CMPS 356 – Fall 2022
Web Applications Design and Development

Lab 01
Review of Key JavaScript Skills

Objective

- Practice using Visual Studio Code and some of its extensions
- Review key JavaScript skills and concepts
- Get introduced to building applications using React

Prerequisites

- Install GitHub Desktop from https://desktop.github.com
- Install Visual Studio Code from https://code.visualstudio.com
- Install Node.js from https://nodejs.org
- Install Postman from https://www.postman.com
- Join the classroom invitation to create your personal repository

1. Notable Visual Studio Code Extensions

Take some time to set up Visual Studio Code to your liking. The following extensions are quite useful to install and explore:

- GitLens
- Emmet (built-in support)
- Live Server
- ES7+ React/Redux/React-Native/JS snippets
- Babel JavaScript
- JavaScript (ES6) code snippets
- JavaScript Debugger
- Debugger for Firefox
- CSS Peek
- CSS Intellisense
- Auto Close Tag
- Auto Rename Tag
- REST Client
- ESLint
- Prettier
- Path Intellisense
- Live Share, Live Share Audio
- Better Comments
- Markdown All in One
- PolaCode, Code Snap
- TODO Highlight
- NextJS Developer Extensions Pack
- Tomorrow and Tomorrow Night Theme Kit
- VS Code Icons

2. JavaScript Recap

Implement the following tasks:

- Reverse an array using reduce and the spread operator.
- Tally the elements (count the occurrences of every element) of an array using reduce.
- Create an application that fetches the current weather conditions in Doha using a publicly available API, e.g., https://open-meteo.com, and displays it to the end-user. Use async/await for your asynchronous calls.
- Add a button to your application that allows the end-user to refresh the information that is displayed.

- Create an Express application that fetches the countries from https://restcountries.com/v3.1/all and returns an array of countries with their common name and country code only. Test your API using Postman.
- Create an application that uses your API to fetch and save the list of countries locally such that they are fetched only when they have not been stored locally already. Display the list of countries using a table to the end-user.

3. Introduction to React

Follow the tutorial at https://reactjs.org to get yourself familiarized with the library then use the create-react-app utility from https://github.com/facebook/create-react-app to create a sample application and test it locally.