IS213 Enterprise Solution Development  
Pre-lab : Understanding the basic building blocks for Web User Interfaces

horizontal line

Pre-requisites:

* Visual Studio Code

Necessary components to be downloaded to your local machine:

· [Lab package](https://drive.google.com/drive/folders/1BMOvhj8rF057CDSMU76ORPiDKv1Y25nU?usp=sharing) for some of files required in this lab

Points to Note:

· This is an individual exercise.

Objective:

To understand the individual building blocks needed for creating the user interface necessary in an Enterprise solution that invokes microservices.

**Note:**

* Must complete the learning materials before the start of your class next week.
* Must complete the exercises shown in the videos. Some of the links are references as indicated, only use them on a per need basis (e.g. doing the exercise for reference, attempting the quiz for reference).
* **Must complete the UI quiz on eLearn** to get all correct answers; it allows unlimited attempts.

## Introduction:

These sets of learning are organized by topics, where you will view some video(s), and through some hands on, to aid you in your learning. It is best to approach them in the order given, as some of the later topics depend on the earlier ones.

The learning materials assume you know the basic structure of HTML files, such as: <html>, <head>, <body>, and some frequently appearing HTML tags (a.k.a. elements), such as <link>, <script>, <h1>, <p>, <br>, <div>, <form>, <input>, <button>, <table>, <tr>, <td>. If you need a refresher, may take a look at the W3School HTML tutorial: <https://www.w3schools.com/html/default.asp>

## CSS Basics

[A simple 5 minutes video on CSS](https://www.youtube.com/watch?v=3T4BsrBISnI).

[Tutorial on CSS Setup & Selector](https://www.codecademy.com/courses/learn-css/lessons/css-setup-selectors/exercises/review-selectors) (~15mins)  
You only need to complete “Setup and Syntax” but feel free to complete all sections, it does not take much more time.

## Bootstrap

Watch the [first video](https://youtu.be/O_9u1P5YjVc) in this [youtube playlist](https://youtube.com/playlist?list=PL4cUxeGkcC9joIM91nLzd_qaH_AimmdAR) (~7 minutes).

For reference only: <https://getbootstrap.com/> Need not read the whole site

## Javascript

Watch [video](https://mediacast.smu.edu.sg/media/Javascript+Basics/0_jre10864/151808722) (log in with an SMU account) (~11 minutes).

For reference only to do the quiz if required. Need not ‘read’ the site:

| References:  [DOM Tree](https://javascript.info/dom-nodes)[*Overview of the APIs for DOM*](https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model) [API for Document class, the most commonly used](https://developer.mozilla.org/en-US/docs/Web/API/Document) [document.getElementById](https://developer.mozilla.org/en-US/docs/Web/API/Document/getElementById)  Helpful Extras [Optional] : [Javascript Tutorial](https://www.w3schools.com/js/default.asp) [Comprehensive Javascript Guide](https://javascript.info/) |
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## jQuery

Watch [video](https://mediacast.smu.edu.sg/media/jQuery+Basics/0_pni6m3pt/151808722) (log in with an SMU account) (~13 minutes).

The jQuery syntax is tailor-made for selecting HTML elements and performing some action on the element(s).

Basic syntax is: $(selector).action()

A $ sign to define/access jQuery

A (selector) to "query (or find)" HTML elements

A jQuery action() to be performed on the element(s)

For reference only to do the quiz if required. Need not ‘read’ the site:

| *API:* [*w3schools jQuery Tutorial*](https://www.w3schools.com/jquery/default.asp) [jQuery official website for technical details of each API](https://jquery.com/) |
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## Javascript Fetch

3 Short Videos (log in with an SMU account):

1. [Introduction & Overview](https://mediacast.smu.edu.sg/media/Fetch+API+-+Introduction+%26+Overview/0_frb0pg7q) (2mins)
2. [Student Microservice](https://mediacast.smu.edu.sg/media/Fetch+API+-+Student+Microservice+%5BOptional%5D/0_g3k7hcth) [Optional], (5mins)  
   Watch Video #1 first, before reading this part:  
   You can skip this video if you feel that you are good with coding microservice already using Python. If you skip this, you may write a simple Student microservice (student.py) to provide an operation, in order to work with the next video 3:  
   GET /student : get all students  
    Return : all students in JSON format  
    E.g. { “Id” : 1, “Name” : “John”, “Gender” : “Male” }
3. [Creating fetch.html for making the call](https://mediacast.smu.edu.sg/media/0_3n5ay05p) (18mins)

The Fetch API has a lot of variations in the way you can use it, thus the different resources might show you different variations. Thus it is **normal**, if you see variations, just use the suggested approach.

For reference only to do the exercise in video and/or quiz. Need not read the whole site:

| *API:* [*Good Fetch API resource*](https://javascript.info/fetch) [*Official Fetch API website*](https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API/Using_Fetch)  [Optional] [Cross-Origin Resource Sharing](https://developer.mozilla.org/en-US/docs/Web/HTTP/CORS) (CORS), if you would like more information. [Optional] [What is a Promise](https://javascript.info/promise-basics?) (as mentioned in the video) |
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