Lab 7
Line Finder Assignment

Our goal today is to create a robot that will scan its immediate surroundings, and detect a line to follow. The robot should rotate 360 degrees, taking periodic light sensor readings. These readings should be stored, and used to find the most likely line (dark area). The robot will then orientate itself in the direction of the line. It can then shut down.

Perform these steps on a lab computer (logged into Windows). Save the files on you T: drive, in a new directory in CSCI1111. Only one group member must create these files.

1. Create a file “LineFinder.java” with the following contents:

```
import edu.gwu.Jobot.agents.standalone.LejosAgent;
import javax.microedition.lcdui.Graphics;
import lejos.nxt.*;

public class LineFinder extends LejosAgent
{
    public static void main(String[] args)
    {
        LineFinder neo = new LineFinder();
        neo.perform();
    }

    public void perform()
    {
        LightSensor light = new LightSensor(SensorPort.S2);

        // There is no need to display graphical output, but it may be helpful
        Graphics g = new Graphics();

        // How many readings do you need to take? Store in an array
        int[] lightReadings = { ... }

        for( ; ; ) { // This loop should rotate the robot, and take light readings

            if (Button.ESCAPE.isPressed()) {
                System.exit(0);
            }
        }
        // ligthReadings should be full, find the most likely line
        // and turn the robot towards it.

        System.exit(0);
    }
}
```

2. Remember to upload your program at the end of lab.

Important methods:

```
light.readNormalizedValue(); // Returns light reading (0 – 1023)
try { Thread.sleep( m ); } catch (Exception e) {} // pause execution
```

Commands:

```
nxjc -cp C:\Jobot.jar LineFinder.java
nxj -cp .;C:\Jobot.jar LineFinder
```