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Note:

- There will be a small test after completion of each module
- Each module has to be completed in the time given by the instructor.
- After completion of 3 modules, there will be a task related to those 3 modules.

1. HTML

HTML is the standard markup language for creating Web pages.

- HTML stands for HyperText Markup Language, it is also a scripting language.
- HTML describes the structure of Web pages using markups.
- HTML elements are the building blocks of HTML pages.
- HTML elements are represented by tags.
- HTML tags label pieces of content such as "heading", "paragraph", "table"
- Browsers do not display the HTML tags but use them to render the content of the page.

Important Topics:

- HTML 5 vs HTML 4
- Difference Between Attributes and Tags
- HTML Structure and formatting
- Span vs Div tag.
- Paired vs Singular tags
- Meta tags
- Internal and external linking
- Filepath
- Html layout Elements
- Html and X-Html

Tutorial Link:

- https://www.w3schools.com/html/default.asp
- https://www.youtube.com/watch?v=BsDoLVMnmZs

Projects For HTML

- Create a simple web page using HTML & embedded a youtube video in it.
- Create a website using login and registration forms with internal and external linking.
- Play audio and video documents on a web page.

2. CSS

CSS stands for Cascading StyleSheets

- CSS describes how HTML elements are to be displayed on a screen, paper, or on other media using styling.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once.
- There are mainly 3 types of styling: Internal, Inline and External.
- External stylesheets are stored in CSS files.

Important Topics:

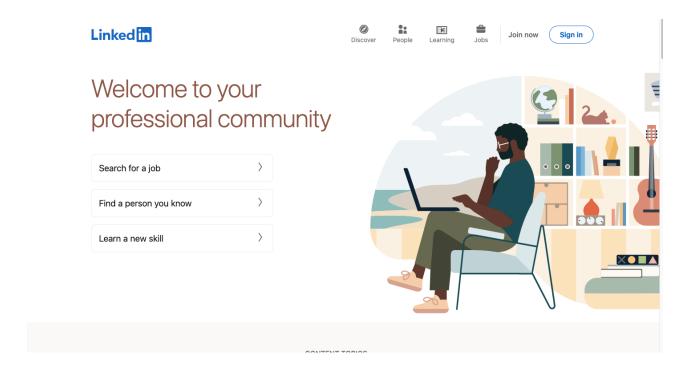
- CSS Box Modal
- What is the difference between inline, internal and external CSS and how we can apply of all types in a single web page.
- What are selectors (id, class, tag and others)?
- Uses of MAX and MIN.
- Difference between Margin and Padding.
- Linear Gradients Vs Radial Gradients.
- Understand child and parent sections.
- Mediaqueries, Transformation & Transition.

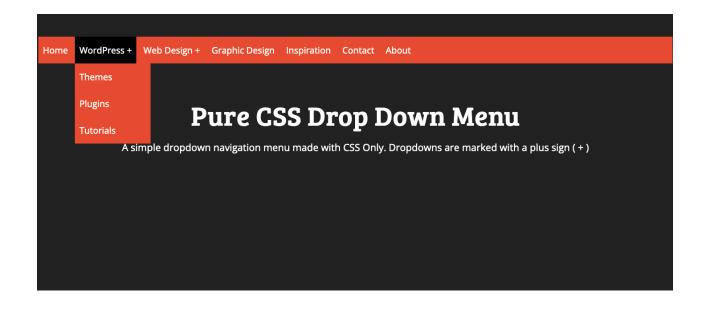
Tutorial Link:

- https://www.w3schools.com/w3css/defaulT.asp
- https://www.youtube.com/watch?v=Edsxf_NBFrw

Projects For CSS

- Linked In Login page. (See image below for reference)
- Dropdown menu using CSS Only. (See image below for reference).





3. Bootstrap

<u>Using Bootstrap you can build fast, responsive sites.</u>

- It is a Faster and Easier way for Web-Development.
- Bootstrap is the most popular CSS framework for developing responsive and mobile-first websites.
- Bootstrap 5 is the newest version of Bootstrap.
- The container class is one of the most important Bootstrap classes.
- External stylesheets are stored in CSS files.
- It provides margins, padding, alignments, and more, to HTML elements.

Important Topics:

- Responsive Systems (Flex Systems and Grid Systems).
- Responsive Breakpoints (extra small, small, medium, large, or extra-large)
- Bootstrap Components.
- Bootstrap Utilities.
- Display Utilities.

Tutorial Link:

- https://www.w3schools.com/bootstrap5/index.php
- https://www.youtube.com/watch?v=vpAJos5S2t0

Projects For CSS

- Landing (Single) page Website.
- Personal Portfolio.

4. JavaScript

JavaScript is the programming language of the Web.

- JavaScript is a lightweight, interpreted programming language.
- It is designed for creating network-centric applications.
- It is complementary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML.
- JavaScript is already running in your browser on your computer, on your tablet, and on your smartphone.
- So, JavaScript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything else.

