Open questions:

Q **What is a framework? Why use it?**

A: A framework is a tool that provides generic functionality that can be selectively changed by user written code. Other functions:

* A framework is a tool to organize code
* collect libraries
* facilitate debugging with error location and information.

Q: **Name all database association relationships.**

A: Database association is the use of a master table that relates to other tables with a reference key (an id number for an entry in each of the tables associated with the master table)

* One to many relationship
* Many to Many relationship

Q: **What is ORM?**

A: Object Relational Mapping

* It is a technique that allows a user to manipulate data from a database using an object oriented paradigm.
* It converts data between incompatible type systems allowing user to communicate with object using
* Reformats objects to fit in database

Q: **What is data migration?**

A: The process of moving data from one location to another. i.e . pushing data to a database.

Q: **What is a route?**

A: A route is a URL address that renders code linked to it.

Q: **What is the difference between Get and post**

A:

* GET is used to request data from a specified source (files in your program)
* POST is used to send data to a server to create/update a resource (webpage)

Q: **What is Git and why would you use it?**

A: Git is a free widely used version control software that provides security and

Q: **Which Javascript frameworks do I have experience with? What are the strengths of each?**

-Angular

* Developed and maintained by google so there is a lot of support
* Uses HTML as a declarative language
* Does not need other frameworks or plugins to work

-React

* Easy to learn.
* Can reuse components
* One direction data flow

Q: **What happens when a user logs into a website?**

A:

1. User enters credentials
2. The Website validates credentials via database
3. After Authentication, server saves user object in session
4. Saves a cookie with an expiration date
5. System displays website

Q: **What is a class?**

A:

* Extensible program code template for creating objects
* It’s where properties and functions are stored for the application

Q: **What is and object**

A:

* A data structure that contains a combination of variables functions and data structures
* An object is an instance of the class. Objects store data and provides method for accessing and modifying this data

Q: **What is a module? Example?**

A:

* A module is a component of a program that contains one or more routines
* A module is a library

Q: **Give and example of recursion:**

A: for(i=nfactorial.length; i>0; i--)

Nfactorial = i\*(i-1)

Q: **What is unit testing?**

A: Unit testing is testing for the most basic functionality

Q: **What is integration testing?**

A: Integration testing takes modules(that have already been unit tested) and compiles them in an integrated system ready for testing.

Q: **What happens when a user types in a URL?**

A:

1. Browser checks cache;
2. Browser asks OS for server’s IP address
3. OS makes a DNS lookup and replies the IP address to the browser
4. Browser opens a TCP connection to server
5. Browser sends the HTTP response and may close the TCP connection, or reuse it for antoher request
6. Browser receives HTTP response and may close the TCP connection, or reuse it for another request
7. Browser checks if the response is a redirect or a conditional response
8. If cacheable, response is stored in cache
9. Browser decodes response
10. Browser determines what to do with response
11. Browser renders response

Q: **What is IP address?**

A: A unique string of numbers separated by periods that identifies each computer using the internet.

Q: **What is OS?**

A: An operating system is software that allows a user to run other applications on a computing device

Q: **What is DNS?**

A: the Domain name system is the URL

Q: **What is TCP connection?**

A: Transmission control Protocol. It enables two hosts to establish a connection.

Q: **What is string interpolation?**

A: String interpolation is using placeholders in a string and then replacing the placeholder values at a later time.

EX:

name=Austin

age= 30

I am {age} and my name is {name}.

Q: **How do local and instance variables differ?**

A:

* Local variable are visible only in the method or block they are declared.
* Instance variables can be seen by all methods in a class

Q: **What is a foreign key?**

A: A foreign key is a key in a table (join table) that refers to a row in another table

Q**: What is REST?**

A: Representational State Transfer. Uses: GET, PUT, POST, DELETE request

* GET is used to request data from a specified source (files in your program)
* PUT is used to create and update
* POST is used to send data to a server to create/update a resource (webpage)

Q: **What is a partial**

* A feature of .NET that make it possible for developers to extend and enhance auto-generated code.
* Partial classes allow for a single class’s members to be divided among multiple source code files. At compile time these multiple files get combined into a single class as if the class’s members had all been specified in a single file.

Q: **How is .NET structured and why is it a good framework for web apps.**

A:

* Common Language Infrastructure (CLI)

-Provides a neutral language platform for the application. Meaning the functions will be available for any supported language

* Common language runtime (CLR)

-Execution engine of .NET framework offers: memory management, type safety, exception handling. All programs written in .NET are executed by the CLR

* Assemblies

-Compiled CLI code is store in CLI assemblies

* Class Library

-.NET includes a set of standard class libraries, organized in a hierarchy of namespaces. Built in application programming interfaces (API’s) ar part of either System or Microsoft namespaces

* App models

-App models are used to create apps

* C#/CLI
* Easy to learn

Q: **How do you decide what logic should reside in models vs. controllers?**

* Logic should live in the model where the data is
* Controllers control the flow of application execution

