ANSWER KEY

CODEBOT MISSION 3 LOG - Lesson 4

Pre-Mission Warm-Up	
How do you move CodeBot forward?	Both wheels have the same positive power: motors.run(LEFT, 50) motors.run(RIGHT, 50)
How do you rotate CodeBot clockwise?	Both wheels have equal power, but one wheel is positive and one wheel is negative: motors.run(LEFT, 50) motors.run(RIGHT, -50)
Mission 3 Lesson 4 – Get Moving (Objective 9-11)	
Mission 3 Lesson 4 Introduction	
What safety feature will you use so the 'bot doesn't start moving right away?	A type of countdown, where the middle user LEDs are on for a delay, then turned off to give time to unplug the 'bot, place it on the floor, and press a button.
How many seconds of delay will you need to move the 'bot from your computer to the floor?	Answers will vary. It depends on how far away the students are from the testing area. Students shouldn't rush but be safe.
What does the code look like for the safety feature?	leds.user(0b00011000) sleep(10) leds.user(0) if buttons.was_pressed(0):
What is the condition of the if statement?	buttons.was_pressed(0)
What are the possible values of buttons.was_pressed()?	True or False
Mission 3 Objective 9	
What is an algorithm?	A list of instructions, in order, that the computer can follow to complete a task.
Write your Complete algorithm for moving CodeBot in a square. Add more steps to complete your algorithm. **Sample algorithm →**	Step 1: import libraries Step 2: safety feature Step 3: move forward 10 inches Step 4: rotate 90 degrees clockwise Step 5: move forward 10 inches Step 6: rotate 90 degrees clockwise Step 7: move forward 10 inches Step 8: rotate 90 degrees clockwise Step 9: move forward 10 inches

What is a comment?	Notes to the programmer that are ignored by the computer.
Mission 3 Objective 10	
What does “control flow” mean?	Decision points in code that allow the computer to take a different path, depending on a condition.
What happens when you press BTN-0?	The code inside the first branch (if buttons.was_pressed(0):) is executed, and then the program ends.
What happens when you press BTN-1?	The code inside the second branch (elif buttons.was_pressed(1):) is executed, and then the program ends.
What happens when you don’t press a button?	The code inside the third branch (else:) is executed, and then the program ends.
Mission 3 Objective 11	

Write your Complete algorithm for the ***WhatIf*** program. Add more steps to complete your algorithm.
 	
Sample algorithm →
	Step 1: import libraries
	Step 2: safety feature
	Step 3: if button 0 is pressed:
	  Move CodeBot in a square
	Step 4: elif button 1 is pressed:
	  Have CodeBot flash LEDs in a light show
	Step 5: else (neither is True)
	  Turn on all LEDs, wait, and turn off all LEDs

Post-Mission Reflection	
Summarize how the if/elif/else control flow structure works.	Answers will vary. A good answer should include at least some of the following: The if and elif statements each have a condition, like buttons.was_pressed(). If one of the conditions is True, the indented code for that branch is executed, and the rest of the code is skipped. If neither condition is True, the indented code for the else branch is executed and the rest of the code is skipped.