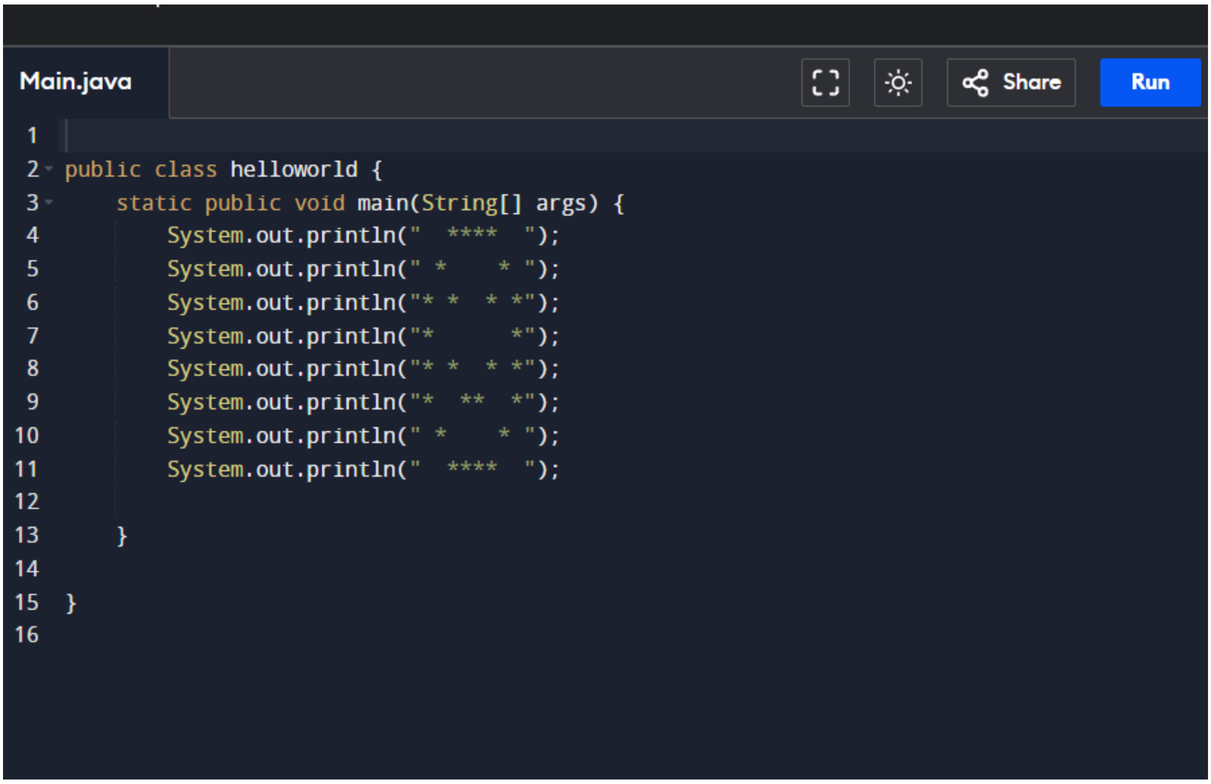
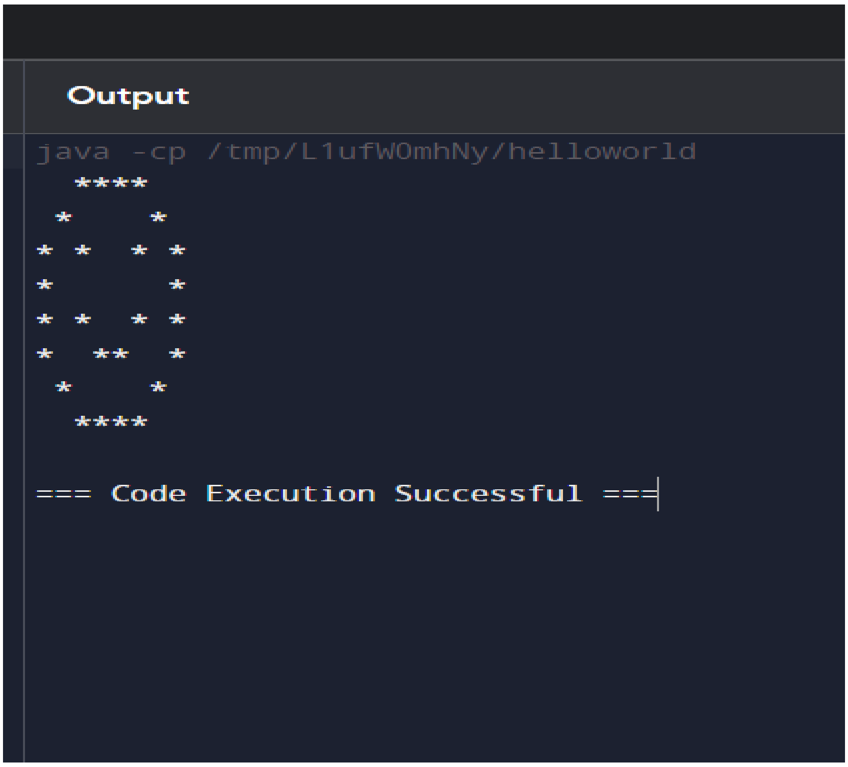
MODULE-2

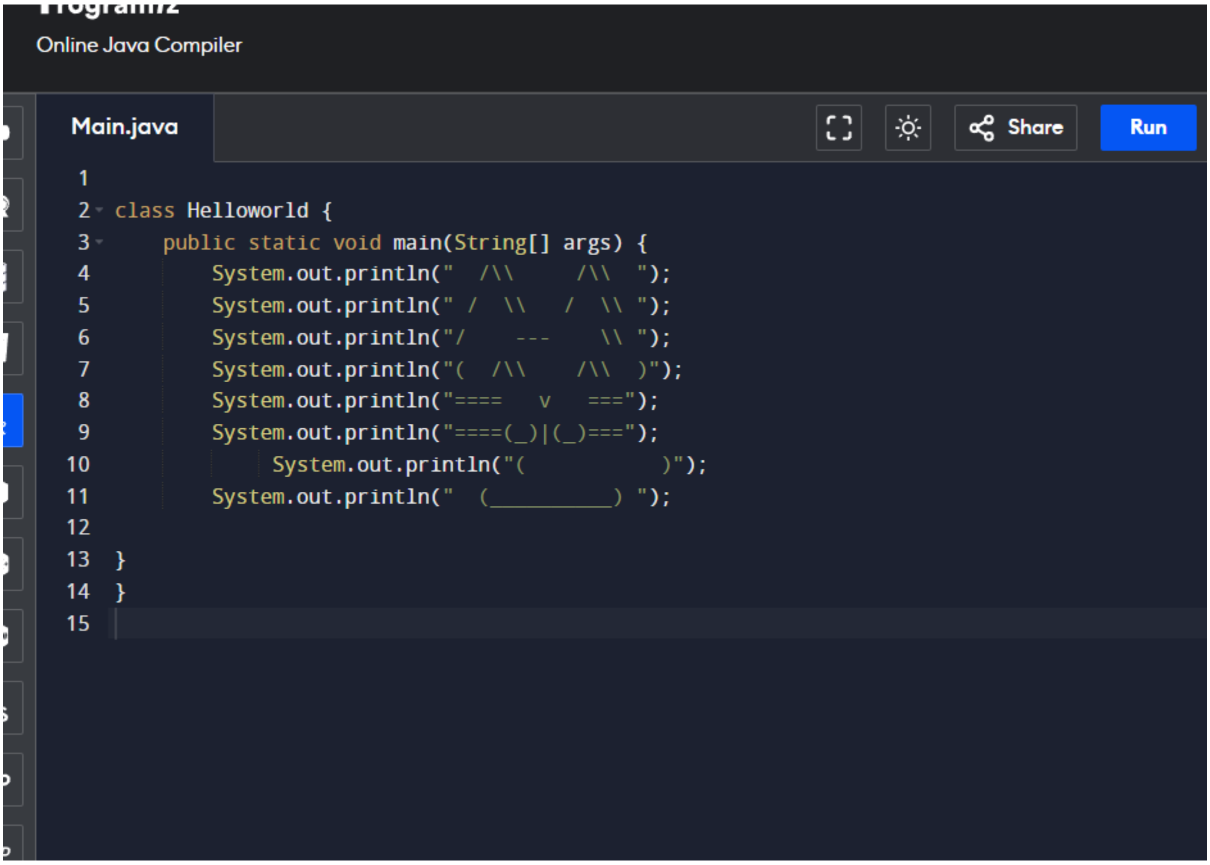
SECTION-2:



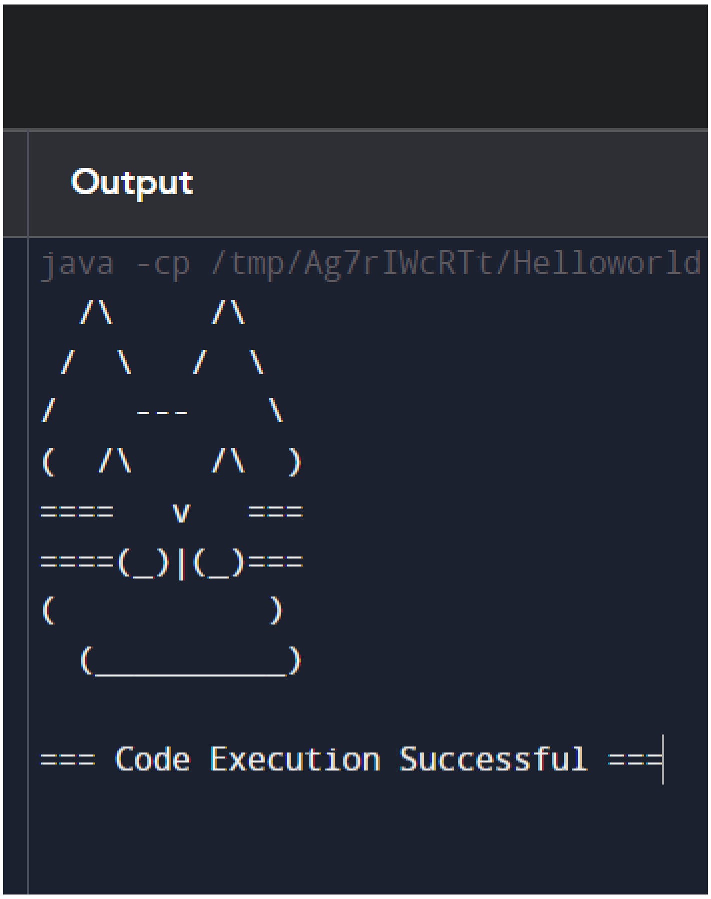
```java

public class helloworld {
    static public void main(String[] args) {
        System.out.println("  ****  ");
        System.out.println(" *    * ");
        System.out.println("* *  * *");
        System.out.println("*      *");
        System.out.println("* *  * *");
        System.out.println("*  **  *");
        System.out.println(" *    * ");
        System.out.println("  ****  ");

    }

}

