

What are the challenges in modern web development?

- Unified UX
- Fluid UX
- Loosely coupled and Extensible
- Simplified deployment

What is Solution?

- SPA [Single Page Application]

Can we build SPA using JavaScript and jQuery?

- Yes
- Lot of DOM manipulations
- Lot of references
- Lot of coding
- Heavy UI
- Slow in rendering
- Navigation Issues

Recommended

- Angular
- React
- Vue
- Knockout
- Ember
- BackBone

What is difference between Angular and React?

- Angular is a Framework
 - Framework can build application and can control the application flow.
 - Angular Deals with Framework like
 - **MVC (Model View Control)**
 - **MVVM (Model-View View-Model)**
 - **MVP (Model-View- Presenter)**
- React is a library
 - Library can build application but can't control the application flow.
 - It is to deal with only **View [User Interface]**

When to use Angular and React?

React

- If you already have an application on your server side with all layers ready
 - UI
 - Business Layer
 - Database Layer
- If you want to make your server-side UI more effective client side [SPA] then better use “**React**”
- React uses Virtual DOM

Angular

- If you have a server-side application built with all layers
- If you want to create an application for client-side environment
- Client Application communicates with Server Application [**Distributed Application**]

- Better use “Angular”
- Angular uses DOM

What is React?

- JavaScript Library
- Building User Interfaces
- It deals with “View” in MVC like architecture

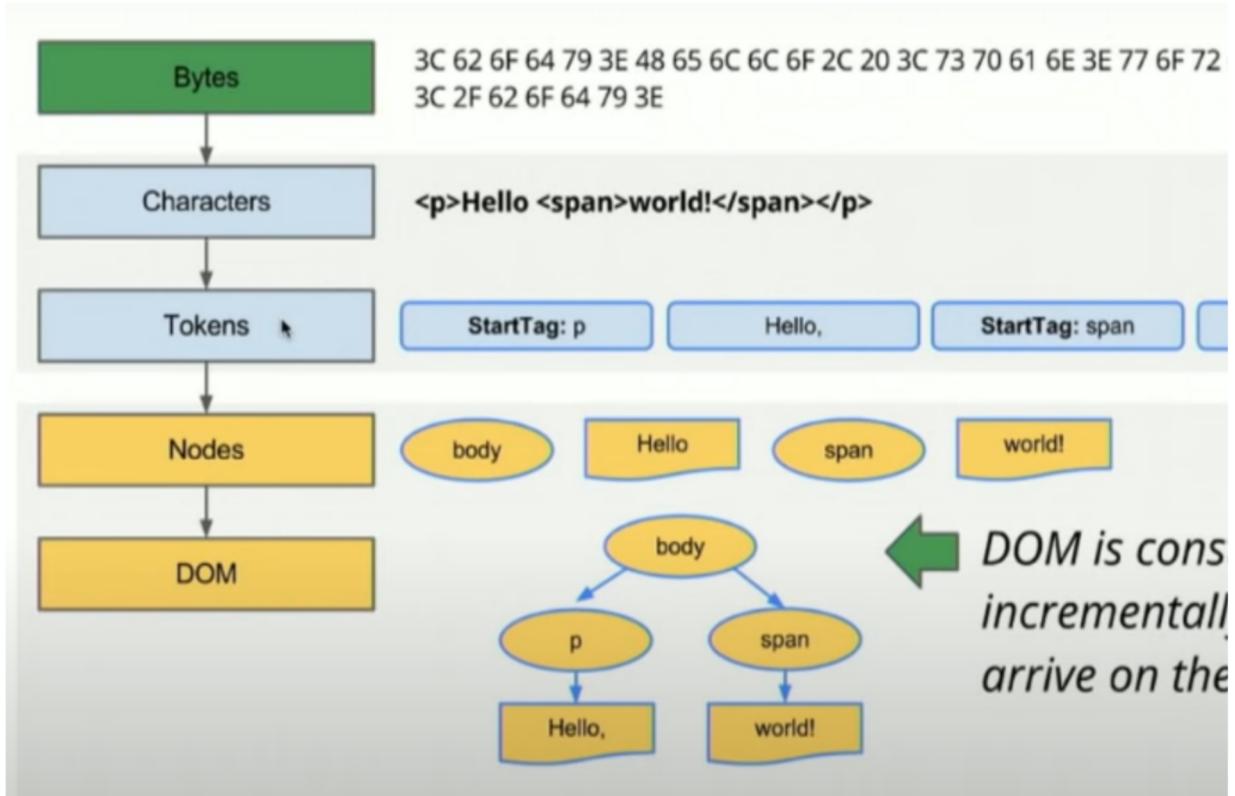
Other JavaScript Libraries

- jQuery
- Vue
- Redux
- RxJS etc..

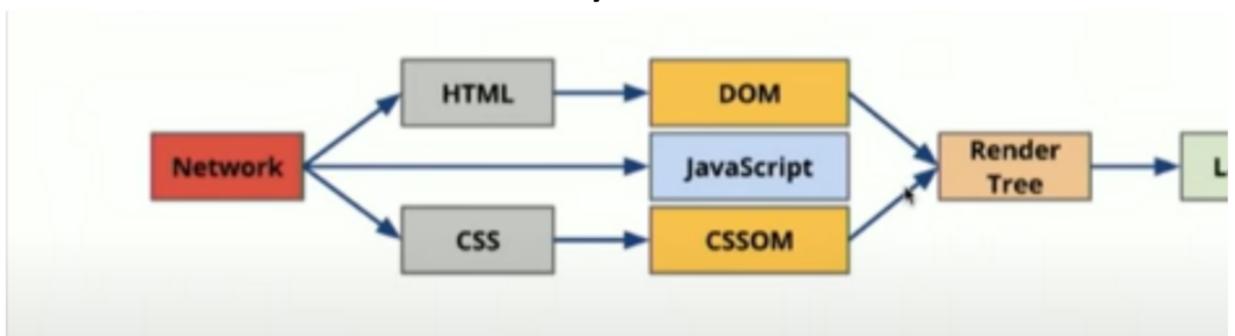
What is DOM?

