



CODEBOT MISSION 4 LOG - Lesson 1

Pre-Mission Warm-Up

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| 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 – Animtronics

Mission 4 Introduction

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| 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.

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| 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

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| Updating a variable practice: Look at each sample code. Write down the final value of the variable after the sample code runs: | <pre>count = 5 count = count + 1</pre> <pre>loops = 0 loops = loops + 1 loops = loops + 1</pre> <pre>n_led = 1 n_led = n_led + 2 n_led = n_led + 2 n led = n led + 2</pre> |
| | <pre>count = 6</pre> <pre>loops = 2</pre> <pre>n_led = 7</pre> |

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| What error do you get when you run the code from CodeTrek? | ValueError: User LED must be in range 0-7 |
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Mission 4 Objective 3

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| 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. |

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