

# Computer Science 215

## Assignment 02

### Learning objectives:

- Practice JavaScript interaction dialog windows
- Develop simple JavaScript programs that read input, produce output, and do arithmetic.
- Use the JavaScript Math object.

### Instructions:

Complete the following **3** problems. Each problem is worth **25%** of the grade. You need to:

1. Create separate .htm files for each of the following JavaScript programming problems.
2. You can put your JavaScript code in .js file and include it in your .html file or write JavaScript code segment in .html directly using `<script></script>` tag.
3. Create the style sheet for your webpages to make it look good.
4. Follow [CSCI215AssignmentsPolicy.pdf](#) to put document in your program and make sure to include meaningful comments and output messages to receive full credit

**Note:** 3 & 4 count **25%** of the grade.

### Activities:

1. **age.html** (Age in five year)

Ask user for their name using prompt, then display their name to prove that you can recall it. Ask them for their age. Then display their age would be five years from now and what was their age five years ago in the webpage.

## 2. **trangleArea.html** (Area of a triangle)

Your friend Bill has been hired to paint the interior of a new museum in downtown Charleston. The building is modern themed and features a multitude of triangular walls and ceilings that need to be painted. Bill wants to know the square footage of each surface in order to buy the correct amount of paint, so you have agreed to help him by writing a program to calculate the area of each triangular surface. Bill will measure the side lengths of each triangle and enter them into your program, which should calculate and display the corresponding area in square feet.

You recall that the area of any triangle can be found using Heron's Formula as following:

$$p = \frac{a + b + c}{2}, \quad \text{area} = \sqrt{p(p - a)(p - b)(p - c)}$$

(where  $a$ ,  $b$ , and  $c$  represent the lengths of the three sides)

Create a webpage that use above formulas to calculate the area of a single triangle. You can use three input box to receive the length of three sides  $a$ ,  $b$  and  $c$ , and a button to do calculation. Your solution should use the `Math.sqrt` function to compute the square root (there are other ways, but this will give you practice with the `Math` object), and display with **2** decimal point using `toFixed` method.

Test example: input length of three sides (2, 5, 6) should output area of 4.68

**Note:** Not every combination of three side lengths represents a possible triangle. For example, you can't make a triangle with side lengths 1, 2, and 3. In the latter lecture, you will learn how to make a program that rejects invalid inputs, but for now this isn't a concern.

## 3. **changeMaker.html**

Create a webpage that count the change you will get back after making a purchase. Design 2 input box receive the cost and paid, then count the change. For example: the shopping cost is \$2.72 and the customer paid \$5.00

- A. Display the change as a decimal of 2 precision, e.g. \$2.28
- B. Display the change as the smallest number of dollars and coins equal to that amount. your change maker will display something like:

2 dollar(s), 1 quarter(s), 0 dime(s), 0 nicke(s) and 3 pennie(s)