```



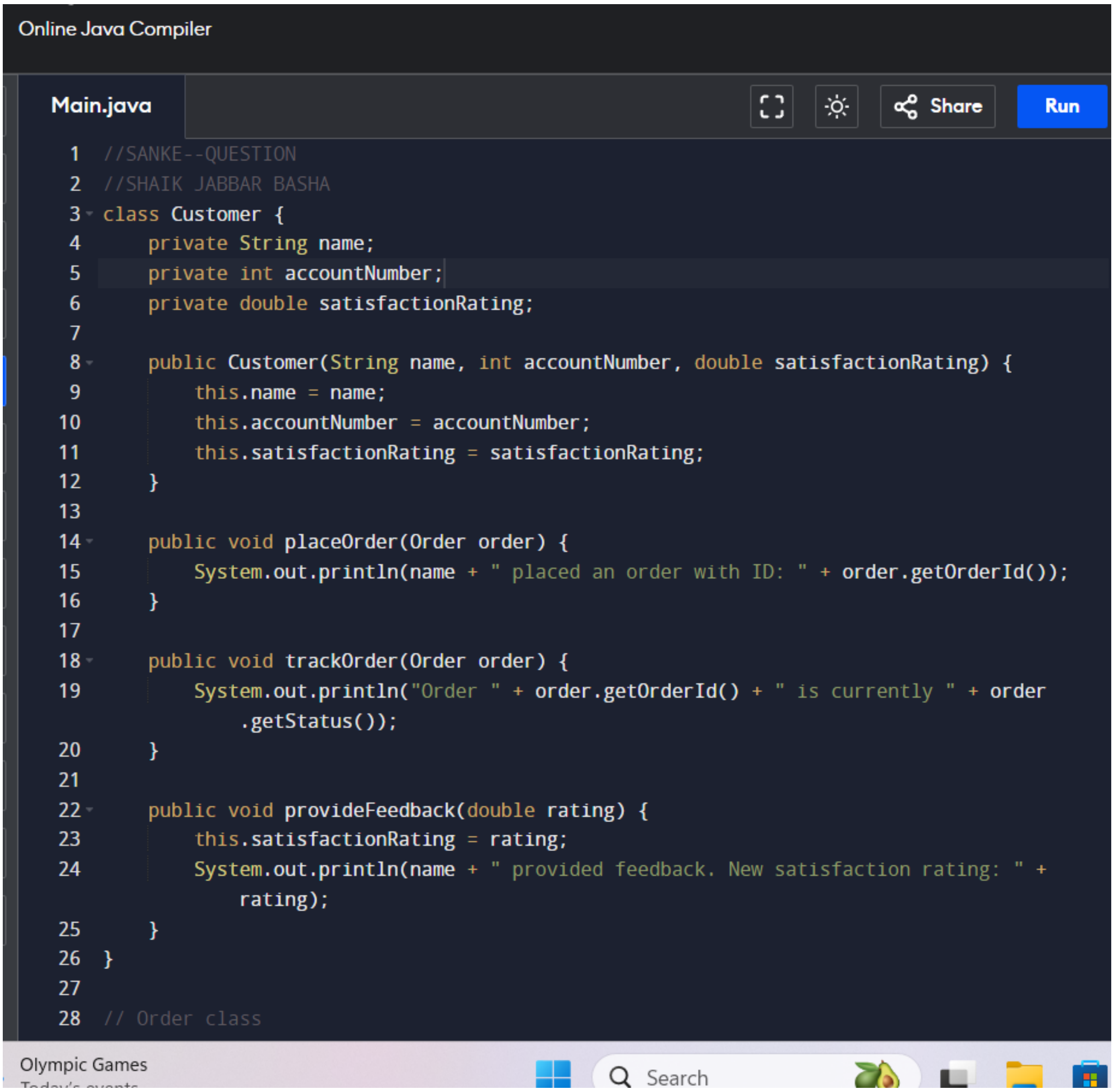
```
java -cp /tmp/L1ufWOmhNy/helloworld
  ****  
 *    * 
* *  * *
*      *
* *  * *
*  **  *
 *    * 
  ****  

=== Code Execution Successful ===
```



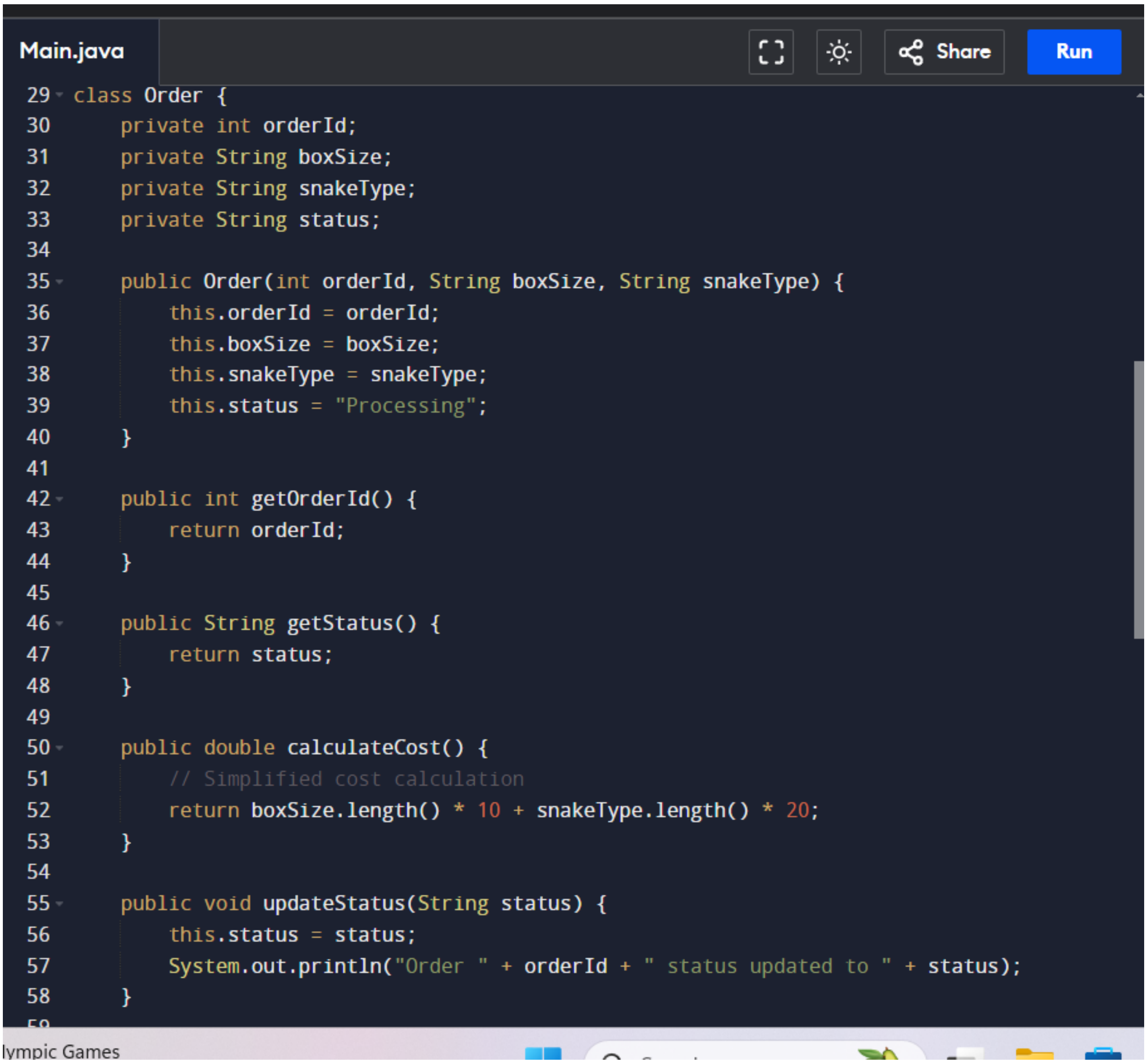
```java

class Helloworld {
    public static void main(String[] args) {
        System.out.println("  /\\     /\\  ");
        System.out.println(" /  \\   /  \\ ");
        System.out.println("/    ---    \\ ");
        System.out.println("(  /\\    /\\  )");
        System.out.println("====   v   ===");
        System.out.println("====(_)|(_)===");
             System.out.println("(           )");
        System.out.println("  (__________) ");

}
}

```



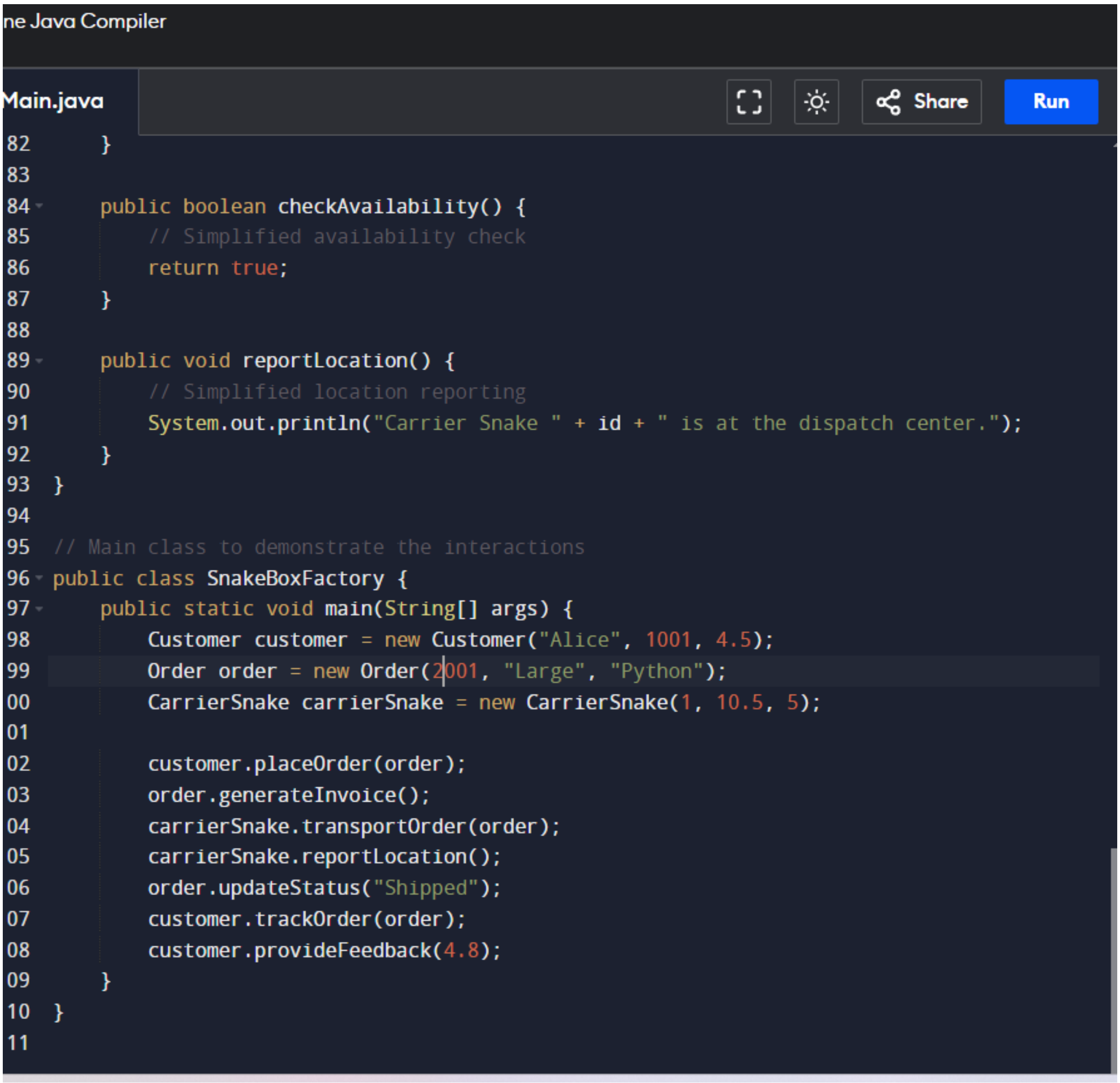
```
java -cp /tmp/Ag7rIWcRTt/Helloworld
  /\     /\  
 /  \   /  \ 
/    ---    \ 
(  /\    /\  )
====   v   ===
====(_)|(_)===
(           )
  (__________) 


=== Code Execution Successful ===
```



