



# CODEBOT MISSION 4 LOG - Lesson 1

## Pre-Mission Warm-Up

What code turns on a user LED? `leds.user_num(0, True)`

What code defines a variable for delay? `delay = 1.0`

## Mission 4 Lesson 1 – Animatronics

### Mission 4 Introduction

What is the first step outlined in the notes? The robot starts out asleep and constantly blinking RED LEDs in a cool pattern.

What is the first project goal? Blink the red user LEDs constantly in a cool pattern.

### Mission 4 Objective 1

- Create a new file SweepLEDs. Follow CodeTrek to write your code. Observe what happens.

What is an infinite loop? An infinite loop is a loop that never ends because the condition is always True.

Type the code from CodeTrek and run the program. Then change the value of `n_led` a few times. What is `n_led` used for? The variable `n_led` is used to indicate which LED to turn on and off.

### Mission 4 Objective 2

Updating a variable practice:  
Look at each sample code. Write down the final value of the variable after the sample code runs:

```
count = 5
count = count + 1
```

count = 6

```
loops = 0
loops = loops + 1
loops = loops + 1
```

loops = 2

```
n_led = 1
n_led = n_led + 2
n_led = n_led + 2
n_led = n_led + 2
```

n\_led = 7

What error do you get when you run the code from CodeTrek? `ValueError: User LED must be in range 0-7`

### Mission 4 Objective 3

Use the debugger to see the value of `n_led` when the error occurs. What is the value of `n_led` that causes an error? `n_led = 8`

What will you do to fix this error? Use control flow logic. After adding 1 to `n_led`, check to see if it has reached 8. If so, set it back to 0.

How is the double equal (==) different from the single equal (=)	The single equal (=) is used for assignment, and the double equal (==) is used to compare.
<b>Post-Mission Reflection</b>	
How are while loops and if statements similar?	<p>Answers can vary.</p> <ul style="list-style-type: none"> <li>• Both indicate a block of code.</li> <li>• Both end with a colon (:)</li> <li>• Both have a condition.</li> <li>• Both do something when the condition is True.</li> <li>• Both have a way of controlling program flow.</li> </ul>
How are while loops and if statements different?	<p>Answers can vary.</p> <ul style="list-style-type: none"> <li>• A while loop runs continuously while the condition is true, but an if statement only runs once.</li> <li>• An if statement can have more branches, like an elif and else.</li> <li>• A loop can be infinite and never end. An if statement runs once and always ends.</li> </ul>