NCPS Tutorial#3

In this tutorial you will learn to program your NewCDbot so that it reacts to a connected light sensing photocell sensor. We will program the robot to remain still if it senses low amounts of light and drive backwards if it senses large amounts of light with its light sensor.

We are ready to start programming with the NewCDbot Programmer Software (NCPS). First open up the NCPS by double clicking on the NCPS icon, which should appear as shown below.

Start a new program by clicking on the File menu and then click New. You may also want to add a comment, which explains that you are the creator of this program. Also be sure to give your new program a unique name using the Save As menu command.

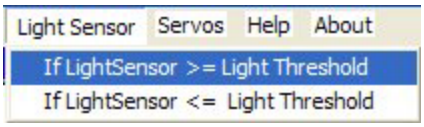
First, we will program the logic for the low light detection case. To accomplish this we will have to set the Light Threshold to 127 using the Light Threshold scrollbar shown below. You may have to adjust the Light Threshold to be either greater than or less than 127, this will depend upon your photocell sensor.

To make our robot react when it sees less light, we will use the "If LightSensor <= Light Threshold" logic command, which is located under the "Light Sensor" menu. Be sure to delete the line of code that reads, “Delete this line of code and add your own code!”

If our robot detects less light we want it to remain still, so we will use the "Stop" command to make our robot remain motionless. Click the Stop button to add it to our program. Our code window should now display the following code shown below. Click the "Format Code" button so that your code is properly formatted.

```
Sub RunRobot()
    If LightSensor <= 127 Then
        STOP
    End If
End Sub
```

To make our robot react when it sees more light, we will use the "If LightSensor >= Light Threshold" logic command, which is located under the "Light Sensor" menu.



If our robot detects more light we want it to drive backwards, so we will use the "Reverse" command to make our robot drive backwards when it detects more light. Click the Reverse button to add it to our program. Our code window should now display the following code shown below. Click the "Format Code" button so that your code is properly formatted.

```
Sub RunRobot()
    If LightSensor <= 127 Then
        STOP
    End If
    If LightSensor >= 127 Then
        BACK
    End If
End Sub
```

We would like our robot to repeat this behavior over and over again. The "Do Loop" command will cause our program to repeat forever or until we turn off our robot. To add the Do Loop to our program simply click the "Add Do Loop" button. Our program is finally complete and should appear as shown below.

```
Sub RunRobot()
Do
    If LightSensor <= 127 Then
        STOP
    End If
    If LightSensor >= 127 Then
        BACK
    End If
Loop
End Sub
```

You are now ready to compile/download your program and test it out to see if it works. Congratulations you have just completed the tutorial!