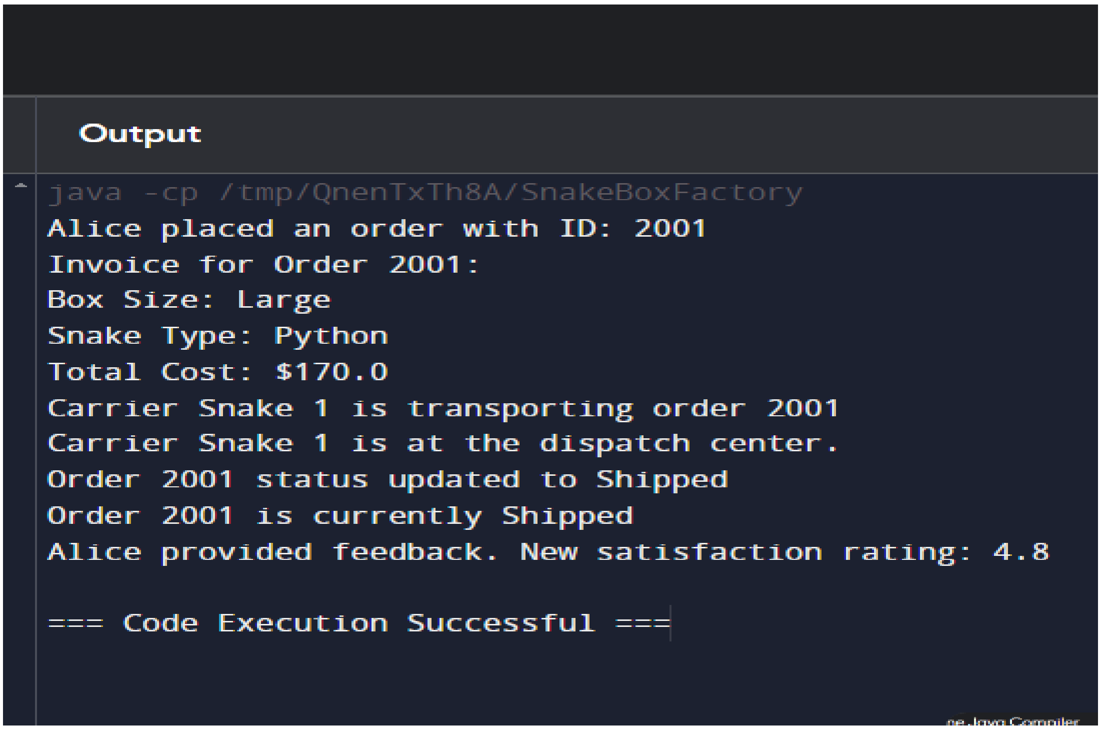
```java
//SANKE--QUESTION
//SHAIK JABBAR BASHA
class Customer {
    private String name;
    private int accountNumber;
    private double satisfactionRating;

    public Customer(String name, int accountNumber, double satisfactionRating) {
        this.name = name;
        this.accountNumber = accountNumber;
        this.satisfactionRating = satisfactionRating;
    }

    public void placeOrder(Order order) {
        System.out.println(name + " placed an order with ID: " + order.getOrderId());
    }

    public void trackOrder(Order order) {
        System.out.println("Order " + order.getOrderId() + " is currently " + order.getStatus());
    }

    public void provideFeedback(double rating) {
        this.satisfactionRating = rating;
        System.out.println(name + " provided feedback. New satisfaction rating: " + rating);
    }
}

// Order class
```



```
class Order {
    private int orderId;
    private String boxSize;
    private String snakeType;
    private String status;

    public Order(int orderId, String boxSize, String snakeType) {
        this.orderId = orderId;
        this.boxSize = boxSize;
        this.snakeType = snakeType;
        this.status = "Processing";
    }

    public int getOrderId() {
        return orderId;
    }

    public String getStatus() {
        return status;
    }

    public double calculateCost() {
        // Simplified cost calculation
        return boxSize.length() * 10 + snakeType.length() * 20;
    }

    public void updateStatus(String status) {
        this.status = status;
        System.out.println("Order " + orderId + " status updated to " + status);
    }
```

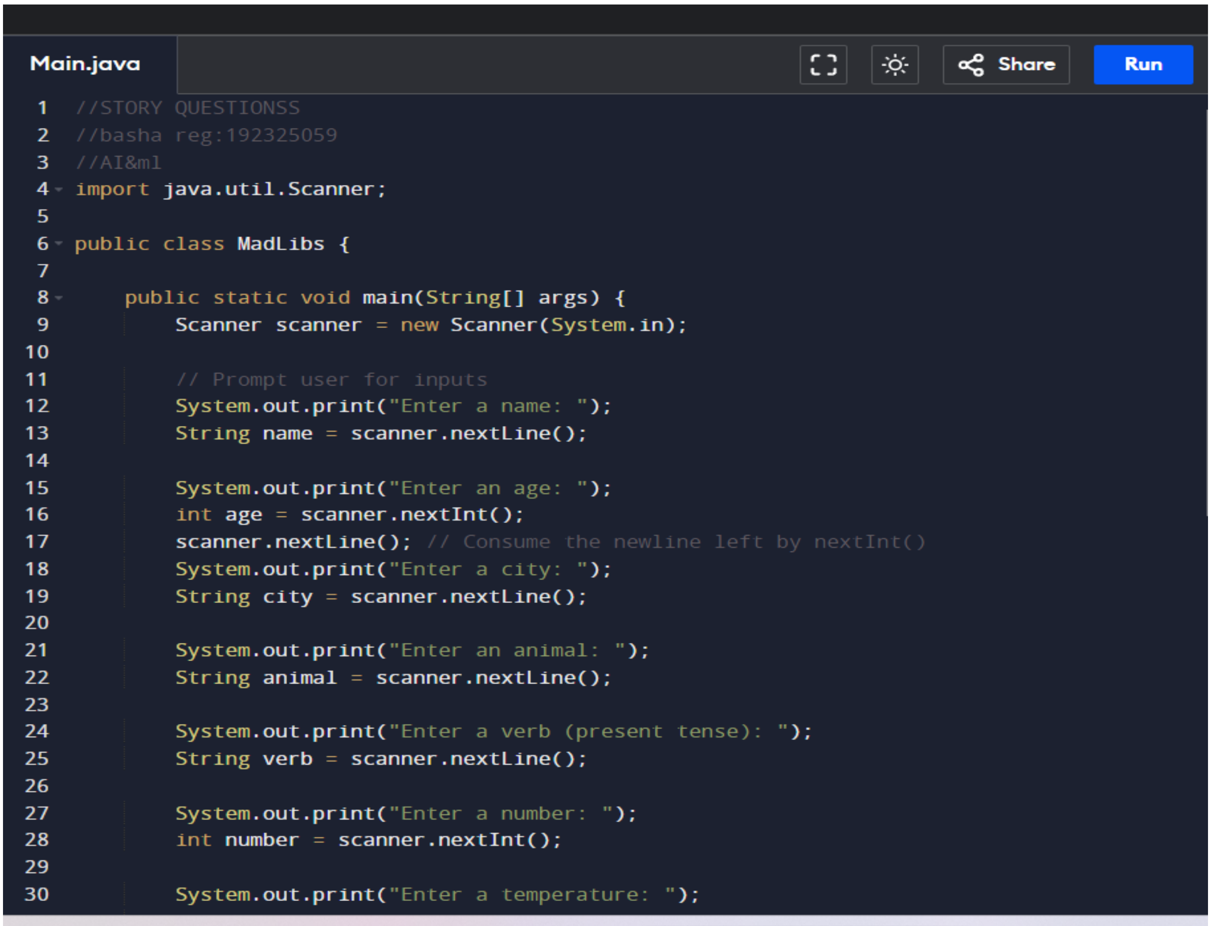


```java
    }

    public boolean checkAvailability() {
        // Simplified availability check
        return true;
    }

    public void reportLocation() {
        // Simplified location reporting
        System.out.println("Carrier Snake " + id + " is at the dispatch center.");
    }
}

// Main class to demonstrate the interactions
public class SnakeBoxFactory {
    public static void main(String[] args) {
        Customer customer = new Customer("Alice", 1001, 4.5);
        Order order = new Order(2001, "Large", "Python");
        CarrierSnake carrierSnake = new CarrierSnake(1, 10.5, 5);

        customer.placeOrder(order);
        order.generateInvoice();
        carrierSnake.transportOrder(order);
        carrierSnake.reportLocation();
        order.updateStatus("Shipped");
        customer.trackOrder(order);
        customer.provideFeedback(4.8);
    }
}
```

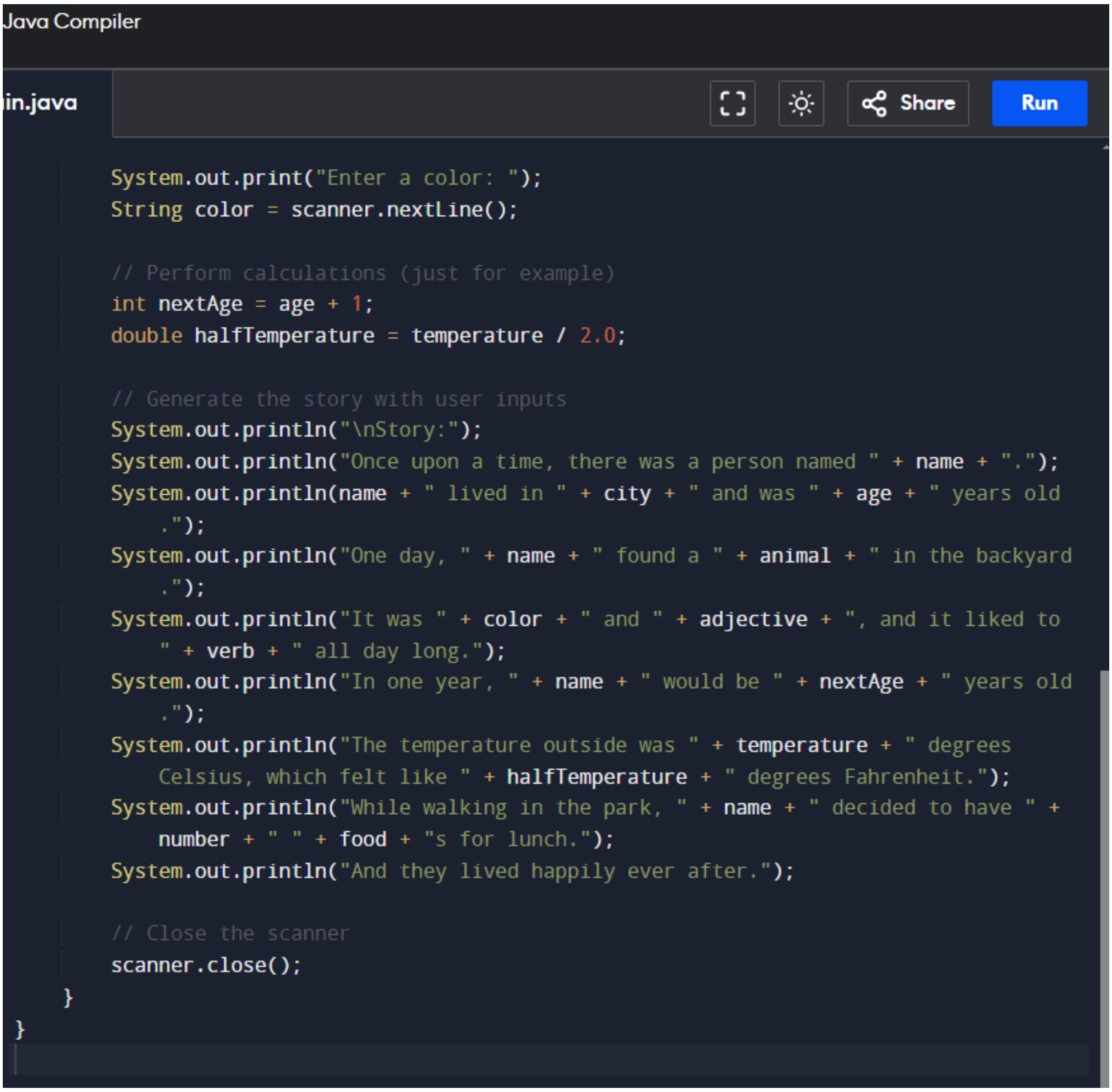


```
java -cp /tmp/QnenTxTh8A/SnakeBoxFactory
Alice placed an order with ID: 2001
Invoice for Order 2001:
Box Size: Large
Snake Type: Python
Total Cost: $170.0
Carrier Snake 1 is transporting order 2001
Carrier Snake 1 is at the dispatch center.
Order 2001 status updated to Shipped
Order 2001 is currently Shipped
Alice provided feedback. New satisfaction rating: 4.8

=== Code Execution Successful ===
```

