



CS1320

***Creating Modern Web and
Mobile Applications***

Lecture 9:

JavaScript/DOM Lab

Lab Assignment

- Create a **triangle teacher** geared at middle-junior-high school students
 - Teaching tool
- **Input 3 numbers representing the lengths of the sides**
 - Error checking as appropriate
- **Display:**
 - The corresponding 3 angles
 - <https://www.mathsisfun.com/algebra/trig-solving-triangles.html>
 - Area and perimeter of the triangle
 - Whether the triangle is
 - Equilateral, Isosceles, Scalene, or Not a Triangle
 - Acute, Right, or Obtuse
- **Do this all using html and JavaScript (no server)**

Team Organization

- Work in teams of 2-4
- Create a general plan (working together)
 - Sketch the web page and its functionality
 - Before you begin coding
- Define interfaces
 - Ids of input and output fields
- Split into tasks
 - One doing the html/css for the page
 - One doing the JavaScript for triangle computations
 - One doing other JavaScript for the page
- **Optional: draw the triangle**

Objectives

- **Designers**
 - Create an easy-to-use teaching/learning tool
 - Simple and elegant
- **Concentrators**
 - Keep the code simple
 - Beware of floating point computations (might be inexact)
 - How do you tell if a triangle is a right triangle?
 - Check with 0.3, 0.4, 0.5
 - Use Pythagorean theorem rather than looking at angles
 - $x^2 + y^2 \approx z^2$ means right
 - $x^2 + y^2 > z^2$ means acute
 - $x^2 + y^2 < z^2$ means obtuse

Mechanics

- Try to get it working in class
- Lab: [www.cs.brown.edu/courses/cs132/labs/lab2/
lab2.html](http://www.cs.brown.edu/courses/cs132/labs/lab2/lab2.html)

Next Time

- Front End Frameworks
- Prelab 3
- Assignment 1