Namaste React 📄 **Namaste React (Ep. 01 Inception - HW)**

Chapter 01 (Inception)

What is Emmet?

Definition:
Emmet is a plugin for text editors that helps in rapidly writing and editing HTML and CSS code.

Functionality:
It uses abbreviations and shortcuts to speed up the coding process.

Built-in into VS code, by default

Difference between a Library and Framework?

1. Control Flow

   Library: You call the library where and when it is needed.
   Framework: The framework calls you (Inversion of Control).

2. Integration

   Library: Used as a tool within your code.
   Framework: The application is built within the framework.

3. Purpose

   Library: Specific functionalities or utilities (e.g., date handling, string manipulation).
   Framework: Entire application architecture and lifecycle management.

4. Flexibility

   Library: More flexible, used only where needed.
   Framework: Less flexible, dictates design and architecture.

5. Learning Curve

   Library: Generally easier and more focused.
   Framework: Broader and requires understanding the entire system.

Library: Like choosing a book from a library to help with a specific task.
Framework: Like building a house using a specific architectural plan.

What is CDN and Why to use it ?
https://www.akamai.com/glossary/what-is-a-cdn

Definition:
Group of geographically distributed servers that speed up the delivery of web content by caching content closer to the user.

Why is React known as React ?

Named "React" because of its core mechanism of reacting to state changes and updating the UI accordingly

Core Concept of React

- One directional data flow: data flows from top to bottom.

- Declarative Views: You describe UI, and React takes care of updating it when the application state changes.

- Component-Based Architecture: Each UI piece is encapsulated in reusable components that manage their state.

What is crossorigin in script tag ?

Attribute in the <script> tag

Specify how cross-origin requests should be handled when fetching resources (JavaScript libraries or stylesheet) from a different domain.

2 values: "anonymous" and "use-credentials"

https://chat.openai.com/c/e3cc7471-6b15-4f59-b785-26eff7d3d832

The Values of `crossorigin`

1. `anonymous`:
   - **Meaning**: This setting means that the request for the resource will be made without any credentials (like cookies, client SSL certificates, or HTTP authentication).
   - **Use Case**: Use this when you want to fetch a resource from another domain, but don't need user credentials for that.
   - **Server Response Requirement**: The server hosting the resource must include a CORS header (`Access-Control-Allow-Origin`). If this header is missing or incorrect, the browser will reject the request for security reasons.
2. `use-credentials`:
   - **Meaning**: This setting will include credentials with the request.
   - **Use Case**: Use this when the resource you are fetching requires user credentials. It's common when you're accessing resources that are restricted or personalized for the user.
   - **Server Response Requirement**: In this case, the server must include not only the `Access-Control-Allow-Origin` header but also `Access-Control-Allow-Credentials: true`. If these headers are not correctly set, the browser will reject the request.

Why is it used?

1. **Security**: When fetching scripts from external sources, there are potential security risks. `crossorigin` ensures that the content is fetched in a secure manner respecting the CORS (Cross-Origin Resource Sharing) policy.
2. **Error Handling**: With `crossorigin`, JavaScript gets more detailed error information from cross-origin scripts. Without it, for security reasons, scripts loaded from different origins are not allowed to access much detail about errors.
3. **CORS Policy Compliance**: It's a part of implementing the CORS policy, which is a standard for securely fetching resources from a different domain.

How does it help in fetching content from CDNs?

* **Efficiency and Performance**: CDNs host resources like JavaScript libraries that are commonly used across many websites. Using `crossorigin` allows these resources to be safely and efficiently fetched and used.
* **Cache Utilization**: When multiple websites fetch the same resource with the same `crossorigin` settings, the browser can cache it and reuse it, reducing load times.
* **CORS Handling**: If the CDN resource has CORS headers set, `crossorigin` ensures that these resources are used in accordance with these settings, thus making the content delivery and integration secure and consistent.

Difference between React and ReactDOM

1. React (Core Library)

   * **Scope**: Contains the functionality for creating React elements and components.
   * **Independent of web**: Can be used beyond web browsers (e.g., React Native for mobile apps).

2. ReactDOM (DOM-Specific Library)

   * **Scope**: Interacting with the DOM (specific to Web browsers).
   * **Web-specific** : Contains methods for rendering and manipulating DOM.

Difference between react.development.js and react.production.js files via CDN?

2 different versions of the React library

development version : for development and debugging
production version : for production environments.

Size:
development version > production version.
Reason: development version contains additional code, comments, and debugging features that are not needed in production.

Performance:
production version > development version.
Reason: Production version has been minified and has had unnecessary code removed.

Use the development version when you are developing your React application and the production version when you are deploying your application to production.

▶ async vs defer attributes in Javascript | Ola Interview Question ▶

async and defer are boolean attributes in script tag

1. Normal case

   Browser will download the script and execute the script before it moves to the next lines of code in your HTML. Blocks HTML page rendering.
   This impacts the loading speed of your web page.

2. async

   Script downloads immediately and does not block HTML page's rendering.
   Script execution does not wait for the rest of the DOM to complete loading.

3. defer

   Script downloads immediately. script execution is deferred until entire document contents have been loaded completely.