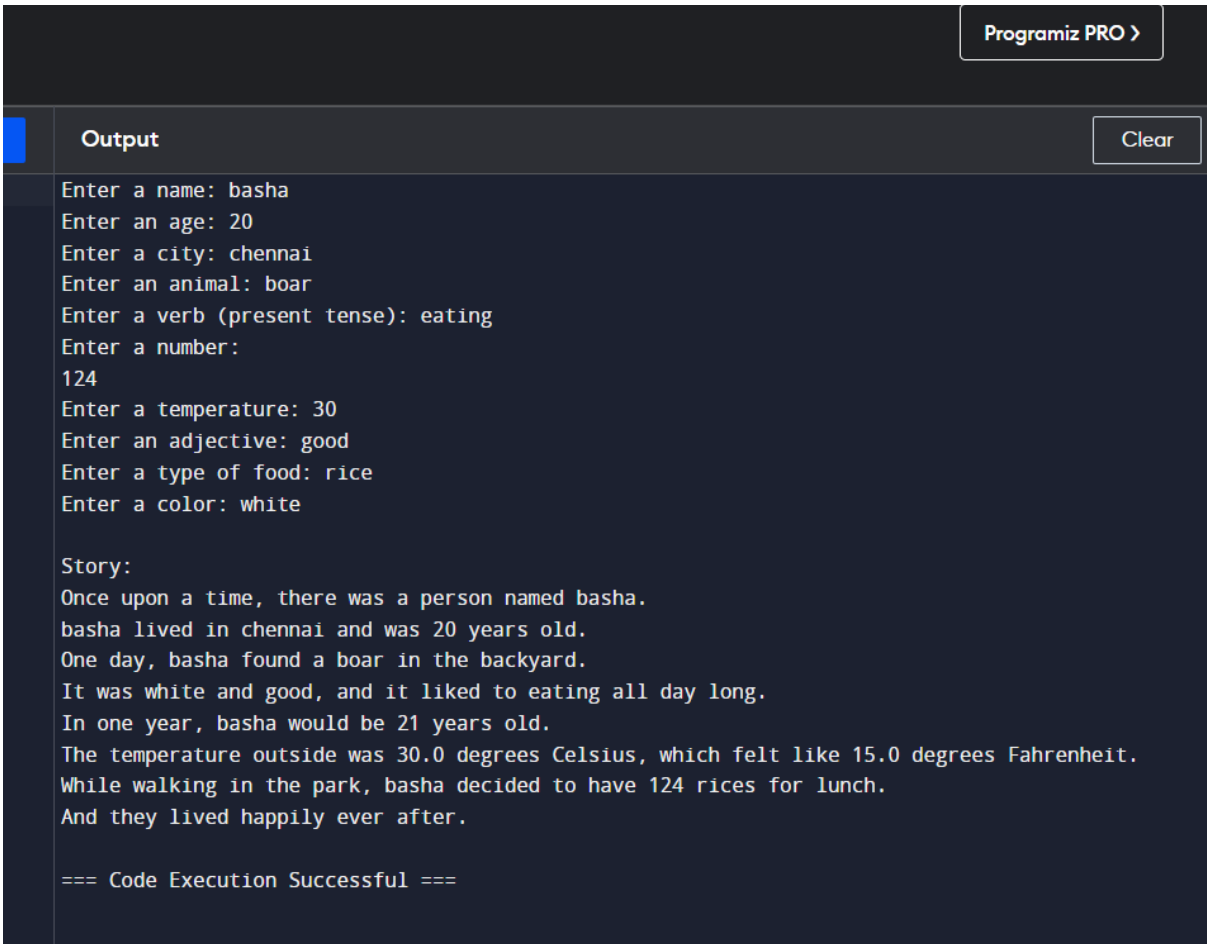
SECTION-3:



```java
//STORY QUESTIONSS
//basha reg:192325059
//AI&ml
import java.util.Scanner;

public class MadLibs {

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

        // Prompt user for inputs
        System.out.print("Enter a name: ");
        String name = scanner.nextLine();

        System.out.print("Enter an age: ");
        int age = scanner.nextInt();
        scanner.nextLine(); // Consume the newline left by nextInt()
        System.out.print("Enter a city: ");
        String city = scanner.nextLine();

        System.out.print("Enter an animal: ");
        String animal = scanner.nextLine();

        System.out.print("Enter a verb (present tense): ");
        String verb = scanner.nextLine();

        System.out.print("Enter a number: ");
        int number = scanner.nextInt();

        System.out.print("Enter a temperature: ");
```

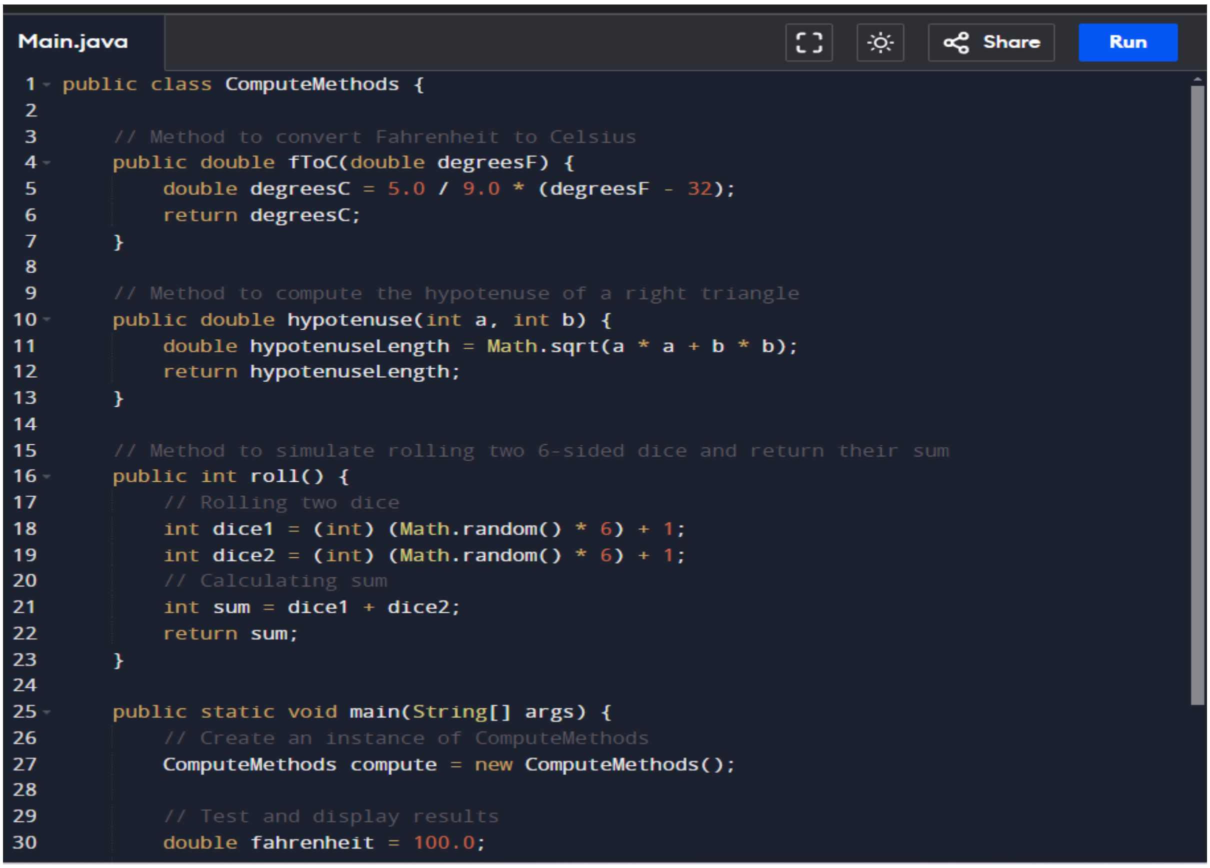


```
        System.out.print("Enter a color: ");
        String color = scanner.nextLine();

        // Perform calculations (just for example)
        int nextAge = age + 1;
        double halfTemperature = temperature / 2.0;

        // Generate the story with user inputs
        System.out.println("\nStory:");
        System.out.println("Once upon a time, there was a person named " + name + ".");
        System.out.println(name + " lived in " + city + " and was " + age + " years old
            .");
        System.out.println("One day, " + name + " found a " + animal + " in the backyard
            .");
        System.out.println("It was " + color + " and " + adjective + ", and it liked to
            " + verb + " all day long.");
        System.out.println("In one year, " + name + " would be " + nextAge + " years old
            .");
        System.out.println("The temperature outside was " + temperature + " degrees
            Celsius, which felt like " + halfTemperature + " degrees Fahrenheit.");
        System.out.println("While walking in the park, " + name + " decided to have " +
            number + " " + food + "s for lunch.");
        System.out.println("And they lived happily ever after.");

        // Close the scanner
        scanner.close();
    }
}
```

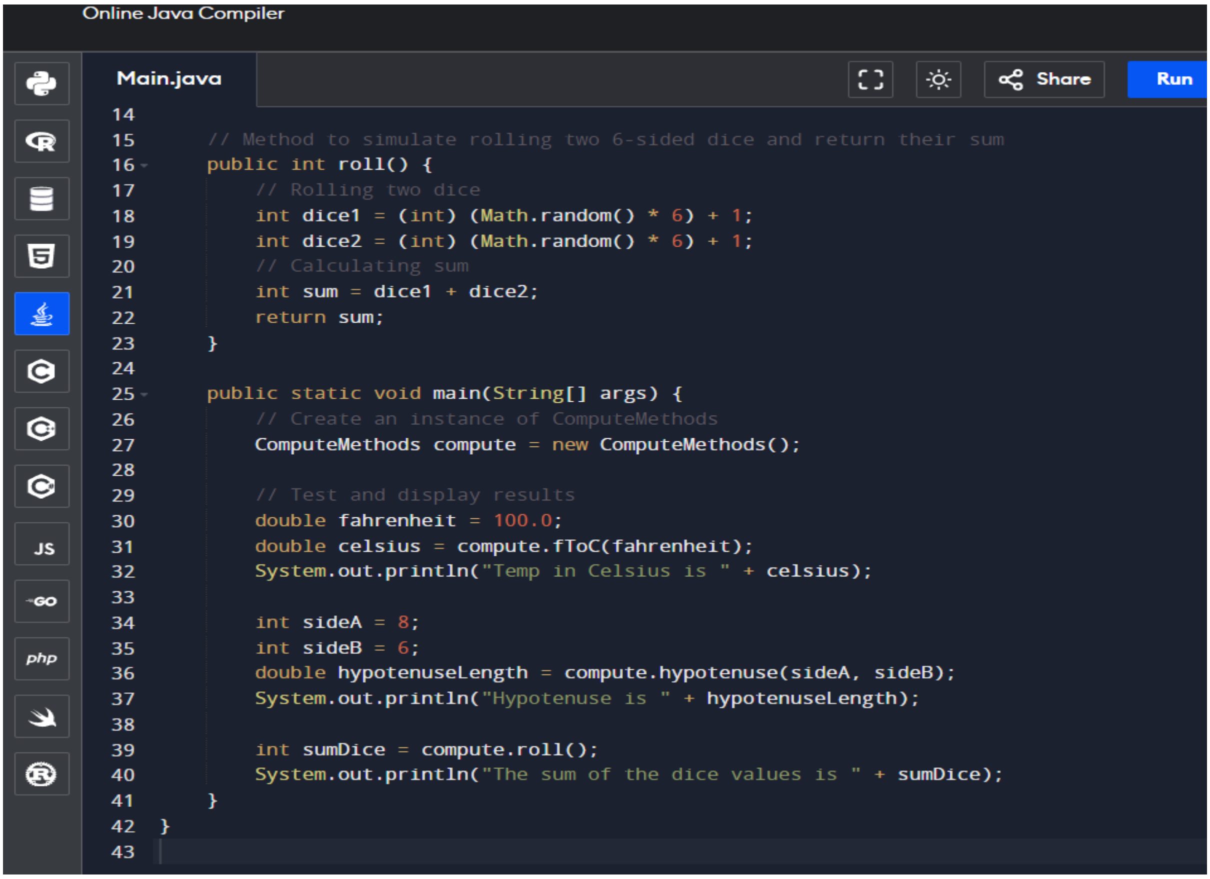


```
Enter a name: basha
Enter an age: 20
Enter a city: chennai
Enter an animal: boar
Enter a verb (present tense): eating
Enter a number:
124
Enter a temperature: 30
Enter an adjective: good
Enter a type of food: rice
Enter a color: white

Story:
Once upon a time, there was a person named basha.
basha lived in chennai and was 20 years old.
One day, basha found a boar in the backyard.
It was white and good, and it liked to eating all day long.
In one year, basha would be 21 years old.
The temperature outside was 30.0 degrees Celsius, which felt like 15.0 degrees Fahrenheit.
While walking in the park, basha decided to have 124 rices for lunch.
And they lived happily ever after.

=== Code Execution Successful ===
```