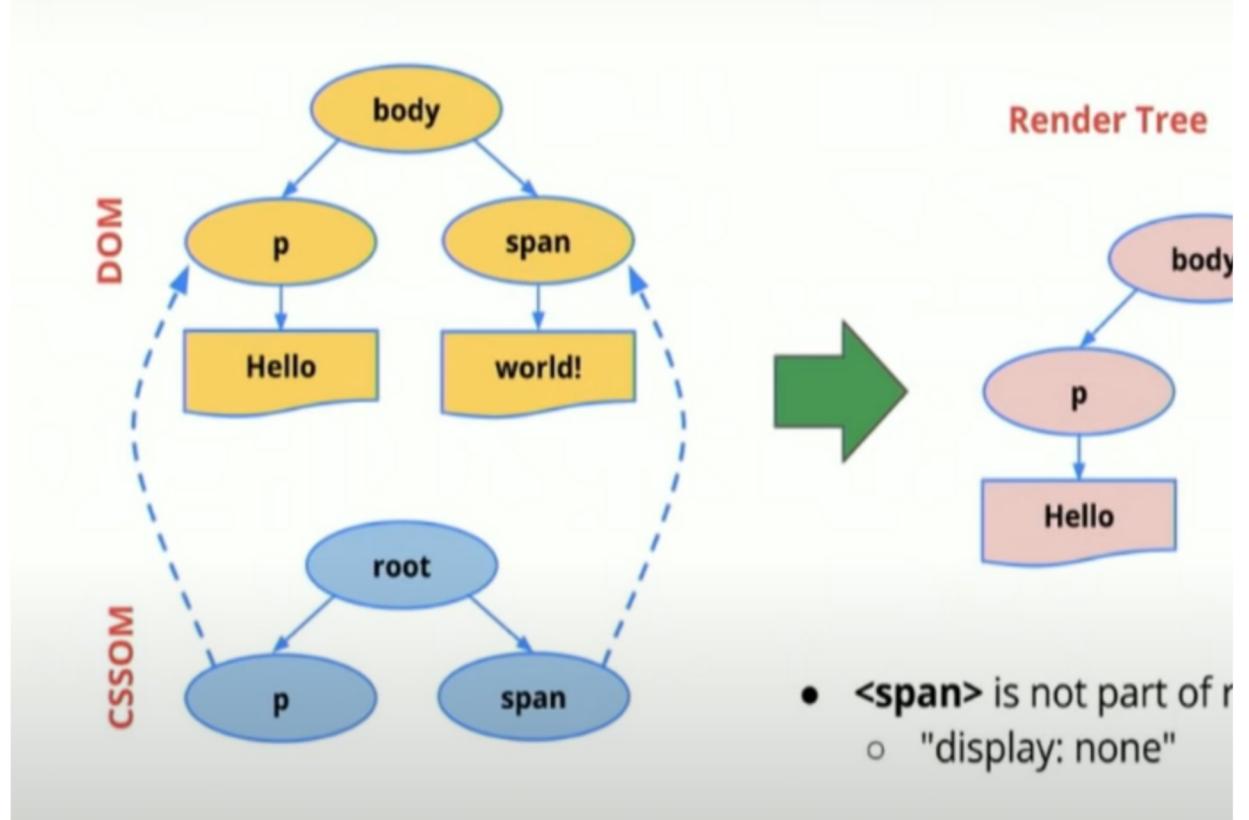
- DOM [Document Object Model]

- HTML Presents elements in a hierarchy called DOM.
- HTML Parsing



- Browser uses DOM and CSSDOM
- DOM is related to HTML elements
- CSSDOM is related to styles for elements.





What is shadow DOM?

- Shadow DOM is used for **Web Components**.
- Web Component is a component for HTML, with presentation, styles and functionality.
 - UI with HTML
 - Styles with CSS
 - Functionality with JavaScript

What is Virtual DOM?

- It is copy of actual DOM in browser memory.
- Client-Side DOM manipulations are handled by various technologies directly on the Actual DOM.
- It will take some time to respond with the changes made and paint again on to browser.
- Virtual DOM will update and paint the details immediately to application after that it really updates the DOM.
- So user can view the rendered tree more faster than actual DOM.
- It makes “React” faster in rendering output.

What are the Features of React?

- Component Based

- You can re-use the components
 - Virtual DOM
 - Supports Modular Approach
 - Only the library required for specific situation will be loaded.
 - Application specific library.
 - Async approach
 - Faster in rendering
 - Reduces compatibility issues.
 - It supports various 3rd party integrations, which can run on various environments.
 - Developer has wide range of choices to do any specific task.
- Ex: To Connect and Access data from **API**
- **jQuery Ajax**
 - **fetch**
 - **axios**
 - **whatwgfetch**
 - **XmlHttpRequestObject**
- Easy to learn to use.

What are the issues with React?

- Pace of development is very fast.
 - First Version 2013
 - Latest Version March 2021 - **17.0**
- Poor documentation
- SEO Issues
 - Google Crawlers need “Indexing” of page.
 - They can’t Index a page which is dynamically changing in UI.
- One Way Binding
- Lot of GAP’s
- Lot of 3rd party integrations.

Setup Environment for React

