

Javascript Decision Making

Take your first Javascript program (calculating grades) and modify it to do error checking and better grade reporting. You are given a starting index.html, calculate.js and main.css. Your assignment is to fill in the two functions in calculate.js. You may modify the files in any way you need to complete the assignment but your grade is partially based on correct architecture and modular design.

JavaScript functions: You must have at least these two functions, but you may make more if you find them useful.

- **calculate()**: This function will do all of the following:
 - Collect the values from the form.
 - Test them for valid numbers.
 - If all numbers are valid, calculate a grade and display it in black in the "answer-area".
 - If any number is not valid, display appropriate error messages in red in the "answer-area".
- **getLetterGrade(grade)**: pass in a float grade and return a string based on these numbers:
 - 90-100: "an A."
 - 80-89.99...: "a B."
 - 70-79.99...: "a C."
 - 60-69.99...: "a D."
 - below 60: "an F."

Use this function in your program to get the letter grade for display.

Use the following examples as a guide.

Example 1: All valid input.

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
<input type="text" value="92"/>
Test 2 Score
<input type="text" value="87"/>
Homework Average
<input type="text" value="99"/>
Final Project Average
<input type="text" value="83"/>
<input type="button" value="Calculate"/> <input type="button" value="Reset"/>

Your final grade is: 92.95% which is an A

Example 2: First entry is invalid (above 100)

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
103
Test 2 Score
87
Homework Average
99
Final Project Average
83

Test 1 score is invalid. Please enter a valid number 1-100.

Example 3: First number and last number out of range.

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
103
Test 2 Score
87
Homework Average
99
Final Project Average
-8

Test 1 score is invalid. Please enter a valid number 1-100.
Project score is invalid. Please enter a valid number 1-100.

Example 4: Second number out of range, first and last invalid numbers

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
cat
Test 2 Score
-1
Homework Average
99
Final Project Average
dog

Test 1 score is invalid. Please enter a valid number 1-100.
Test 2 score is invalid. Please enter a valid number 1-100.
Project score is invalid. Please enter a valid number 1-100.

Example 5: All values invalid

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
cat
Test 2 Score
-1
Homework Average
123
Final Project Average
dog
<input type="button" value="Calculate"/> <input type="button" value="Reset"/>

Test 1 score is invalid. Please enter a valid number 1-100.
Test 2 score is invalid. Please enter a valid number 1-100.
Homework score is invalid. Please enter a valid number 1-100.
Project score is invalid. Please enter a valid number 1-100.

Example 6: Missing entries

Enter 4 scores (0-100)

Press "Calculate" to calculate your final grade

Test 1 Score
Test 2 Score
57
Homework Average
Final Project Average
<input type="button" value="Calculate"/> <input type="button" value="Reset"/>

Test 1 score is invalid. Please enter a valid number 1-100.
Homework score is invalid. Please enter a valid number 1-100.
Project score is invalid. Please enter a valid number 1-100.

Your grade will be determined by all of the following:

- Correct JavaScript
- Correct calculations
- Web page style and UX
- Mobile first design
- Don't forget your file comment headings and conforming to the submission guidelines.

Suggestion: Get comfortable with Stackoverflow. Google questions like you would in class, for example, "how do I convert a string to an integer in JavaScript?" Google will return a result for Stack Overflow (it always does) and for W3 Schools (unfortunately). Go to the Stackoverflow link and read the answers and the comments. Learn from other developers.