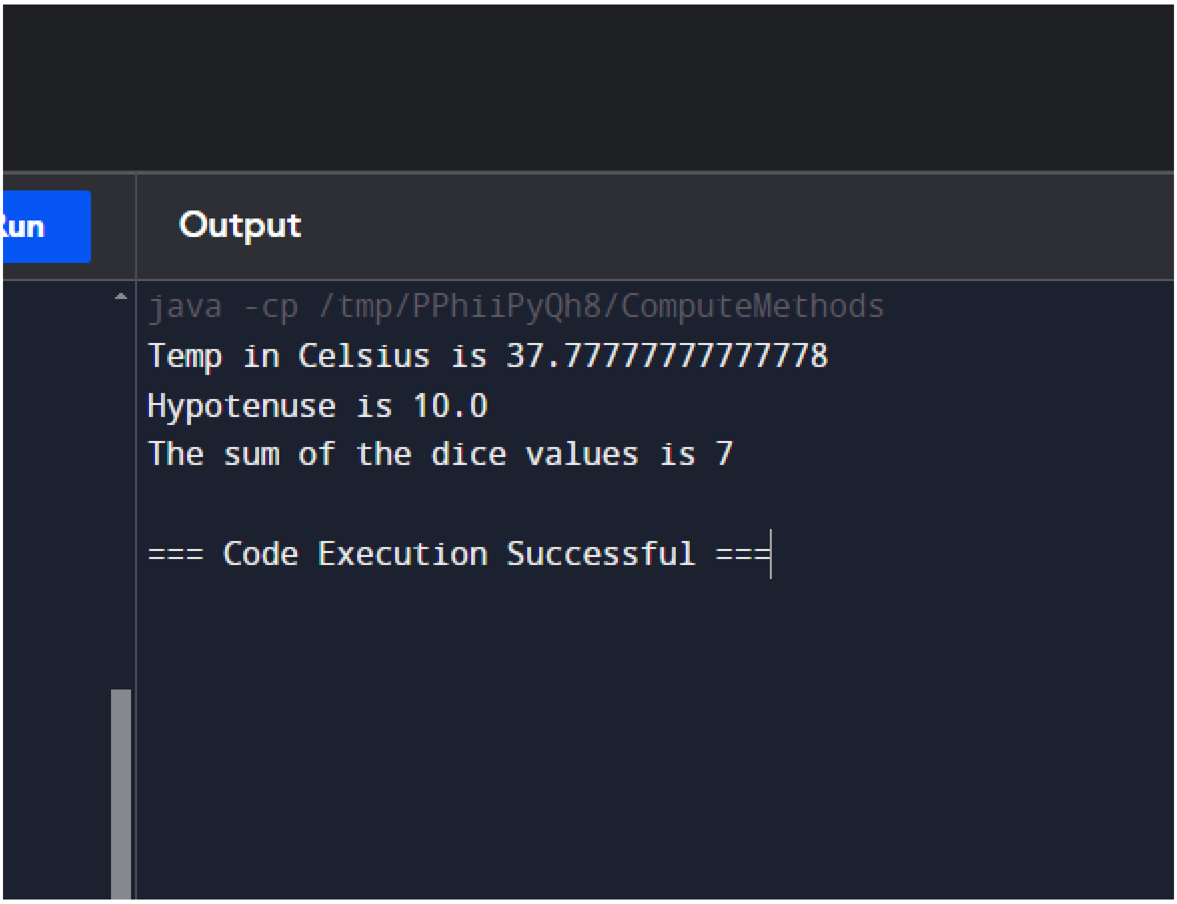
Sectiion-4:



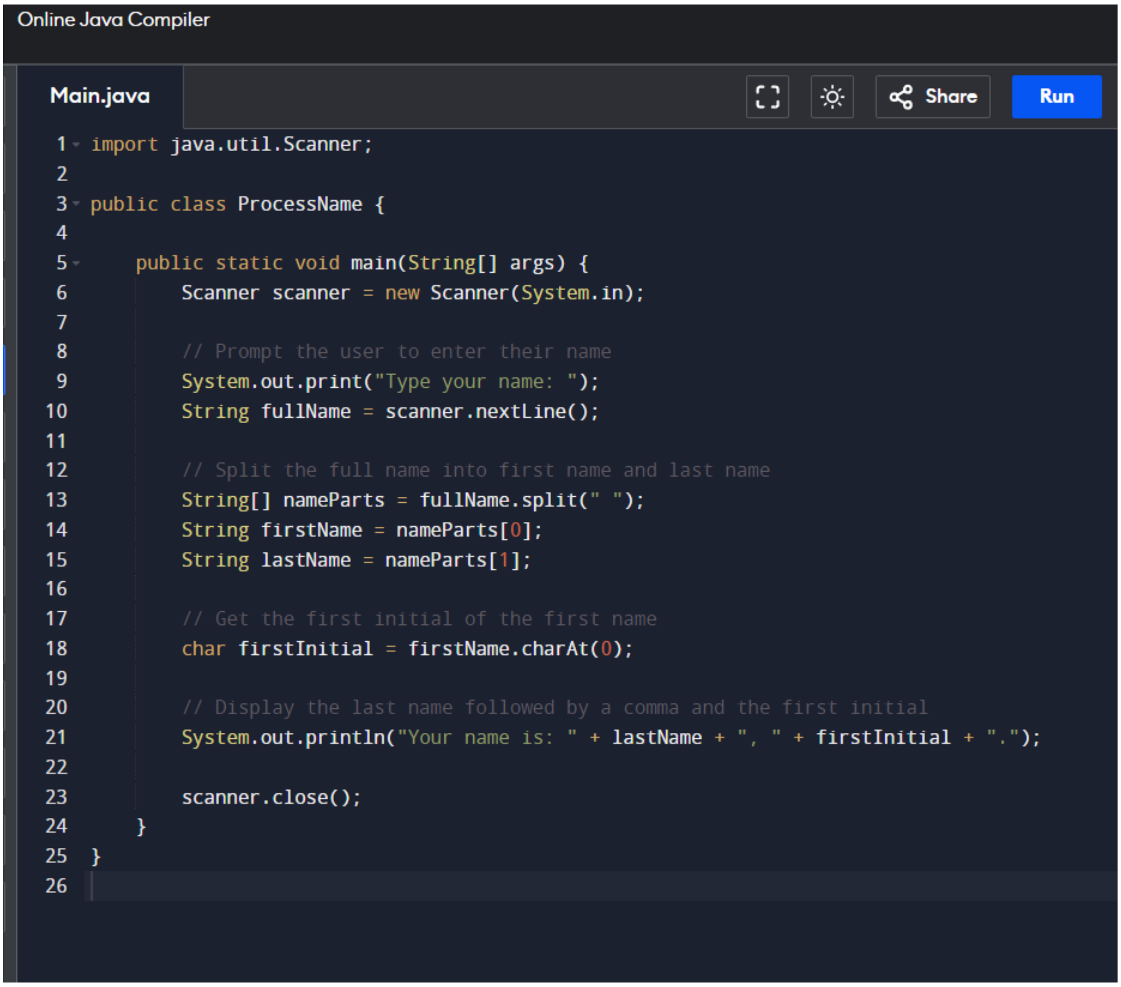
```java
public class ComputeMethods {

    // Method to convert Fahrenheit to Celsius
    public double fToC(double degreesF) {
        double degreesC = 5.0 / 9.0 * (degreesF - 32);
        return degreesC;
    }

    // Method to compute the hypotenuse of a right triangle
    public double hypotenuse(int a, int b) {
        double hypotenuseLength = Math.sqrt(a * a + b * b);
        return hypotenuseLength;
    }

    // Method to simulate rolling two 6-sided dice and return their sum
    public int roll() {
        // Rolling two dice
        int dice1 = (int) (Math.random() * 6) + 1;
        int dice2 = (int) (Math.random() * 6) + 1;
        // Calculating sum
        int sum = dice1 + dice2;
        return sum;
    }

    public static void main(String[] args) {
        // Create an instance of ComputeMethods
        ComputeMethods compute = new ComputeMethods();

        // Test and display results
        double fahrenheit = 100.0;
```



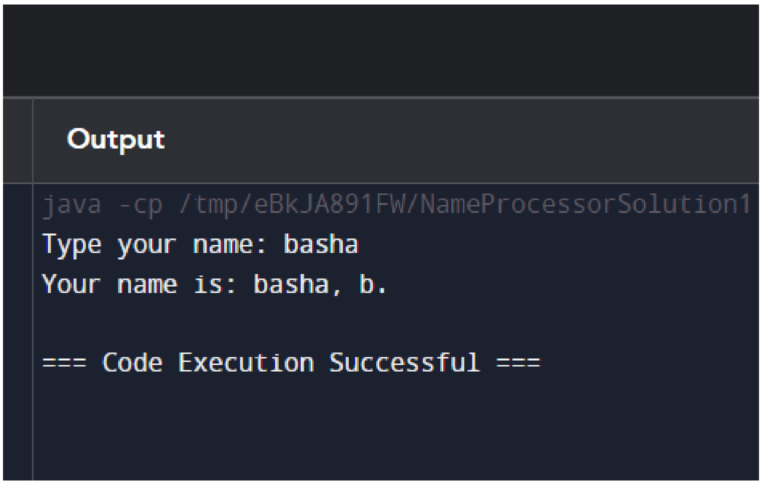
```java

    // Method to simulate rolling two 6-sided dice and return their sum
    public int roll() {
        // Rolling two dice
        int dice1 = (int) (Math.random() * 6) + 1;
        int dice2 = (int) (Math.random() * 6) + 1;
        // Calculating sum
        int sum = dice1 + dice2;
        return sum;
    }

    public static void main(String[] args) {
        // Create an instance of ComputeMethods
        ComputeMethods compute = new ComputeMethods();

        // Test and display results
        double fahrenheit = 100.0;
        double celsius = compute.fToC(fahrenheit);
        System.out.println("Temp in Celsius is " + celsius);

        int sideA = 8;
        int sideB = 6;
        double hypotenuseLength = compute.hypotenuse(sideA, sideB);
        System.out.println("Hypotenuse is " + hypotenuseLength);

        int sumDice = compute.roll();
        System.out.println("The sum of the dice values is " + sumDice);
    }
}

```



```
java -cp /tmp/PPhiiPyQh8/ComputeMethods
Temp in Celsius is 37.77777777777778
Hypotenuse is 10.0
The sum of the dice values is 7

=== Code Execution Successful ===
```

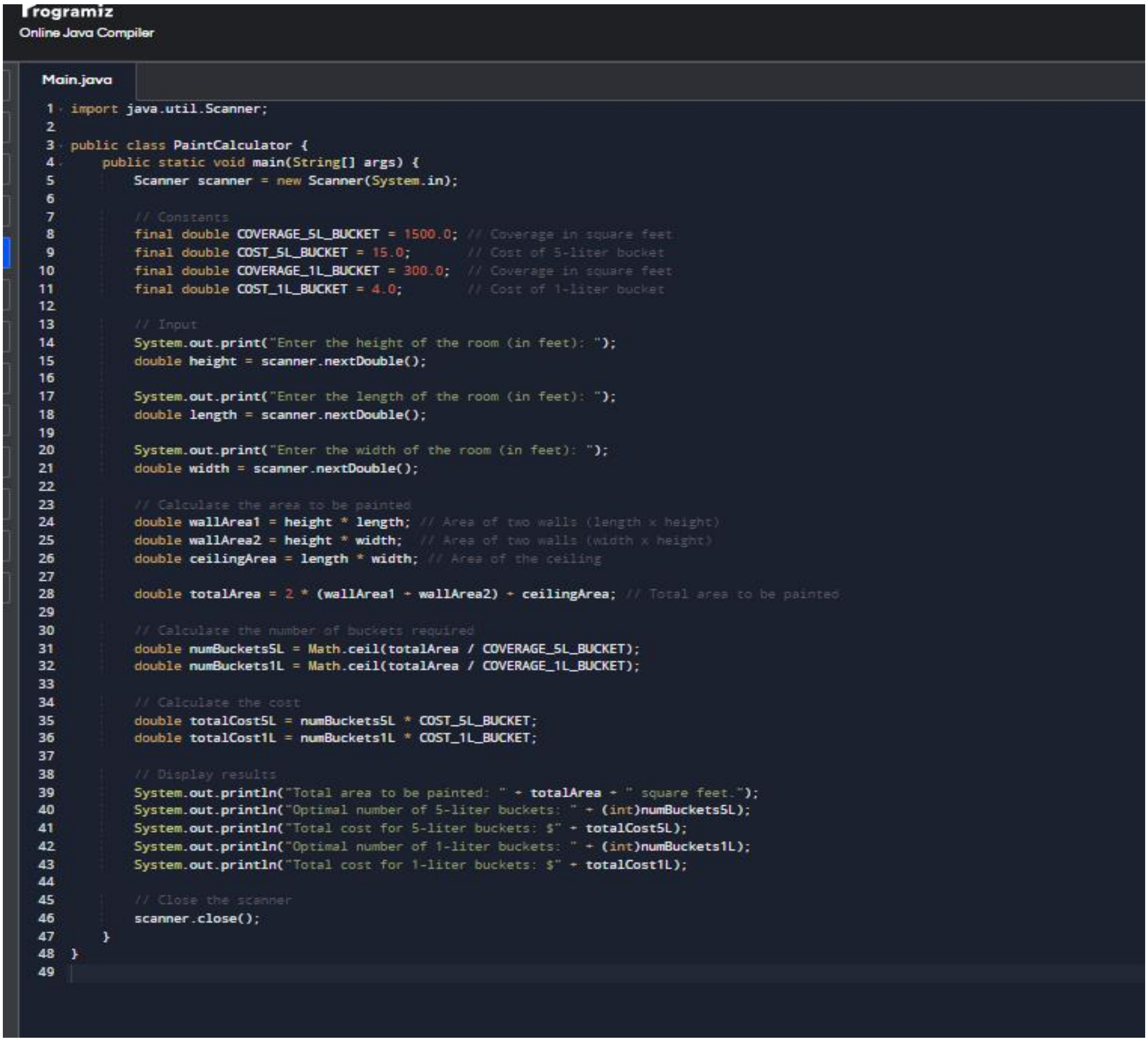


```java
import java.util.Scanner;

public class ProcessName {

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

        // Prompt the user to enter their name
        System.out.print("Type your name: ");
        String fullName = scanner.nextLine();

        // Split the full name into first name and last name
        String[] nameParts = fullName.split(" ");
        String firstName = nameParts[0];
        String lastName = nameParts[1];

        // Get the first initial of the first name
        char firstInitial = firstName.charAt(0);

        // Display the last name followed by a comma and the first initial
        System.out.println("Your name is: " + lastName + ", " + firstInitial + ".");

        scanner.close();
    }
}