Q: **Describe workflow when writing tests and features**

1. Determine simplest desired functionality
2. Before writing code, write a test comparing desired output with input
3. Validate that the test fails
4. Write code that causes the test to pass

Q: **What are the best practices for branch management?**

A:

1. Create master branch for each release
2. Create dev branch from master
3. When working on a new feature branch from release and name it feature/issue\_number
4. Work on feature
5. When ready for testing, merge it into dev branch
6. If accepted merge it into current release branch
7. If not accepted return to step 4.
8. When release is ready, merge to master

Q: **What is polyMorphism?**

A:

* A feature of a programming language that allows routines to use variables of different types at different times.
* Changing the structure of a superset or subset of a class

Q: **How would you parse a JSON string?**

A:

* obj = JSON.parse(json);
* Converts a JSON string into a javascript object

Q: **Describe a class and a an object**

A:

* A class is a template for creating objects and storing variables
* An object is a data structure that provides methods for modifying and accessing data.

Q: **What happens in a GET, POST, and PATCH request?**

A:

* GET: Data is requested from a source i.e. a database
* POST: Used to send data to a server to create/update a resource.
* PATCH: Allows a partial modification of a document

Q: **What is HTTP and why do we use it?**

A:

* HyperText Transfer Protocol. Is the protocol for exchange or transfer of hypertext
* Foundation of data communication for the World Wide Web
* HyperText is a structured text that uses logical links between nodes containing text
* We use it because it is the foundation of data communication

Q: **What is the difference between a private and a public method?**

A:

* A private method cannot be accessed by any other object denoted as so: \_private
* A public can be accessed by any object

Q: **How would you grab an element from the DOM with JQuery?**

A:

* Create a function:

Function myFunction()d{

document.getElementById(“demo”).innerHTML= “Hello world”;

}

Q: **What is DOM?**

A: Document Object Model

Q: **What is a callback function?**

A: A callback function is executed after the current effect is finished.

Ex syntax: $(selector).hide(speed, callback);

Q: **What is an array?**

A: A list of data inside quotes, separated by commas, enclosed by brackets

Ex: var cars = [“Saab”, “Volvo”, “BMW”]

Q: **What is MVC?**

A: Model View Controller

* Model represents the underlying logical structure. No user interface information.
* View is a collection of classes representing elements in the user interface.
* Controller represents the the classes connecting model and view. Communicates between classes in model and view.

Q: **What is a join table in SQL?**

A: A join table combines columns from one or more tables in a relational database. I.e. it takes information from two different tables and relates them based on some shared data.

Q: **Why should you escape user input in SQL statements**

A: To Prevent Injection by user command

Q: **What is SQL injection?**

A:

* Injection is one of the most common web hacking techniques.

-users can execute SQL commands (malicious) in the input box if the value has not been escaped.

Q: **What is object inheritance? What is SuperClass and subclass?**

A:

* Inheritance is a Super-class sub-class relationship where the sub class takes on the properties and methods of the super class.
* A Super class is the base class
* A Sub class is derived from a super class and is a more specific instance

Q: **What is encapsulation?**

A: Encapsulation is binding together data and the functions that manipulate them under one class

Q: **What is abstraction?**

A: Abstraction means displaying only essential information and hiding the unuseful details

Q: **What is object oriented programming?**

A: OOP is programming language model base around objects instead of actions.

Q: **What is floating in CSS?**

A: The float property in CSS specifies the the direction that an element(image, container, etc) will position on a webpage

Q: **What are media queries and how do you use them?**

A:

* A media query is a CSS module that allows a webpage to adapt to different screen sizes i.e. (tablet, phone, moniter, etc)
* Foundation technology for responsive web design

Q: **How do you make images usable for blind people who are using a screen reader?**

A: Use alt text when placing an image to add a description

Q: **What’s the difference between =, ==, ===**

A:

* = is used for assigning values
* == is used to check if 2 things are equal
* === is a used to check if 2 things are equal but is strict and compares not only values but types

Q: **What is the difference between null, undefined and undeclared variable in JavaScript?**

A:

* A variable is undeclared if it does not contain a var keyword. Unacceptable in strict mode in ECMAScript5
* An Undefined variable is a variable that has not been created yet. When you call a variable in a function but do not git it a value it will return undefined or error.
* Null is a variable the is defined to have a null value. Often encountered when a function returns nothing

Q: **What do you do if a site you are working on is down?**

A:

1. Verify that it is actually down
   1. Refresh the page to see if it is actually down
   2. Try another website like google to see if it is an ISP problem
   3. Try visiting your site’s hosting companies website (use the same server)
   4. Try another browser
   5. Try another device
   6. Ping your domain
   7. Perform a traceroute command
   8. Verify with another developer
2. Determine what has gone down.  
   Possible Problems:
   1. A programming error
      1. Check the console for errors.
      2. Check to see if the page has successfully connected to the server by looking at the status bar.
   2. A server is down
      1. Ping the server to see if you get a response