|  |  |  |
| --- | --- | --- |
| **AP CSP Python with Robots**  **Mission 4 Obj 1-7 Assignment** | | **Name:** |
| **Mission 4 Introduction** | | |
| Read the introduction and project goals. During this assignment, you will complete the first two goals. | | |
| **Mission 4 Objectives 1-7** | | |
| Complete Objective 1.  What is a while statement used for? |  | |
| After completing the code in Objective 1, you observe that you can define a function for sweeping the LEDs, and then call the function in the while loop. This will increase the readability of your code.  Define a function sweep\_leds() for the 4 lines of code. Then call the function inside the while loop. Does the function need a parameter? | | |
| Complete Objective 2. The code should be added to the main program, and not the function.  What does it mean to “update a variable”?  Give an example of updating a variable:  What is the error message given? |  | |
| Complete Objective 3. Use the debugger to step through the program and observe the value of the global variables.  What is the difference between a double equals and a single equals? |  | |
| Complete Objective 4. Add code as instructed in the while loop. Did you notice a sleep(delay) was removed? Delete it from your function. |  | |
| Complete Objective 5.  What does “increment” mean? Give an example.  Why do you think you turn on the LED before incrementing the counter? |  | |
| Complete Objective 6. Click on User Interface to add it to the toolbox. |  | |
| Complete Objective 7. Explain why a button press may count more than once, and how you can fix a bad bounce. |  | |
| After completing the code in Objective 7, you observe that you can define a function for counting the guests, and then call the function in the if statement for the button press. This will increase the readability of your code.  Define a function count\_guests() for the 5 lines of code that beep, debounce and turn on an LED. Then call the function inside the if statement. Does the function need a parameter?  Your main program may look similar to this: | | |
| After Objective 7, submit your ***SweepLEDs*** program to the teacher. | | |