```

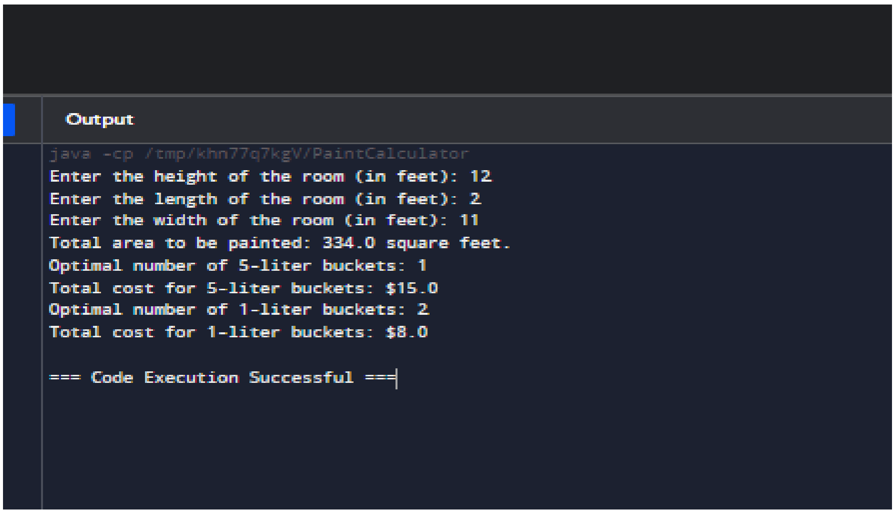


```
java -cp /tmp/eBkJA891FW/NameProcessorSolution1
Type your name: basha
Your name is: basha, b.

=== Code Execution Successful ===
```

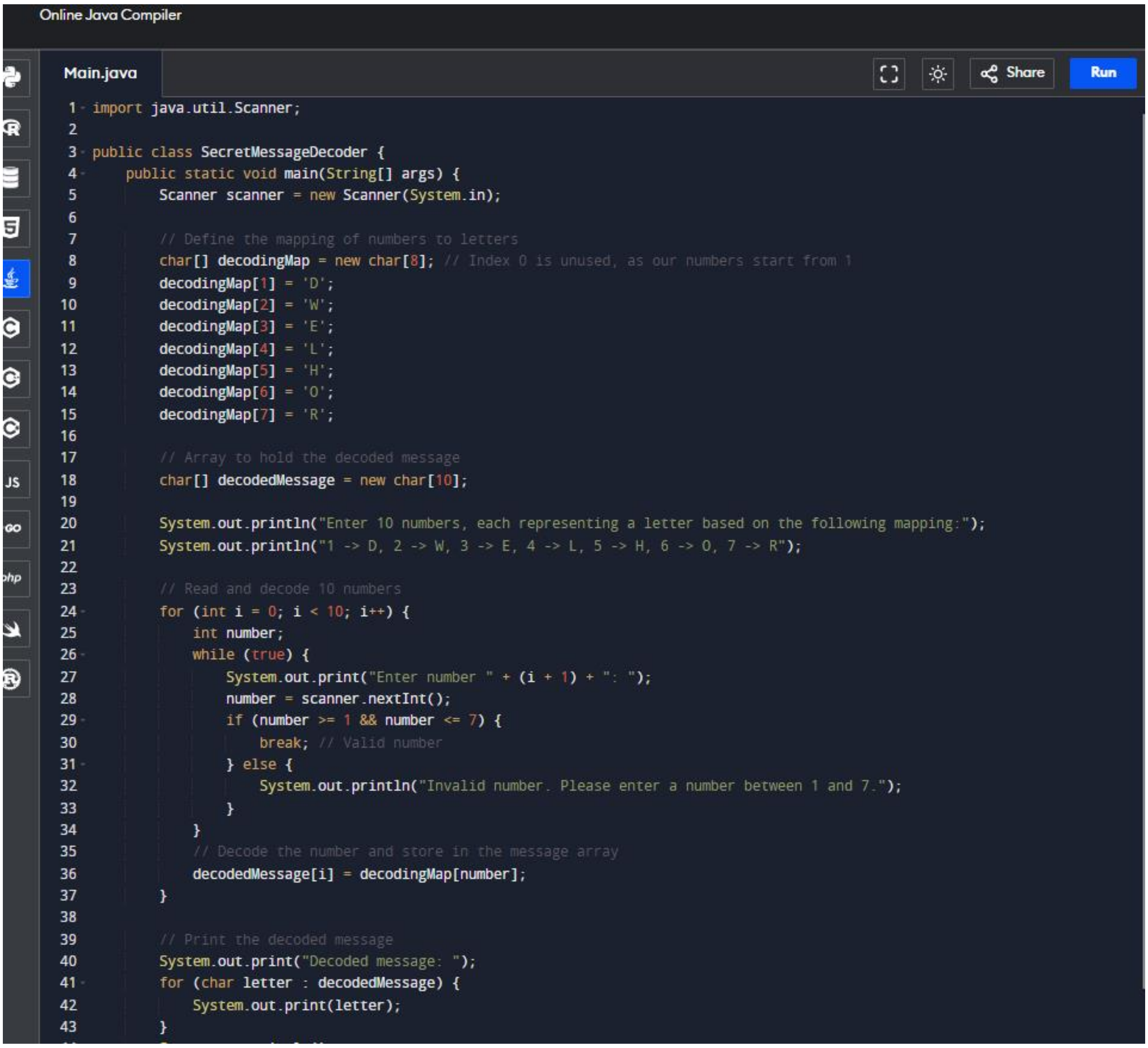
5.2:



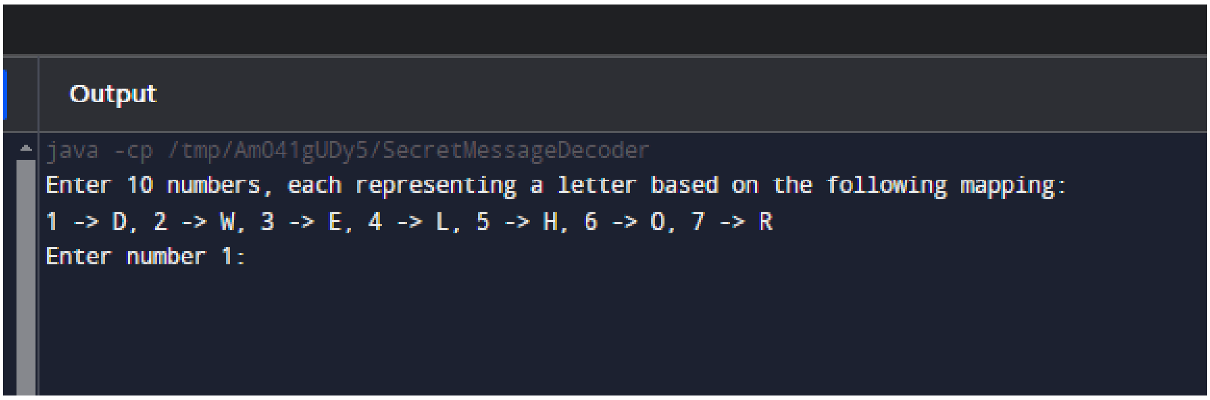
```java
import java.util.Scanner;

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

        // Constants
        final double COVERAGE_5L_BUCKET = 1500.0; // Coverage in square feet
        final double COST_5L_BUCKET = 15.0;       // Cost of 5-liter bucket
        final double COVERAGE_1L_BUCKET = 300.0;  // Coverage in square feet
        final double COST_1L_BUCKET = 4.0;        // Cost of 1-liter bucket

        // Input
        System.out.print("Enter the height of the room (in feet): ");
        double height = scanner.nextDouble();

        System.out.print("Enter the length of the room (in feet): ");
        double length = scanner.nextDouble();

        System.out.print("Enter the width of the room (in feet): ");
        double width = scanner.nextDouble();

        // Calculate the area to be painted
        double wallArea1 = height * length; // Area of two walls (length x height)
        double wallArea2 = height * width;  // Area of two walls (width x height)
        double ceilingArea = length * width; // Area of the ceiling

        double totalArea = 2 * (wallArea1 + wallArea2) + ceilingArea; // Total area to be painted

        // Calculate the number of buckets required
        double numBuckets5L = Math.ceil(totalArea / COVERAGE_5L_BUCKET);
        double numBuckets1L = Math.ceil(totalArea / COVERAGE_1L_BUCKET);

        // Calculate the cost
        double totalCost5L = numBuckets5L * COST_5L_BUCKET;
        double totalCost1L = numBuckets1L * COST_1L_BUCKET;

        // Display results
        System.out.println("Total area to be painted: " + totalArea + " square feet.");
        System.out.println("Optimal number of 5-liter buckets: " + (int)numBuckets5L);
        System.out.println("Total cost for 5-liter buckets: $" + totalCost5L);
        System.out.println("Optimal number of 1-liter buckets: " + (int)numBuckets1L);
        System.out.println("Total cost for 1-liter buckets: $" + totalCost1L);

        // Close the scanner
        scanner.close();
    }
}
```



```
java -cp /tmp/khn77q7kgV/PaintCalculator
Enter the height of the room (in feet): 12
Enter the length of the room (in feet): 2
Enter the width of the room (in feet): 11
Total area to be painted: 334.0 square feet.
Optimal number of 5-liter buckets: 1
Total cost for 5-liter buckets: $15.0
Optimal number of 1-liter buckets: 2
Total cost for 1-liter buckets: $8.0

=== Code Execution Successful ===
```

