

Computer Program Documentation

You MUST provide evidence showing how the program has been debugged, tested, trialled and feedback used to improve a final, working outcome.

Program Outline

Provide an overview of the program purpose, the intended end users, how the program will function, what the end user can expect e.g. messages to help them enter the correct information, any scores or feedback on their progress and how it ends.

The purpose of the program is to provide a mathematics quiz using addition, subtraction, multiplication, and division to school students between the ages of 12 to 16. It will provide the instructions:

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' *** Instructions ****'
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To begin, choose the number of rounds.

Then, answer the given question with a number.

Round to two decimal places when necessary.

Good Luck! '

if the user inputs yes. The program will then continue. If the user inputs 'no', it will not print the instructions, and the game will continue. It will then ask the user how many rounds they would like to complete between 5 and 15. At any time during the quiz, the user can input 'xxx' to exit. If the user gets the answer correct, the program prints '✅ Correct! ✅'. If the user gets it incorrect, the program will print '❌ Incorrect! ❌ The correct answer was: {correct_answer}'. Once the user has completed or exited the quiz, they have the option to see their game history. If they choose no, the program prints 'Thanks for playing.' and ends the game. If the user inputs yes, it will show the round number, what the user's input was, and whether or not they were correct. It will then print 'Thanks for playing.'

Debugging

Show evidence (screenshots) of bugs (problems/errors) that prevent the program functioning. Add a brief description of the error and what you did to fix it.

Problem / Error	Fixed code	Description
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<pre> 🎮 Round 1 of 5 🎮 Question 1: 11 / 8 = 1.38 ❌ Incorrect! ❌ The correct answer was: 1.38 You put: 1.38, ❌ Incorrect! ❌ The correct answer was: 1.38 </pre>	<pre> # Deciding and generating question operator = random.choice(operator_list) num1 = random.randint(-12, 12) num2 = random.randint(-12, 12) question = str(num1) + ' ' + operator + ' ' + str(num2) correct_answer = round(eval(question), 2) # Get user input while True: try: if operator == '/': user_input = float(input(f'{question} = ')) float(correct_answer) break else: user_input = int(input(f'{question} = ')) break except ValueError: print('Please enter a number') </pre>	<p><i>Program always output incorrect even if answer was correct.</i></p>
<pre> 🎮 Round 4 of 5 🎮 12 + -1 = 0.123 Please enter a number 12 + -1 = </pre>	<pre> to_check = float(input(question)) try: response = int(to_check) # checks that the number is between low and high if low <= response <= high: return response else: print(error) except ValueError: print(error) </pre>	<p><i>When testing my code, I found that it didn't accept any numbers with decimal places.</i></p> <p><i>To fix the issue, I made my integer checker able to take floats.</i></p>
<pre> 🎮 Round 5 of 5 🎮 5 + 0 = abc Traceback (most recent call last): File "C:\Users\isaac\OneDrive\Desktop\Assignment\math_quiz\main.py", line 121, in <module> user_input = int_check(question, float('-inf'), float('inf'), 0) File "C:\Users\isaac\OneDrive\Desktop\Assignment\math_quiz\main.py", line 15, in int_check to_check = float(input(question)) ValueError: could not convert string to float: 'abc' </pre>	<pre> try: response = int(to_check) # checks that the number is between low and high if low <= response <= high: return response else: print(error) except ValueError: try: response = float(to_check) # checks that the number is between low and high if low <= response <= high: return response else: print(error) except ValueError: print(error) </pre>	<p><i>After solving the last issue, my integer checker could no longer accept strings.</i></p> <p><i>I had to add another try-except loop to solve the issue.</i></p>

Testing Schedule

Show evidence that you have tested for expected, boundary (e.g. if the boundary is numbers 5 - 10, test for numbers 4, 5, 10 and 11) and invalid input e.g. entering a name, number etc. Add a screenshot of the results .

