- 1. General Information on web browser
  - Files required for displaying a web page on the browser.
  - Understanding the Document Object Model (DOM)
     (How to access and manipulate single element in the DOM using javascript)
     (Selector Performance)
  - HTTP requests (Get, Post, Put, Delete) and response.
  - Existence of <u>CORS</u>.
  - Overview of the Chrome Development Tools.
    - Modify HTML/CSS
    - Stepping through front end code and adding breakpoints.
    - Using the Network tab.
    - Check cookies from the Application tab.
  - Minification.
- 2. Styles and HTML
  - <u>Difference between block and inline html tags</u>.
  - Familiarity with the CSS box model and CSS units (px, em, rem, % etc)
  - Common CSS properties
    - o Border, Padding, Margin, Display, Position, Float, Text
    - CSS specificity
    - Flexbox, CSS grid(Optional)
  - Common css classes from Bootstrap
    - o Margin, padding css classes.
    - o Bootstrap responsive grid css classes.
    - Bootstrap css classes for input form elements.

#### 3. Javascript

- <u>Basics</u> variables and functions.
- Asynchronous Javascript and event loop.
- Array functions.
- Event bubbling and capturing, Event Delegation.
- Closures
- JSON, json.stringify and json.parse
- Promises
- Async Function Expression and Await and Async
- Timing functions
- Spread and Rest Syntax.

# 4. Angular

- Difference between server rendered and client rendered web application.
- Single page application.
- Why <u>Typescript</u>?
- Decorators in Typescript.
- Generics in Typescript.
- Angular building blocks <u>components</u> and <u>modules</u>.
  - (Build sample project to learn)
  - Understanding Declarations, Imports, Exports, Providers and EntryComponents arrays in a module.
  - o <u>View encapsulation</u> in components.

- <u>Life-cycle hooks</u> of a component.
- Inter component communication @Input and @Output decorators.
- Routing
  - o Defining and navigating routes as well as child routes.
  - Accessing query parameters and angular component reuse strategy.
  - o Route guards.
- Dependency injection
  - o Defining providers useExisting, useValue, and useFactory.
  - <u>Understanding hierarchy of the injectors and lifetime of the service</u>.
- Built in services (HTTP interceptor service, HTTP service)
  - o Get. Post. Put. Delete api calls and error handling.
  - o Adding common header to all the API calls (HTTP Interceptors).
  - Chaining multiple API calls using observables (Handling observables).
- <u>Data-Binding (one way and two way data binding)</u>
- Lazy-Loading modules
- NPM adding third party packages
- Using angular CLI
  - o To generate new angular components, modules, pipes, directives etc
  - To build an angular project for production environment.
     (Different build parameters)
  - o <u>To serve an angular project for development.</u>
- Understanding <u>Template driven</u> and <u>Reactive forms</u>. More focus should be given on Template driven forms.
- Validating Form Input.
  - Using built in validations.
  - Adding custom validations
  - Displaying validation error messages.
- Knowledge about <u>ng-container</u>, <u>ng-template</u>, <u>ng-template-outle</u>t.
- Knowledge about @ViewChild decorator.
- Knowledge of Renderer2 API.
- Built in directives (NgClass, NgStyle, NgFor, NgSwitch and NgIf)
- <u>Knowledge of all the files and folders</u> (package.json, angular.json, tsconfig.json etc) of an angular project.
- Knowledge of linting via tslint or eslint and also make use of prettier.

## 5. Coding Standards

6. Test project at the end of the training.

#### DAY-1

- Add/Update Account
  - Account Type,
  - o Interest Rate.
  - Account Name.
  - Account Number(Autogenerated and uneditable)
  - Date Of Creation(Autogenerated and uneditable)

- Account Balance(uneditable)
- Miscellaneous fields can be added as per the requirement.
- Account Master should have account add/edit/delete function
  - Table/Grid mandatory.
  - Each account can be edited and deleted from the grid.

#### DAY-2

- Create Transaction Page
  - Withdraw / Add Money (Selection should be editable)
  - Account number and Account Name should be pre-populated and uneditable.
- The Transaction button should be present in the Account Master next to the Edit/Delete action buttons.

#### Resources:

- <a href="https://css-tricks.com/">https://css-tricks.com/</a> (Reference for all CSS properties)
- <a href="https://flexboxfroggy.com/">https://flexboxfroggy.com/</a> (Interactive way to learn flexbox)
- <a href="https://cssgridgarden.com/">https://cssgridgarden.com/</a> (Interactive way to learn CSS Grid)
- Angular:Getting Started
- Angular Fundamentals (Course to start with)
- Angular Routing (Lazy Loading, More on Routing Guards)
- Angular Reactive Forms
- Angular Component Communication

### Useful VS Code Extensions

- Angular Language Service
- Angular Schematics
- Auto Import
- Code Spell Checker
- Move TS
- Path Intellisense
- TS Lint
- ES Lint
- Prettier