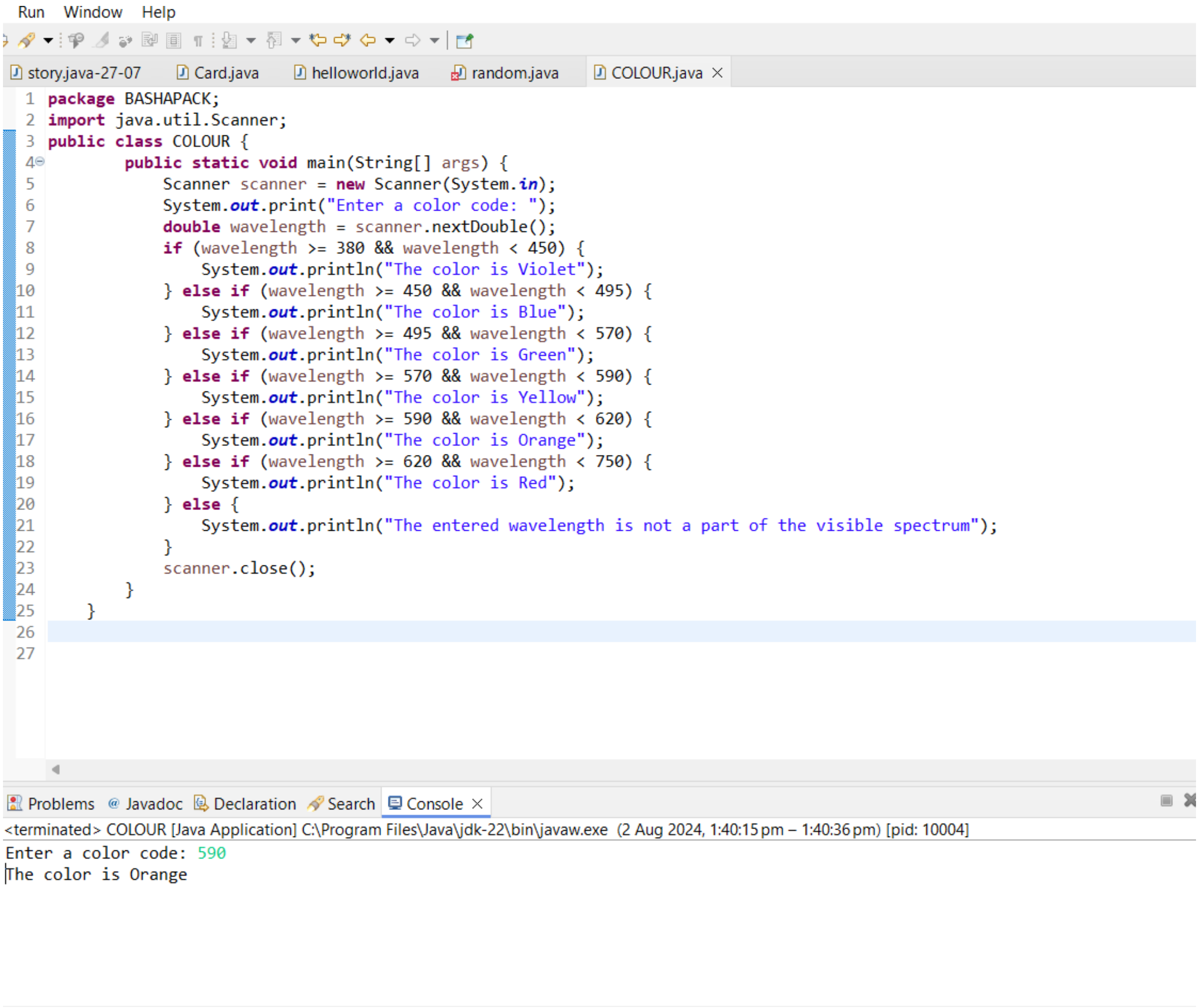


```java
import java.util.Scanner;

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

        // Define the mapping of numbers to letters
        char[] decodingMap = new char[8]; // Index 0 is unused, as our numbers start from 1
        decodingMap[1] = 'D';
        decodingMap[2] = 'W';
        decodingMap[3] = 'E';
        decodingMap[4] = 'L';
        decodingMap[5] = 'H';
        decodingMap[6] = 'O';
        decodingMap[7] = 'R';

        // Array to hold the decoded message
        char[] decodedMessage = new char[10];

        System.out.println("Enter 10 numbers, each representing a letter based on the following mapping:");
        System.out.println("1 -> D, 2 -> W, 3 -> E, 4 -> L, 5 -> H, 6 -> O, 7 -> R");

        // Read and decode 10 numbers
        for (int i = 0; i < 10; i++) {
            int number;
            while (true) {
                System.out.print("Enter number " + (i + 1) + ": ");
                number = scanner.nextInt();
                if (number >= 1 && number <= 7) {
                    break; // Valid number
                } else {
                    System.out.println("Invalid number. Please enter a number between 1 and 7.");
                }
            }
            // Decode the number and store in the message array
            decodedMessage[i] = decodingMap[number];
        }

        // Print the decoded message
        System.out.print("Decoded message: ");
        for (char letter : decodedMessage) {
            System.out.print(letter);
        }
```



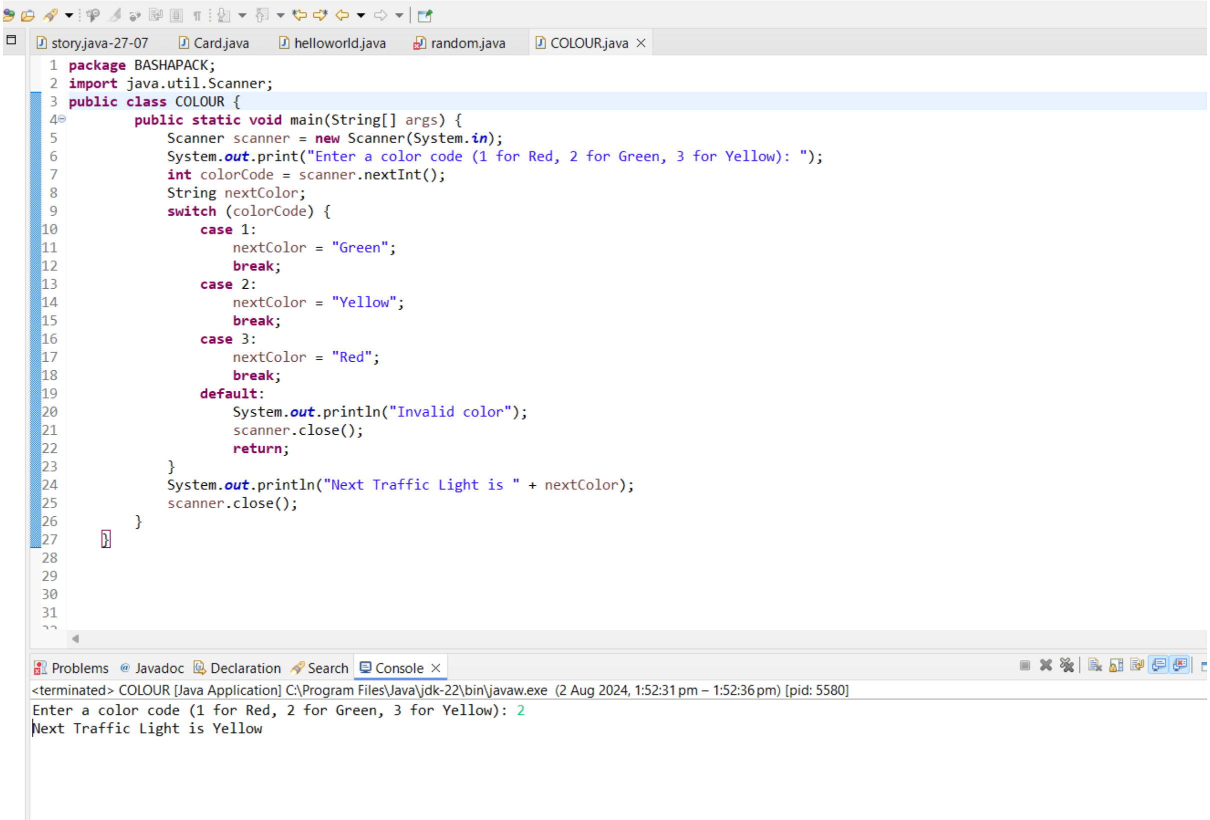
```
java -cp /tmp/Am041gUDy5/SecretMessageDecoder
Enter 10 numbers, each representing a letter based on the following mapping:
1 -> D, 2 -> W, 3 -> E, 4 -> L, 5 -> H, 6 -> O, 7 -> R
Enter number 1:
```

5-PRACTICE:



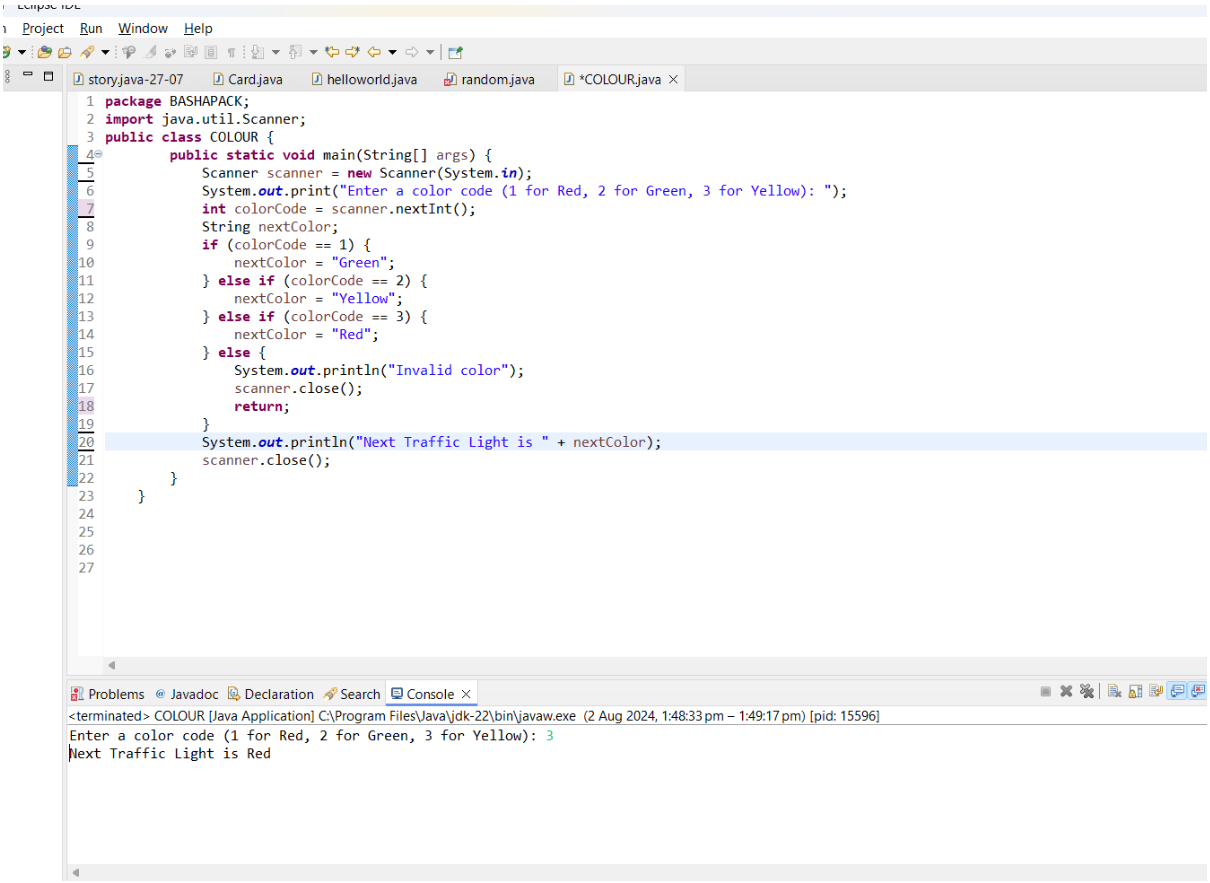
```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter a color code: ");
            double wavelength = scanner.nextDouble();
            if (wavelength >= 380 && wavelength < 450) {
                System.out.println("The color is Violet");
            } else if (wavelength >= 450 && wavelength < 495) {
                System.out.println("The color is Blue");
            } else if (wavelength >= 495 && wavelength < 570) {
                System.out.println("The color is Green");
            } else if (wavelength >= 570 && wavelength < 590) {
                System.out.println("The color is Yellow");
            } else if (wavelength >= 590 && wavelength < 620) {
                System.out.println("The color is Orange");
            } else if (wavelength >= 620 && wavelength < 750) {
                System.out.println("The color is Red");
            } else {
                System.out.println("The entered wavelength is not a part of the visible spectrum");
            }
            scanner.close();
        }
    }
```

```
<terminated> COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe  (2 Aug 2024, 1:40:15 pm – 1:40:36 pm) [pid: 10004]
Enter a color code: 590
The color is Orange
```