Important Topics:

- What is the difference between internal and external JS and how can we apply it.
- Dev Tool Debugging
- Understanding operators, loop, string, datatypes and functions.
- JS objects, events and common mistakes in JS.
- Difference between .value and .Innerhtml.
- Understanding DOM (Documents objectmodal)
- Understanding BOM (Browser Object Modal).
- How to get and pass data from HTML form and HTML tags.
- Strings methods and array methods

- https://www.w3schools.com/js/default.asp
- https://www.youtube.com/watch?v=hKB-YGF14SY

Projects For JavaScript

- To display a digital clock and Analog Clock at the div space using JavaScript.
- To create an HTML page to change the page background colour for every click of a button using javascript.
- JavaScript program to design a calculator program accepting 2 numbers and a choice for Add, Subtraction, Product and Division.
 Click on each button to perform the respective task and display the result.
- JavaScript program to navigate Array of employee's records (ID, Name, Address, Mobile No.) and binding it to textboxes and giving options for the users to navigate between records such as First, Next, Previous and Last records.
- Create a page with a label and a button. Button name is "View Offers". If the counter is the first time, display "Congratulation User" and if the counter is 3, display "Discount offer of 20% on all products" and if the counter is 5, display the message "Hurray!!! Mega offer of 50% on all products".
- Create a JavaScript program for a student registration form that includes First name, Last name, Address, Email, password, retype the password, and Phone validating inputs for mandatory inputs with the following constraints:

Mandatory: First name, email, password, retype password

5. JQuery

<u>jQuery is a light weight, "write less, do more", JavaScript library</u>

- The purpose of jQuery is to make it much easier to use JavaScript on your website.
- jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish and wraps them into methods that you can call with a single line of code.
- jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation.
- The jQuery library contains the following features:
 - HTML/DOM manipulation
 - CSS manipulation
 - HTML event methods
 - Effects and animations
 - Utilities

Important Topics:

- What is the difference between JS and jquery?
- What is a library?
- What is a Document Ready Event and what is the shortest method of it?
- What are the JQuery Events and how we can call them?
- What is the difference between .html () and .Val()
- How to use for each loop jquery
- JQuery common mistakes, this keyword, all types of events.
- Strings methods and array methods.
- Understanding DOM (Documents object modal).

- https://www.w3schools.com/jquery/default.asp
- https://www.youtube.com/watch?v=YFlx1C8XwR0

Projects For jQuery

- Create a calculator UsingJQuery.
- Form Validation using JQuery or validate (jquery form validation).
- JQuery program to design a calculator program accepting 2 numbers and a choice for Add, Subtraction, Product and Division.
 Click on each button to perform the respective task and display the result.
- Create a Quiz using jquery.
- Create a Slider using jquery.
- Create a ColorPicker.
- Create an array in JS and pass all values in Dom Using for each loop.



6. Advance JavaScript

Important Topics:

- Scope
- Advanced Control flow
- Advanced concepts of functions (Arrow Functions)
- Advanced concepts of arrays and objects
- Learn about class & inheritance.
- Learn about synchronous and asynchronous programming (asynchronous operations: promises, async/await syntax, fetch)
- Learn about JS runtime environment
- try / catch / throw
- maps and sets
- DOM API, canvas API, ... all the browser APIs

- https://www.youtube.com/playlist?list=PLC3y8rFHvwhIoV5mE9Vu6Nm-nap8EcjV
- https://www.youtube.com/playlist?
 list=PLwGdqUZWnOp19VX-DM4oHtmWhDfWblFh-



7. React JS

React is a free and open-source front-end JavaScript library for building user interfaces based on UI components.

- React allows developers to create large web applications that can change data, without reloading the page.
- The main purpose of React is to be fast, scalable, and simple. It works only on user interfaces in the application.
- j It can be used with a combination of other JavaScript libraries or frameworks, such as Angular JS in MVC.
- React.js properties include the following:
 - React.js is declarative
 - React.js is simple, fast & easy-to-learn.
 - React.js is component-based
 - React.js supports server-side
 - React.js is extensive

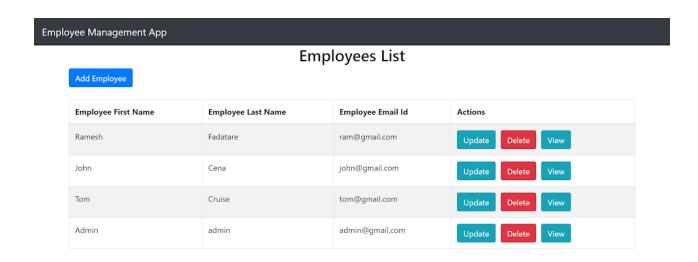
Important Topics:

- ReactJS Introduction to JSX
- ReactJS Rendering Elements
- ReactJS Components.
- ReactJS Props.
- ReactJS State in React
- ReactJS Lifecycle of Components
- ReactJS Conditional Rendering
- Strings methods and array methods.
- ReactJS Lists ,keys and forms.

- https://www.w3schools.com/REACT/DEFAULT.ASP
- https://www.youtube.com/watch?v=RGKi6LSPDLU
- https://www.youtube.com/playlist?
 list=PLuoW_9lll9agx66oZnT6lyhcMlbUMNMdt
- https://www.youtube.com/playlist?
 list=PLwGdqUZWnOp3aROg4wypcRhZqJG3ajZWJ

Projects For React JS

- Create a React JS App.
- Create a React JS App and use props, state and routing.
- Create React Native App to implement styling.



• For the second project, style the page the same as the video which is given in the link below.

https://drive.google.com/drive/folders/1rLrAiAPeWkb28AOqMguwQBeGl Sd2Yi_N?usp=sharing

Main Project for React Native

Create a React JS App to implement images and basic CRUD operation using API in the first project

8. GIT

GIT is a Version Control System (VCS).

- Version Control System (VCS) is software that helps software developers to work together and maintain a complete history of their work.
- Listed below are the functions of a VCS:
 - Allows many developers to work simultaneously on a single project.
 - Does not allow overwriting each other's changes.
 - Maintains a history of every version.
- Following are the types of VCS:
 - Centralized version control system (CVCS).
 - Distributed/Decentralized version control system (DVCS).

Tutorial Link:

- https://www.w3schools.com/git/
- https://www.youtube.com/watch?v=gwWKnnCMQ5c

Work Task:

- Install GIT and set path.
- Create a private repository in GitLab / Github.
- Create a project in your local environment and connect with your repository.
- Commit your repository.
- Apply push and pull commands.
- Add members into your repository.