Web Science

Quiz 1: March 2, 2017

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-S17-Quiz1-*yourname*-quiz1.docx

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

ITWS4500-S17-Quiz1-*yourname*-*yourRCSID*

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

ITWS4500-S17-Quiz1-*yourname*-*yourRCSID*.zip

And submit it to LMS

1. **Frameworks** (25 points): (Answer in complete sentences, explain your answers)
   1. (5) What is MongoDB? How does it differ from MySQL (aka MariaDB)?

MongoDB is a database that uses a document oriented data model. Unlike MySQL it is a NoSQL style database. This means it uses documents instead of tables and rows, which makes it not a relational database. NoSQL is used more often in big data and real-time web apps.

* 1. (5) What is npm? How is it used? What it used for?

Npm is the node package manager. Its is where Node projects are published. We use it in the command line to keep our projects up to date and makes installation really easy

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

Nvm is the node version manager. You install the package and then you can specify which version of node to run your app on. It is helpful for debugging or testing

* 1. (10) Describe the difference between Front-end and Back-end frameworks. Provide at least 2 examples for each in your answer. (Be clear in your decriptions, ie ‘why is it back/front-end?’)

Front end frameworks help structure the website so you don’t have to set everything up from scratch. And example is bootstrap which is a CSS framework and you can implement its grid system to organize the design of the website

Front end frameworks also include javasript thats client-side to help with fast paced development. Angular is a javascript framework used for faster development with a set of rules

Backend frameworks run server side to avoid user interference and so they can’t see it.backbone.js gives structure to web apps while staying on the backend

Backend frameworks also provide security to sensitive information. So using a backend framework, again like backbone.js, you can store your API keys and other necessities where people can’t see them

1. **Node.js** : (40 points) Create a webserver in node.js, using express – (NOT express-generator), which will serve a simple HTML page with an input filed and a button labeled ‘Run’ when GET request is received on <http://localhost:3000>. Upon entering a zipcode and clicking the button, the page server should get the current temperature for that zipcode and output a sentence that says whether it is Freezing (<=0C), Cold (btw 0 and 10), Warm (btw 11 and 25) or Hot (>25) – display the corresponding message in a unique color for each category. Include a button that allows the user to refresh the page and enter a new zipcode.

1. (15) Build an npm 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 your application name is *Quiz1Server*)
2. (20) Explain *in detail* what the following code does; (also add *stylized* comments to the code explaining what each line does)

var net = require('net')

var sockets=[];

var s = net.Server(function(socket) { //open a server

sockets.push(socket); //push the connected socket into the sockets array

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

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

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

sockets[i].write(d); //put the data retrieved into the correct sockets position in the arrey

}

});

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

var i=sockets.indexOf(socket);

sockets.splice(i,1); //when the socket disconnects, remove them from the array of sockets

});

});

s.listen(8088); //listen for connections on port 8088

The general use of the code above creates a node server on port 8088 using the net package. When a user, or socket, connects it adds them to an array of connected users. When theres data entered by a user, it gets written to their position in the array. When the user disconnects, they are removed from the array