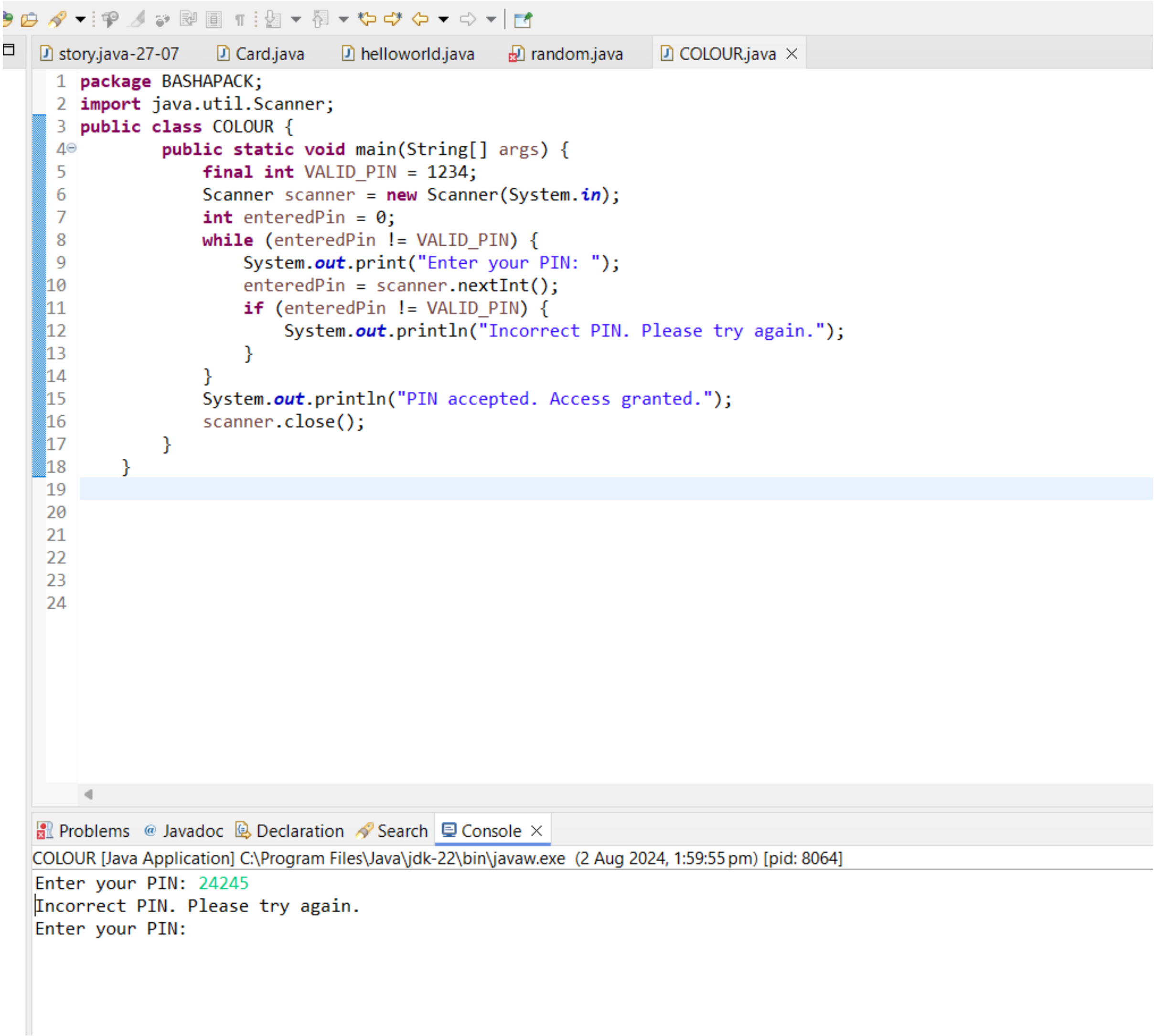
```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter a color code (1 for Red, 2 for Green, 3 for Yellow): ");
            int colorCode = scanner.nextInt();
            String nextColor;
            switch (colorCode) {
                case 1:
                    nextColor = "Green";
                    break;
                case 2:
                    nextColor = "Yellow";
                    break;
                case 3:
                    nextColor = "Red";
                    break;
                default:
                    System.out.println("Invalid color");
                    scanner.close();
                    return;
            }
            System.out.println("Next Traffic Light is " + nextColor);
            scanner.close();
        }
    }
```

```
<terminated> COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe  (2 Aug 2024, 1:52:31 pm – 1:52:36 pm) [pid: 5580]
Enter a color code (1 for Red, 2 for Green, 3 for Yellow): 2
Next Traffic Light is Yellow
```



```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter a color code (1 for Red, 2 for Green, 3 for Yellow): ");
            int colorCode = scanner.nextInt();
            String nextColor;
            if (colorCode == 1) {
                nextColor = "Green";
            } else if (colorCode == 2) {
                nextColor = "Yellow";
            } else if (colorCode == 3) {
                nextColor = "Red";
            } else {
                System.out.println("Invalid color");
                scanner.close();
                return;
            }
            System.out.println("Next Traffic Light is " + nextColor);
            scanner.close();
        }
    }
```

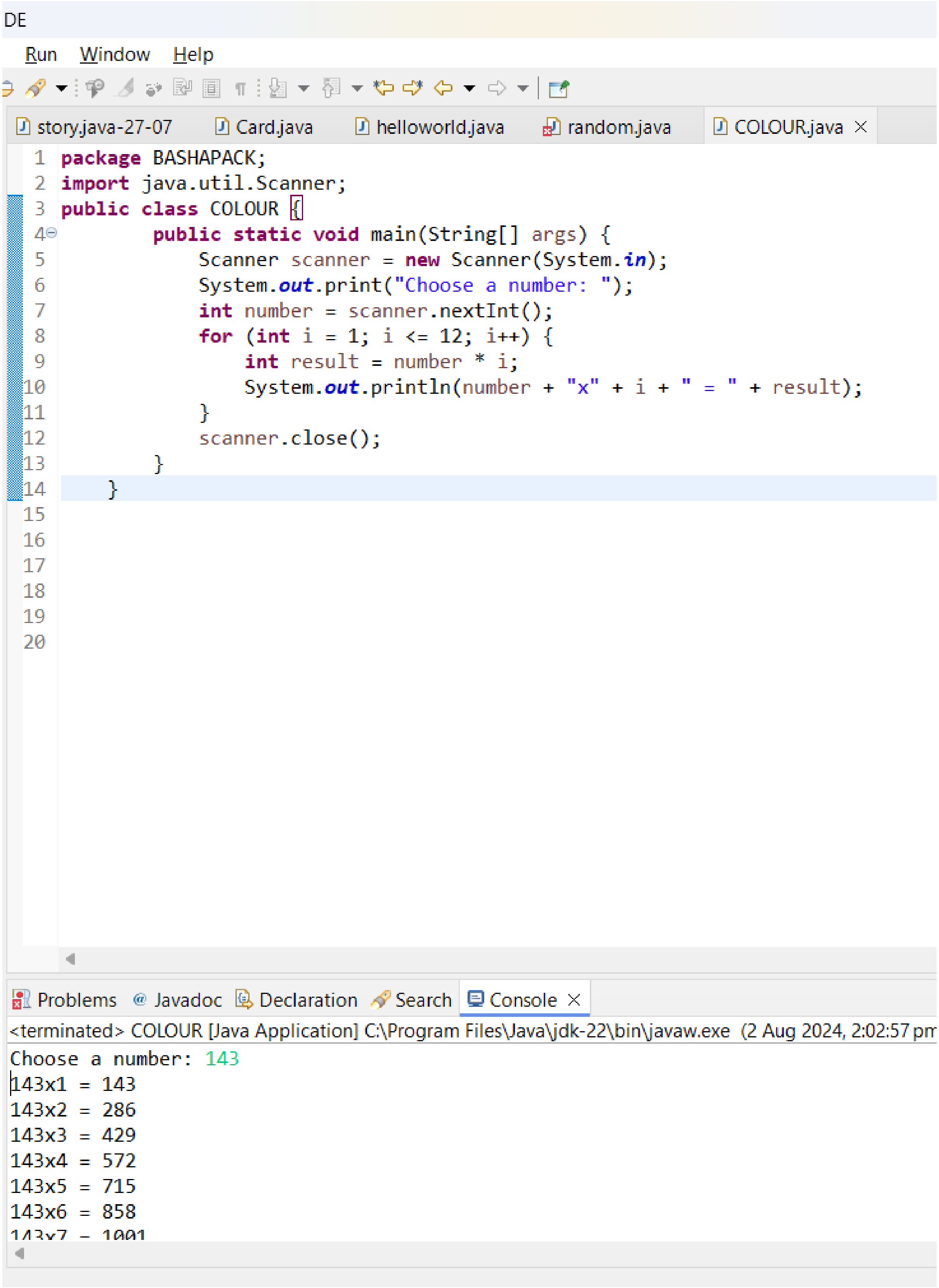
```
<terminated> COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe  (2 Aug 2024, 1:48:33 pm – 1:49:17 pm) [pid: 15596]
Enter a color code (1 for Red, 2 for Green, 3 for Yellow): 3
Next Traffic Light is Red
```



```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            final int VALID_PIN = 1234;
            Scanner scanner = new Scanner(System.in);
            int enteredPin = 0;
            while (enteredPin != VALID_PIN) {
                System.out.print("Enter your PIN: ");
                enteredPin = scanner.nextInt();
                if (enteredPin != VALID_PIN) {
                    System.out.println("Incorrect PIN. Please try again.");
                }
            }
            System.out.println("PIN accepted. Access granted.");
            scanner.close();
        }
    }
```

COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (2 Aug 2024, 1:59:55 pm) [pid: 8064]

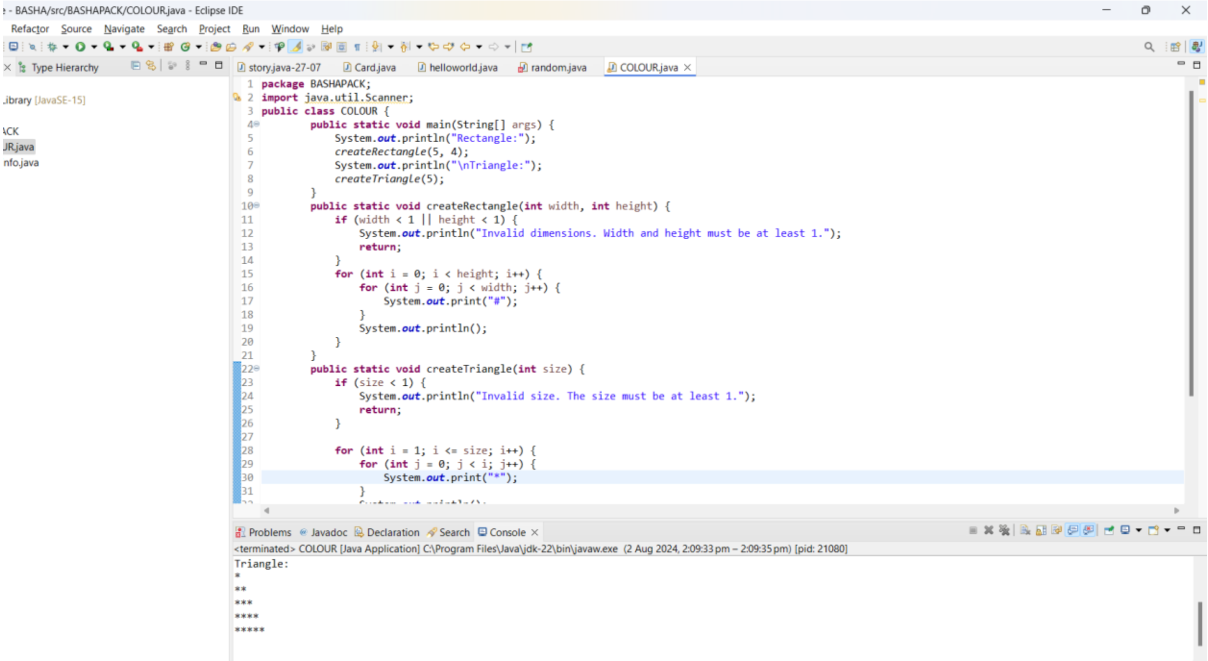
```
Enter your PIN: 24245
Incorrect PIN. Please try again.
Enter your PIN:
```



```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Choose a number: ");
            int number = scanner.nextInt();
            for (int i = 1; i <= 12; i++) {
                int result = number * i;
                System.out.println(number + "x" + i + " = " + result);
            }
            scanner.close();
        }
    }
```

<terminated> COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (2 Aug 2024, 2:02:57 pm

```
Choose a number: 143
143x1 = 143
143x2 = 286
143x3 = 429
143x4 = 572
143x5 = 715
143x6 = 858
143x7 = 1001
```



```java
package BASHAPACK;
import java.util.Scanner;
public class COLOUR {
        public static void main(String[] args) {
            System.out.println("Rectangle:");
            createRectangle(5, 4);
            System.out.println("\nTriangle:");
            createTriangle(5);
        }
        public static void createRectangle(int width, int height) {
            if (width < 1 || height < 1) {
                System.out.println("Invalid dimensions. Width and height must be at least 1.");
                return;
            }
            for (int i = 0; i < height; i++) {
                for (int j = 0; j < width; j++) {
                    System.out.print("#");
                }
                System.out.println();
            }
        }
        public static void createTriangle(int size) {
            if (size < 1) {
                System.out.println("Invalid size. The size must be at least 1.");
                return;
            }

            for (int i = 1; i <= size; i++) {
                for (int j = 0; j < i; j++) {
                    System.out.print("*");
                }
                System.out.println();
```

<terminated> COLOUR [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe (2 Aug 2024, 2:09:33 pm – 2:09:35 pm) [pid: 21080]

```
Triangle:
*
**
***
****
*****
```