

```

#1)
#include <iostream>

using namespace std;

class Counter {
public:
    Counter() {
        count = 0; //default, set count to 0
    }

    void addOne() {
        if (count >= 0) {
            count++;
            cout << count << endl; //increments when called
        }
        else {
            cout << "Count must be greater than or equal to 0." << endl; //must be
positive or 0
        }
    }

    void subtractOne() {
        if (count > 0) {
            count--; //decrements
            cout << count << endl;
        }
        else {
            cout << "Count must be greater than or equal to 0." << endl;
        }
    }

private:
    int count;
};

int main() {
    Counter ct; //testing
    ct.addOne();
    ct.subtractOne();
    ct.subtractOne();
    ct.addOne();
    ct.addOne();
    ct.addOne();

    return 0;
}

```

#2)

```
#include <iostream>
using namespace std;

class StopLight {
private:
    int currentColor; // color is stored as an integer,
                      // 0 for green, 1 for yellow, 2 for red
public:
    StopLight() {
        currentColor = 2;
        // Provide/Fill in the constructor. New stoplights should
        // show red by default
    }
    string getColor() {
        // Fill in the method. It should return the String "RED",
        // "YELLOW", or "GREEN" as appropriate
        string str;
        if (currentColor == 0) {
            str = "GREEN";
        }
        else if (currentColor == 1) {
            str = "YELLOW";
        }
        else {
            str = "RED";
        }
        cout << str << endl;
        return str;
    }
    void changeColor() {
        //Fill in the method. If the light is currently red, it
        // should change to green.
        // If the light is currently green it should change to //
        //yellow. And if the light is currently yellow it should
        // change to red.
        if (currentColor == 0 || currentColor == 1) {
            currentColor++;
        }
        else {
            currentColor = 0;
        }
    }
};
```

```
// #3)
int main() {

    StopLight light; //tests
    light.getColor();
    light.changeColor();
    light.getColor();
    light.changeColor();
    light.getColor();
    light.changeColor();
    light.getColor();

    return 0;
}
```