**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:**

****

1. **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);

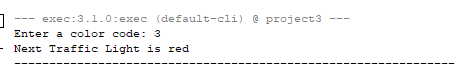
}

scanner.close();

}

}

**OUTPUT:**

****

1. **: 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);

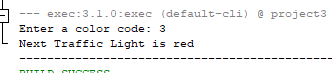
}

scanner.close();

}

}

**OUTPUT:**

****