



CODEBOT MISSION 6 LOG - Lesson 2

Pre-Mission Warm-Up

Use this list to answer the questions in the chart:
`my_numbers = [4, 2, 5, 3, 6, 9, 1, 0]`

Name of list	my_numbers
Length of list	8
my_numbers[0]	4
my_numbers[4]	6
my_numbers[7]	0

What LEDs turn on when the code runs?

leds.ls(0b00001)	Line sensor 0
leds.ls(0b01110)	Line sensors 1, 2, 3
leds.user(0b01100001)	User LEDs 0, 5, 6

Mission 6 Lesson 2 – Line Follower

Data Type Review

Identify the data types of the values.

“Hello”	String (str)
5	Integer (int)
5.0	float
[1, 2, 3, 4]	list
-17	int
6.25	float

Mission 6 Objective 4

Type the code in the Console Panel. What are the line sensor readings?

```
>>> from botcore import *
>>> ls.check(0)
```

Answers will vary, depending on lighting and where the black paper is under the line sensors.

(209, 229, 1924, 3168, 3964)

Type the code in the Console Panel. What is the tuple?

```
>>> ls.check()
```

Answers will vary, but they should match values from the first reading.

(False, False, True, True, True)

Mission 6 Objective 5

Write code that will turn the 'bot to the left.	<p><i>Answers can vary. Students can use actual speeds or the constant they declared.</i></p> <pre>motors.run(LEFT, 0) motors.run(RIGHT, SPEED)</pre>
Write code that will turn the 'bot to the left.	<pre>motors.run(LEFT, SPEED) motors.run(RIGHT, 0)</pre>
Write code that will move the 'bot forward	<pre>motors.run(LEFT, SPEED) motors.run(RIGHT, SPEED)</pre>
After testing your code with different speeds and curves, write your observations.	<p><i>Answers will vary. Students should observe that the 'bot can go off the rails quickly when the speed is high. Also, it doesn't really navigate sharp corners or gaps very well.</i></p>

Mission 6 Objective 6

What is a logical operator?	<p>A type of operator that allows for multiple conditions in a comparison. It handles combinations of Boolean results.</p>
Modify your code to change the else to an elif. After testing your code with different speeds and curves, write your observations.	<p><i>Answers will vary. Students should observe that the 'bot can stay on the line with higher speeds, but it still can go off the rails. Sharp angles also cause a problem.</i></p>

Post-Mission Reflection

How is ls.check() different from check_lines()?	<p>Answers will vary. Possible answers may include:</p> <ul style="list-style-type: none"> • It is pre-coded, while the other is user defined. • It checks all the line sensors more quickly. • It requires two parameters. • It returns a tuple instead of a list. • It uses the is_reflective parameter to determine if > thresh or < thresh.
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