Test plan for Yes_No function

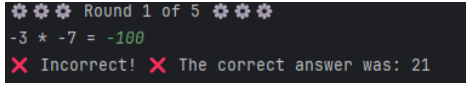
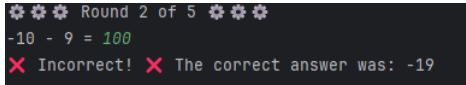

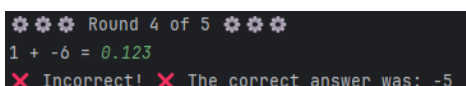
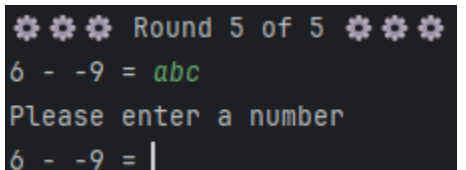
Data Input	Expected Output (<i>What should happen</i>)	Actual Output (<i>What did happen</i>)
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bob	'Please enter a valid option from the following list: ['yes', 'no'] Repeat question	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? bob Please enter a valid option from the following list: ['yes', 'no'] Do you want to see the instructions?]</pre>
yes	Print instructions Program Continues	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? yes *** Instructions *** To begin, choose the number of rounds. Then, answer the given question with a number.</pre>
no	Program Continues	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? no How many rounds (between 5 and 15) would you like:</pre>
y	Print instructions Program Continues	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? y *** Instructions *** To begin, choose the number of rounds. Then, answer the given question with a number.</pre>

Test plan for int_check function, error code 1

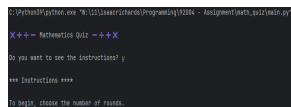
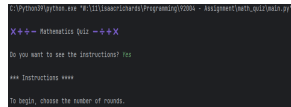
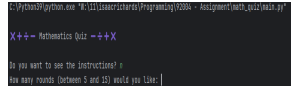
Data Input	Expected Output(<i>What should happen</i>)	Actual Output (<i>What did happen</i>)
4	'Please enter a number between 5 and 15' Repeat question	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? n How many rounds (between 5 and 15) would you like: 4 Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like:</pre>
16	'Please enter a number between 5 and 15' Repeat question	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? n How many rounds (between 5 and 15) would you like: 16 Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like:</pre>
xyz	'Please enter a number between 5 and 15' Repeat question	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? n How many rounds (between 5 and 15) would you like: xyz Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like:]</pre>
5	Program continues	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? n How many rounds (between 5 and 15) would you like: 5 *** Round 1 of 5 *** 10 + -10 =</pre>
15	Program continues	<pre>C:\Python39\python.exe "W:\111\isaacrichards\Programming\92804 - Assignment\math_quiz\main.py" X++- Mathematics Quiz --++X Do you want to see the instructions? n How many rounds (between 5 and 15) would you like: 15 *** Round 1 of 15 *** 10 / -4 =]</pre>

Test plan for int_check function, error_type 0

Data Input	Expected Output (<i>What should happen</i>)	Actual Output (<i>What did happen</i>)
-100	Program continues	
100	Program continues	
0	Program continues	
0.123	Program continues	
abc	'Please enter a number' Ask question again	

Program Testing

Show evidence your final working program has been fully tested for expected, **boundary** and **invalid** input. This can either be as screenshots or a short Screencastify video

Stage of quiz	Input	Expected output	Actual output
Instructions	y	Program prints instructions	
	Yes	Program prints instructions	
	n	Program continues without printing instructions	

