

Line-following with Two Light Sensors

These are the four conditions that our robot could potentially encounter:

1. If the left sensor sees light and the right sensor sees light, your robot is right over the line, so it should go straight.
2. If the left sensor sees light and the right sensor sees dark, your robot is to the left of the line, so it needs to make a right non-point turn.
3. If the left sensor sees dark and the right sensor sees light, your robot is to the right of the line, so it must make a left non-point turn.
4. If the left sensor sees dark and the right sensor sees dark, something is not right because this shouldn't occur while following a line so tell your robot to stop.

Now that we know our conditions all we need to do is add light sensor fork icons to our program to check for each one of them. Start your program out with a Red Land icon because we're going to loop our program. Next, add a Light Sensor Fork, set it to watch the input from your left-mounted light sensor. Now, add another Light Sensor Fork to the top branch from your first light sensor fork. Set this Light Sensor Fork to watch the right-mounted light sensor. The top branch of this Light Sensor Fork matches with the first of the four cases, above. Add icons to this branch to make your robot move forward. The lower branch corresponds with the second case above so use what you've learned about turns and add icons to make your robot turn right. Now add a third Light Sensor Fork to the lower branch of the first Light Sensor Fork. Set this Light Sensor Fork to also watch the right-mounted light sensor. The top branch of this third Light Sensor Fork matches the third condition listed above, so add icons to tell your robot to make a left non-point turn. Finally, the lower branch of this third Light Sensor Fork matches up with the fourth case above so tell your robot to stop.

Before your program will work you will need to add Fork Merge icons for all three forks and wire them correctly. After all the forks have been closed, add a Red Jump icon to make your program loop. Also, don't forget to give your Light Sensor Forks a threshold value.

A note about the threshold values for the two light sensors: The threshold value that you calculated for the first light sensor is only good for that light sensor. You will need to calculate the threshold value for the second light sensor. Because each light sensor has slightly different characteristics, the threshold value for the second light sensor will probably be different than the threshold value for the first light sensor.

