Project 5

1. Determining color in the visible spectrum

```
import java.util.Scanner;
public class ColorRange {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      // Prompt the user to enter the wavelength
      System.out.print("Enter a color code: ");
      double wavelength = scanner.nextDouble()
      // Determine the color based on the wavelength
      String color;
      if (wavelength >= 380 && wavelength < 450) {
         color = "Violet";
      } else if (wavelength >= 450 && wavelength < 495) {
         color = "Blue";
      } else if (wavelength >= 495 && wavelength < 570) {
         color = "Green";
      } else if (wavelength >= 570 && wavelength < 590) {
         color = "Yellow";
      } else if (wavelength >= 590 && wavelength < 620) {
         color = "Orange";
      } else if (wavelength >= 620 && wavelength < 750) {
         color = "Red";
      } else {
         color = "The entered wavelength is not a part of the visible spectrum";
   }
      // Output the result
      if (color.equals("The entered wavelength is not a part of the visible spectrum")) {
         System.out.println(color);
      } else {
         System.out.println("The color is " + color);
```

```
        }
        scanner.close();
    }
}
```

OUTPUT:

```
] --- exec:3.1.0:exec (default-cli) @ project3 ---
  Enter a color code: 574
- The color is Yellow
  ------------------------------------------------------------
```

2. Determining the next color for a stop light

Code:

```
import java.util.Scanner;
public class TrafficLightChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        // Prompt the user to enter the current stop light color as a number
        System.out.print("Enter a color code: ");
        int currentColorCode = scanner.nextInt();
        // Determine the next stop light color based on the current color code
        String nextColor;
        if (currentColorCode == 1) {
            nextColor = "green";
        } else if (currentColorCode == 2) {
            nextColor = "yellow";
        } else if (currentColorCode == 3) {
            nextColor = "red";
        } else {
            nextColor = "Invalid color";
        }
        // Output the result
        if (nextColor.equals("Invalid color")) {
            System.out.println(nextColor);
```

```
        } else {
            System.out.println("Next Traffic Light is " + nextColor);
        }
        scanner.close();
    }
}
```

OUTPUT:

```
] --- exec:3.1.0:exec (default-cli) @ project3 ---
  Enter a color code: 3
- Next Traffic Light is red
  ------------------------------------------------------------------
```

3. : Determining the next color for a stop light using switch

CODE:

```
import java.util.Scanner;


public class TrafficLightSwitch {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        // Prompt the user to enter the current stop light color as a number
        System.out.print("Enter a color code: ");
        int currentColorCode = scanner.nextInt():
        // Determine the next stop light color based on the current color code using a switch statement
        String nextColor;
        switch (currentColorCode) {
            case 1:
                nextColor = "green";
                break;
            case 2:
                nextColor = "yellow";
                break;
            case 3:
                nextColor = "red";
```

```
            break;
        default:
            nextColor = "Invalid color";
            break;
    }
    // Output the result
    if (nextColor.equals("Invalid color")) {
        System.out.println(nextColor);
    } else {
        System.out.println("Next Traffic Light is " + nextColor);
    }
    scanner.close();
  }
}
```

OUTPUT: