Name:

Mission 10 Assignment – Reaction Tester

In this project you will create a device to measure your reaction time. Your time will be displayed, and you can try again.	**Mission 10: Reaction Tester** ✓ Create a game to measure a player's reaction time!

You will create code during this lesson. When you encounter an error, make a note of what is happening and **document your debugging** process in the **table** below.

1. Read the introduction and complete Objective #1. You do not need to create a list.

(Review): What is an argument?	
What will you get with **randrange(1000, 5000)**?	
How do you go from milliseconds to seconds?	

2. Complete Objective #2. Suggestion: Create a function for the countdown and call the function in the main program.

3. Complete Objective #3.

What does this line of code do? `start_time = time.ticks_ms()`	
What is the difference between **import** and **from import**?	

4. Complete Objective #4. You might want to click on "monotonic".

What is "monotonic" and how does it affect your computer clock?	

5. Complete Objective #5. Keep playing by putting your code in an infinite loop. If you created a function, remember that functions do NOT go inside the loop.

6. Complete #6. Reduce repetition by creating a function.

7. Complete the Quiz and Objective #7. Complete the reaction tester as instructed in the mission.

EXTENSION #1:
Using a different button (not A) program a "kill switch" to end the program. Display a message after the loop that indicates the program is over.

EXTENSION #2:

Add more functions. Right now you have two functions. But the code in the while loop is pretty long. Another reason to create and use functions is to make your code readable, and to chunk it into manageable pieces. Create one or two more functions with your code. Suggestion: create a function for the code that does the randomization and a function for the code that gets the reaction time. A function can call another function.

CHALLENGE:

Use a counter and selection to determine a win or lose. Use a function for this, and pass the counter as a parameter for your function.

To turn in the assignment, download your code (FILE-DOWNLOAD), which will be a text file. Add your name in the filename. Then submit the file through Google Classroom or the class LMS.

Debugging Table

As you create code, you will make mistakes. Keep track of the mistakes in the table below. Doing so will help you become a more confident programmer. Add rows to the table as needed.

Error message that is displayed	Actual bug	How you fixed it

SUCCESS CRITERIA:
- ❏ Give the player a 3-2-1 countdown.
- ❏ Program a random delay so the player can't "guess" the timing.
- ❏ Measure the time until a button press occurs.
- ❏ Scroll the reaction time across the display.
- ❏ Wait for a button press, then restart the game.
- ❏ Use functions to reduce repetition and to organize your code.