CMPE 273 – Enterprise Distributed Systems

Refresher Assignment

Topics: Basics of JavaScript, HTML5, AWS, Docker

Due Date: 10th September 2021 **Max Marks: 25**

Instructions:

- Come up with a programming question for each of the question topics given below, you can create a single question to cover multiple features, please limit the number of questions to minimum.
- The programming question should have a problem statement for which you provide a solution using code.
- Problem statement for each question must be unique.
- Paste the code solution for each question.
- Screenshots must be provided for the output of each question.

Questions:

I. JavaScript (ES6)

Please use strict mode and make full use of arrow functions.

1. Use of arrow functions, split, slice, includes, typeof, JSON.stringify, JSON.parse in your program.
2. Destructuring object and array, spread and rest operator, closures.
3. Use of require and exports, class static method, regular expressions and default arguments
4. Object and Classes with Object.assign demonstrating inheritance using subclasses in JavaScript with method overriding
5. Make external API call, you can use npm package like axios
6. Demonstrate the difference between:
    a. call, apply, bind
    b. var, let, const
    c. callbacks, promises, async and await

HTML5:

1. Demonstrate LocalStorage and SessionStorage using different HTML input types along with input validations (Make use of different input validations in HTML5 like patterns, autofocus, required, email etc. Describe all the concepts used in your Introduction to Topic section).
2. Geolocation and Events

DEPLOYMENT:

1. **Simple Web Application:** Build a new application using the above HTML and JavaScript concepts. (For example a login page, blog, to-do list , dictionary etc.)
2. **Docker**: Create a docker image of the above application and run the application using docker in your local.
3. **AWS ECS**: Create a AWS ECS service (only one task) running the above application using the docker image created above.

Report Format:

Your report must contain the following for each question.

1. Introduction to the topic (Definition in your own words)
2. Problem Statement (Scenario)
3. Code Snippet (Copy paste the code - Not screenshot)
4. Screenshot of output (Terminal, HTML Web pages, AWS web console etc)
5. Upload a short **2 minute** video of the app and add it as a clickable link to as the first line of your report, make sure the video is visible publicly.

Grading Criteria:

JavaScript:	6 Q X 2 points = 12 points
HTML:	2 Q X 2 points = 4 points
Deployment:	3 Q X 3 points = 9 points

You will get full marks for each question only if the report format is followed and all the questions are unique.

Note:

- Assignment reports must be submitted on Canvas as a single **PDF** file.
- Please do not wait until the last minute on the due date, as Canvas servers lag or delays may result in late submissions.
- This an individual assignment. Teamwork is not allowed.
- Do not search for the problem statements online or copy others' work (from online tutorials). Come up with your own problem statement.
- You can use editors like Visual Studio Code, WebStorm or Atom.