Web Science

Quiz 1: March 10, 2016

100 points max

Place your name on the top of the document in the header

Enter your answers directly into this document (with the exception of #2 and #3)

All answers should be in be in Your Own Words, and use proper grammar

Make sure your answers use an alternative font and/or color

Save the document as

ITWS4500-S16-Quiz1-*yourname*-quiz1.docx

Place all documents/files including this one in a folder named

ITWS4500-S16-Quiz1-*yourname*-*yourRCSID*

When finished with the quiz, zip your folder and all related files into a file named

ITWS4500-S16-Quiz1-*yourname*-*yourRCSID*.zip

And submit it to LMS

1. **Frameworks** (25 points): (Answer in complete sentences, explain your answers)
   1. (5) What is a Media Query? How is it used? Why do we use them?

A media query gets information from the machine about machine properties such as screen resolution or operating system. We use media queries to change the view of the program to look prettier or allocate resources more effectively on different machines using a single version of the code.

* 1. (5) What is Bootstrap? How is it used? Why is it used?

Bootstrap is a mobile first front end framework. It provides the user with a collection of structures using a 12 column format. Bootstrap is used because you can build a site that works both on mobile and desktop machines, because the user doesn’t have to build everything from scratch, and because as a person hiring developers, if someone knows bootstrap thy have a good idea of how any bootstrap website is organized.

* 1. (5) What is AngularJS? How does it work? Why is it used?

Angular.js is a javascript framework that implements a model view controller structure within an html webapp. Angular is used because it extends the functionality of html to a more traditional computer science language by introducing variables etc. Angular also keeps javascript code more organized by forcing the model view controller model.

* 1. (10) Describe the difference between JavaScript and CSS frameworks. Provide at least 2 examples for each in your answer.

CSS frameworks like Bootstrap, Less and Sass change the way a website looks while JavaScript frameworks like Angular.js and Backbone.js organize your front end javascript code. For example Bootstrap as a css framework implements a grid system which makes the view of a website more organized and comes with an assortment of templates which also changes the look of a website. Javascript frameworks focus more on the function of a webapp. Angular forces the user to use a model view controller model which keeps the javascript code organized. It also uses dependency injection which clearly shows what resources a piece of code needs to work and introduces variables to html. These features keep the front end functionality more organized.

1. **Node.js** : (40 points) Create a webserver in node.js, using express – (NOT express-generator), which will output a simple HTML page with a button labeled ‘Run’ when GET request is received on <http://localhost:3000>. Upon clicking the button, the server should get the current temperature in Spokane, WA and output a sentence that says whether it is Freezing (<10F), Cold (btw 10 and 40), Warm (btw 40 and 70) or Hot (>70) – display the corresponding message in a unique color for each category.

1. (15) Build a package.json file for Q2. If we run it, there should be no errors or warning when we try to install & run your code from #2 above. (You may assume yout application name is *Quiz1Server*)
2. (20) Explain *in detail* what the following code does; (also add comments to the code explaining what each line does)

This code is a server that listens for client messages on port 8000. If one socket receives a message, it writes d, the data given to it to all the other sockets.

// stops the code from running if we can’t find the net module

var net = require('net')

// makes an empty array where socket objects will go

var sockets=[];

var s = net.Server(function(socket) {

// Adds socket to our array of sockets

sockets.push(socket);

// When the socket object receives a message with the keyword // ‘data’, have our socket write data to every other socket // in our array

socket.on('data', function(d) {

for(var i=0; i<sockets.length;i++) {

if (sockets[i]==socket) continue;

sockets[i].write(d);

}

});

// When a socket receives a message with the keyword ‘end’, // delete the socket from the array

socket.on('end', function() {

var i=sockets.indexOf(socket);

sockets.splice(i,1); // or delete sockets[i]

});

});

// Has our server listen on port 8000

s.listen(8000);