Assignment 1 - Inception

- **What is Emmet ?**
- It allows you to write HTML and CSS code using abbreviations and then expand them into complete code snippets. This can greatly speed up the process of writing repetitive code and reduce the chances of making errors.

- It provides various shortcuts and abbreviations that help you generate complex HTML and CSS structures quickly. For example, you can type an abbreviation like **div>ul>li*2** and then use the Emmet expansion feature to automatically generate the following code:

```
<div>
    <ul>
        <li></li>
        <li></li>
    </ul>
</div>
```

- **Difference between a Library and a Framework ?**

Library:

- Library is a pre-written code which is written to provide a specific functionality. Libraries are more specific towards the purpose. Libraries are used to provide a specific functionality or solve some particular problems. React is a library and there are other libraries such as numpy, jQuery (JavaScript library for DOM manipulation).

Framework:

- Framework is a structured and comprehensive tool which provides a foundation for building applications.It defines a complete architecture and provides a set of guidelines, patterns and conventions to follow.
- It dictates structures and requires developers to work within prescribed patterns. Frameworks usually include libraries as part of their package to handle various tasks. They provide a more holistic solution for building a particular type of application. Examples of frameworks include Ruby on Rails (framework for building web applications), Django (Python framework for web applications), and Angular (JavaScript framework for building single-page applications).

In summary, a library provides specific functions or tools that developers can use to solve particular problems or tasks, while a framework provides a more structured and comprehensive environment that defines the overall architecture of an application and guides developers in building it.

- **What is CDN ? Why do we use it ?**
- CDN stands for Content Delivery Network. The purpose of CDN is o deliver digital content like web pages, images, scripts, etc. We have used CDN to inject React into our application. Here, the React is hosted in CDN and we have CDN script link using which we can directly used React in our app instead of adding React dependency.

- **Why is React known as React ?**
- React was named "React" because it reflects the library's core purpose: efficiently reacting to changes in data and updating the user interface in response to those changes.

- **What is cross-origin in the script tag ?**
- The crossorigin attribute in the <script> tag is used to specify that a script can be loaded from a different domain or origin while adhering to security measures. It helps in controlled cross-origin loading of scripts, allowing web pages to fetch external scripts for enhanced functionality without compromising security.

- **What is the difference between React and ReactDOM ?**
- React Represents the core library for building user interfaces and managing component logic. It includes features for creating components, managing state, handling props, and rendering virtual DOM elements. Whereas ReactDOM focus specifically on integration of React with actual DOM. It provides methods for rendering React components into Real DOM and updating them efficiently and handling events**.**
- In short, React is the main library for building components and managing application logic, while ReactDOM is a separate package that deals with rendering those React components into the browser's DOM and managing interactions with the real DOM.

- **What is difference between react.development.js and react.production.js files via CDN ?**
- The main difference between react.development.js and react.production.js is that react.development is intended for development environments and recet.production is optimized for production environment. it's recommended to use the react.production.js version to ensure better performance and a smaller bundle size. During development, the react.development.js version is beneficial for debugging and identifying issues in the code.

- **What are async and defer ?**
    - Async and differ are boolean attributes which are used along with script tags to load the external scripts efficiently into our webpage.
    - When we load a webpage, there are two main things happening in our browser. One is HTML parsing and the other is loading of the script.
    - The loading of script contains two parts
        1. Fetching the script from network
        2. Executing the script

Example:

- <script src= “ “ />

→ When parsing HTML, when browser encounters the src in script task, it stops parsing and get the script from network.

→ When fetching and executing the script, the HTML parsing is stopped.

1. <script async src= “” />

   → While using async, the HTML parsing doesn’t stop and the script from network is fetched asynchronously (the fetching is done while HTML parsing is going on).
   → Now when the fetching is done, the HTML parser stops till the script is executed. Once the script is executed the HTML parsing resumes.

   <script defer src= “” />

   → In case of defer, the HTML parsing goes on and while it fetching the script. The **execution of the script is only done once the whole HTML parsing is completed**.

→ The important thing is that the a**sync attribute doesn’t guarantee the order of the execution** of the script. **But defer does.**
→ In case of interdependent scripts, async shouldn’t be used.
→ In case of external scripts like google analytics, etc., it is not advisable to use async.
→ defer is best to be used in most of the scenarios.