	no	Program continues without printing instructions	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? no How many rounds (between 5 and 15) would you like: </pre>
	yed	Program asks user to enter an option from [yes, no]	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? yes Please enter a valid option from the following list: ['yes', 'no'] Do you want to see the instructions? </pre>
	123	Program asks user to enter an option from [yes, no]	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? 123 Please enter a valid option from the following list: ['yes', 'no'] Do you want to see the instructions? </pre>
	#\$%^&#\$	Program asks user to enter an option from [yes, no]	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? after\$ Please enter a valid option from the following list: ['yes', 'no'] Do you want to see the instructions? </pre>
Round selection	4	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: 4 Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>
	16	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: 16 Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>
	5	Program continues	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: 5 How many rounds (between 5 and 15) would you like: 5 Round 1 of 5 X++- X++- X++-</pre>
	15	Program continues	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: 15 How many rounds (between 5 and 15) would you like: 15 Round 1 of 15 X++- X++- X++-</pre>
	5.5	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: 5.5 Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>
	abc	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: abc Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>
	no input	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>
	#\$%^&#\$	Program asks user to enter a number between 5 and 15	<pre>1: /Python3/python.exe "C:\Users\isaacrichards\Programming\Python - Assignment\math_quiz\main.py" X++- Mathematics Quiz -++X Do you want to see the instructions? o How many rounds (between 5 and 15) would you like: after\$ Please enter a number between 5 and 15 How many rounds (between 5 and 15) would you like: </pre>

Game Loop	999999999999999999	Either correct / incorrect, program continues	<pre> *** Round 1 of 6 *** 5 - -4 = 9999999999999999 X Incorrect! X The correct answer was: 9 </pre>
	-999999999999999999	Either correct / incorrect, program continues	<pre> *** Round 2 of 6 *** 9 / 10 = -9999999999999999 X Incorrect! X The correct answer was: 0.9 </pre>
	0	Either correct / incorrect, program continues	<pre> *** Round 3 of 6 *** 3 - 1 = 0 X Incorrect! X The correct answer was: 2 </pre>
	0.1	Either correct / incorrect, program continues	<pre> *** Round 4 of 6 *** 1 * -4 = 0.1 X Incorrect! X The correct answer was: -4 </pre>
	-0.1	Either correct / incorrect, program continues	<pre> *** Round 5 of 6 *** -3 / 12 = -0.1 X Incorrect! X The correct answer was: -0.25 </pre>
	abc	Asks user to input a number	<pre> *** Round 6 of 6 *** 3 / 3 = abc Please enter a number 3 / 3 = </pre>
	#\$%^*^#\$	Asks user to input a number	<pre> *** Round 1 of 5 *** 10 / -7 = #\$%^*^#\$ Please enter a number 10 / -7 = </pre>
Game History	y	Program prints game history, prints thanks for playing	<pre> Do you want to see your game history? y Round: 1 - You put: 1, X Incorrect! X Round: 2 - You put: 1, X Incorrect! X Round: 3 - You put: 1, X Incorrect! X Round: 4 - You put: 0.1, X Incorrect! X Round: 5 - You put: -0.1, X Incorrect! X Round: 6 - You put: 5, X Incorrect! X Thanks for playing. Process finished with exit code 0 </pre>
	Yes	Program prints game history, prints thanks for playing	<pre> Do you want to see your game history? Yes Round: 1 - You put: 1, X Incorrect! X Round: 2 - You put: 1, X Incorrect! X Round: 3 - You put: 1, X Incorrect! X Round: 4 - You put: 1, X Incorrect! X Round: 5 - You put: 1, X Incorrect! X Thanks for playing. Process finished with exit code 0 </pre>
	n	Program prints thanks for playing	<pre> Do you want to see your game history? n Thanks for playing. Process finished with exit code 0 </pre>
	no	Program prints thanks for playing	<pre> Do you want to see your game history? no Thanks for playing. Process finished with exit code 0 </pre>

	yed	Program asks user to enter from list : [yes, no]	
	123	Program asks user to enter from list : [yes, no]	
	#\$%^&#\$	Program asks user to enter from list : [yes, no]	

Usability/End User Testing

Write a list of improvements which need to be made based on end user feedback. Add information about what you changed to meet the end user feedback. - This is not assessed, but is good practice.

Post Usability Testing

Show that your program works correctly after making the improvements. This can be screenshots or a short Screencastify video