desktop\oops> javac Workshop1.java
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Enter Radius : 10
Area of Circle : 314.1592653589793
PS C:\Users\SUMIT SHAH\Desktop\oops> 
```

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.

```

214 // // 13.
Run | Debug
215 public static void main(String [] arg){
216     Scanner sc = new Scanner(System.in);
217     System.out.print("Quantity : ");
218     double q = sc.nextDouble();
219     System.out.print("Price : ");
220     double p = sc.nextDouble();
221
222     double t = q * p;
223
224     System.out.println("Total cost : " + p);
225 }
226
227
228
229
230 // 14.

```

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```

PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1
Quantity : 100
Price : 1000
Total cost : 1000.0
PS C:\Users\SUMIT SHAH\Desktop\oops> 

```

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.

```
229  
230 // 14.  
231 Run | Debug  
232 public static void main(String[] args) {  
233     Scanner sc = new Scanner(System.in);  
234     System.out.print("Enter dollor amount : ");  
235     double a = sc.nextDouble();  
236     System.out.print("Enter the rate : ");  
237     double r = sc.nextDouble();  
238  
239     double m = a * r;  
240  
241     System.out.println("Amount of money : " + m);  
242 }  
243 }  
244
```

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```
PS C:\Users\SUMIT SHAH\Desktop\oops> java Workshop1  
Enter dollor amount : 10  
Enter the rate : 130  
Amount of money : 1300.0  
PS C:\Users\SUMIT SHAH\Desktop\oops> |
```