🤖 CODEBOT MISSION 5 LOG - Lesson 3

Pre-Mission Warm-Up

Identify the parts:

```python
def detect_line(n):
    is_detected=ls.read(n)>2000
    leds.ls_num(n, is_detected)

while True:
    detect_line(3)
```

Function definition	def detect_line(n):
Parameter	The n in def detect_line(n):
Argument	The n in ls.read() or The n in leds.ls_num(n, is_detected)
Function call	detect_line(3)
Another argument	The 3 in detect_line(3) {or one from above}

Mission 5 Lesson 3 – Fence Patrol

Mission 5 Objective 6

What does this code segment do?

```python
while True:
    if buttons.was_pressed(0):
        break

motors.enable(True)
```

It is a safety feature where the robot will not move until BTN-0 is pressed.

Mission 5 Objective 7 (Part 1)

Try the same problems in the chart. Each problem has a function with a return, and a function call.

What is the final value of **answer** after each function call?

```python
def some_math(n):
    result = 3 * n + 1
    return result

answer = some_math(4)
```

answer = **13**

```python
def some_math(x):
    y = x * 5 - 2
    return y

answer = some_math(3)
```

answer = **13**

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```
def my_function(val):
    if val > 2000:
        return True
    else:
        return False


answer = my_function(2500)
```

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```
def detect_line(val):
    detect = val > 2000
    leds.ls_num(0, detect)
    return detect


answer = detect_line(250)
```

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	answer = **True**	answer = **False**
What information will detect_line() return?	True / False: if a single line sensor detects a black line.	
What information will scan_lines() return?	True / False: if at least one line sensor detects a black line.	

Mission 5 Objective 7 (Part 2)

What line of code assigns a variable the return value from scan_lines()?	hit = scan_lines()

What does this if statement do?
 	
`if hit:`
`    line_count = line_count + 1`
`    leds.user(line_count)`
	Possible answer:
	It uses the Boolean variable hit, which is True or False. If a line was hit by any line sensor, the counter variable is incremented and its value is displayed in binary on the red user LEDs.

Run the code and count up to 255 line detections. This will turn on all user LEDs. Then detect one more line. The program ends with an error message.	What is the error message when the program ends? ValueError: LED value out of bounds

Mission 5 Objective 8

What is a runtime error?	Two possible answers: • A coding error that happens while the program is actively running. • A ValueError, like when the program tries to access an LED number that isn't there.

What does this code do?
 	
`line_count = line_count + 1`
`if line_count == 256:`
`    line_count = 0`
	It increments the counter variable. Then, if the value is 256, the variable is reset to 0.

Post-Mission Reflection

How does a function send back a value to the function call?	It uses a return statement. The value returned is received by the function call.

Give an example of calling a function that has a return.	Two examples from the program are: ● if detect_line(n) ● hit = scan_lines()