Problem Description

Consider, you are working for “Dhaka Metropolitan Police” as a software engineer. You need to create an app to maintain the traffic system. In Dhaka city, most of the time traffic is controlled manually by the traffic police. When the control is manual there is no need to update the traffic lights. However, if traffic signals are controlled automatically then the lights of the traffic poles should be updated accordingly. In this app the client can change the traffic controlling mode by using a single button. If the traffic controlling mode is “auto” then the client can control the lights using buttons. According to the clients choice different type of signal will be displayed. Client can change his/her preference in the run time.

In practice, there can be only three types of signals (red, green, and yellow) and one display window for each traffic pole. To control the signals the client can press corresponding buttons. The buttons will act according to the following table.

Button	**Command Promt Display**	**Window display**	
		Text	**color_name**
Green	N/A	GO!	green
Red	N/A	STOP!	red
Yellow	N/A	WAIT!	yellow
Manual/Auto	Watch traffic police/ Watch traffic signals	Nothing	Nothing

Description of the given skeleton:

You are given two classes.

1) TrafficCentral.java:
This class has a simple gui with a text field and four buttons “Green”, “Red”, “Yellow” and “Manual/Auto”. When the mode is manual the light buttons are disabled, and when the mode is auto the light buttons are enabled.

“GreenLightButtonListener()”, “RedLightButtonListener()”, “YellowLightButtonListener()”, and “UpdateModeButtonListener()” are called when “Green”, “Red”, “Yellow” and “Manual/Auto” buttons are pressed respectively. The “Manual/Auto” button changes its text based on a flag which is toggled when the button is clicked.

2) Window.java:
All the notifications will be displayed via GUIs. We have provided a very simple implementation of a GUI in this Window class, which you will use for your clients. This class creates a simple colored window with a JLabel (Simple text). Later in the document you will find code snippets to use it.
Tasks:

Write relevant codes so that whenever the manual/auto button in TrafficCentral is pressed, the traffic mode is displayed in the console. And when a light button is pressed corresponding alert text will be displayed in the window, and the color of the window will be updated accordingly. Note that the given code has no implementation of different light types, you have to write required codes for that. In ideal case, different light types will perform different set of actions. However for simplicity in this online, each light type will show only different texts and colors.

While writing new codes or modifying old codes you have the following restrictions:

1. You can modify only the green(), red(), yellow(), manual(), and auto() function of TrafficCentral.java. You can not modify any other methods of this class. However, you can add member variables and new methods as you need.
2. You can not edit the Window.Java class
3. You can create as many classes, abstract classes, and interfaces as you need.
4. You can not remove any code segments from any classes.

Code snippets for using Window class:

To create a window:
```
Window window;
window  = new Window("Title of the window");
```

To show a message in the window:
```
window.updateText(“The message to be shown”);
```

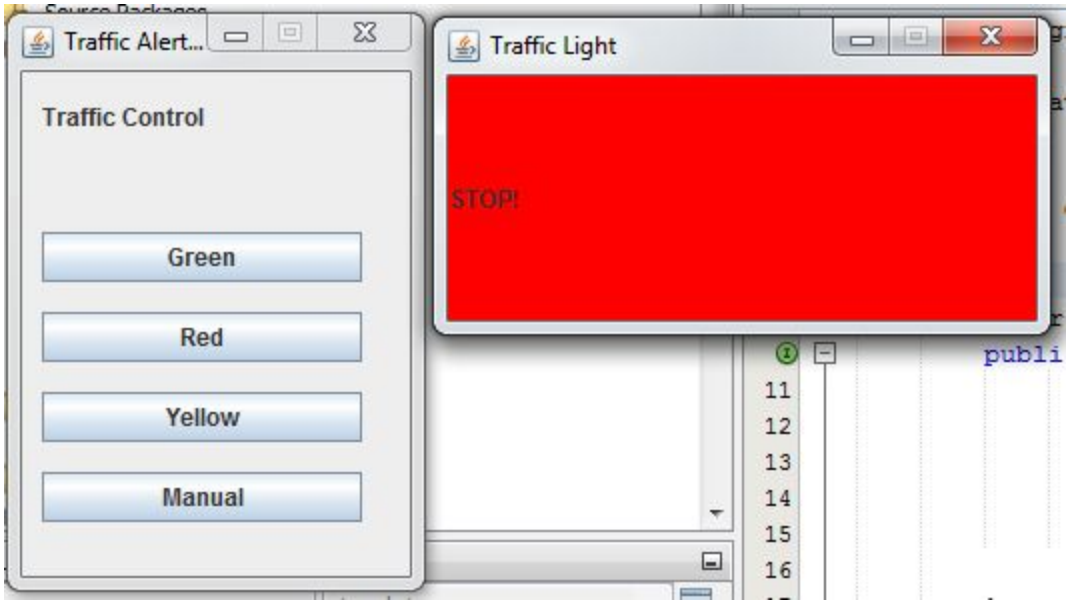
To update the color of the window:

window.updateColor(Color.color_name);

Screenshots:
Initial State: After “Manual” button pressed

After “Green” button pressed

After “Red” button pressed



After “Yellow” button pressed