

## Java Foundations Practices - Section 5

### Practice 5-1: Determining color in the visible spectrum

#### Overview

Write an interactive Java program, `ColorRange.java`, which when given a wavelength in nanometers will return the corresponding color in the visible spectrum.

Color	Wavelength (nm)
Violet	380-450
Blue	450-495
Green	495-570
Yellow	570-590
Orange	590-620
Red	620-750

#### Task

You must implement the following using a suitable `if` decision statement.

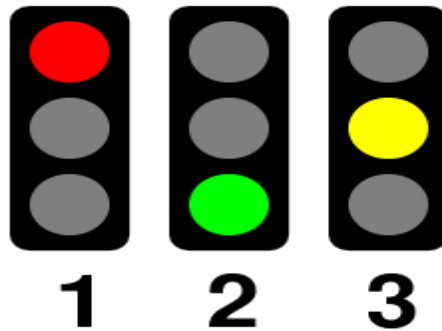
- Prompt the user to enter the wavelength, the wavelength should be of type `double`.
- For each range (e.g. 380-450) the number on the left is included in the range, but the number on the right is not included in the range.
- If the input value is not found on the visible spectrum then state that the wavelength is not within the visible spectrum.
- Expected Output:
  - Enter a color code  
630  
The color is Red
  - Enter a color code  
25.0  
The entered wavelength is not a part of the visible spectrum
  - Enter a color code  
750.5  
The entered wavelength is not a part of the visible spectrum

The `ColorRange.java` file is available to help you get started.

## Problem 5-2: Determining the next color for a stop light

### Overview

The normal behavior for a stop light is to cycle from Red to Green to Yellow to Red (and continues with this pattern). Write a java program `TrafficLightChecker.java`, which will determine the next color of a stop light in this pattern, Red to Green to Yellow to Red based on the current stop light provided by the user.



### Task

You must implement the following using a suitable `if` decision statement.

1. Have the user enter the value for the `currentColor`.
2. Compute the next color stop light based on the `currentColor`.
3. Alert the user for any invalid value of color.

### Expected Output:

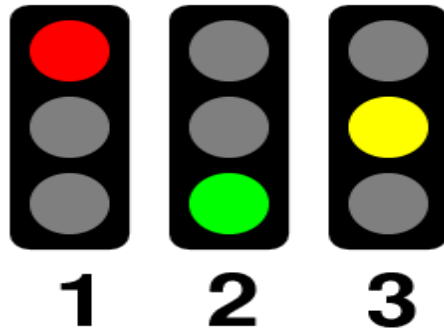
```
a. Enter a color code
1
Next Traffic Light is green
b. Enter a color code
3
Next Traffic Light is red
c. Enter a color code
0
Invalid color
d. Enter a color code
4
Invalid color
```

The `TrafficLightChecker.java` file is available to help you get started.

## Problem 5-3: Determining the next color for a stop light using switch

### Overview

Re-write practice 5-2 using `switch` statement.



### Task

Implement practice 5-2 using `switch` statement and ensure the program alert users if they've entered any invalid value.

The `TrafficLightSwitch.java` file is available to help you get started.