

React is a Library.React is not a framework.

A library is a collection of predefined classes, functions, objects. The library is created using JavaScript language.

React JS is a JavaScript library.

What is the purpose of React JS?

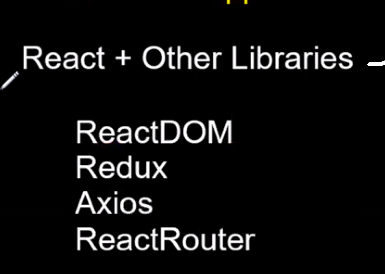
React JS is used to create User Interface.Creating User Interface is only just one part of Front end application.

Using React we can create static User Interface and dynamic UI.

Using only React we cannot create a Front end application.

To create Front end , along with React we have to use some additional libraries.





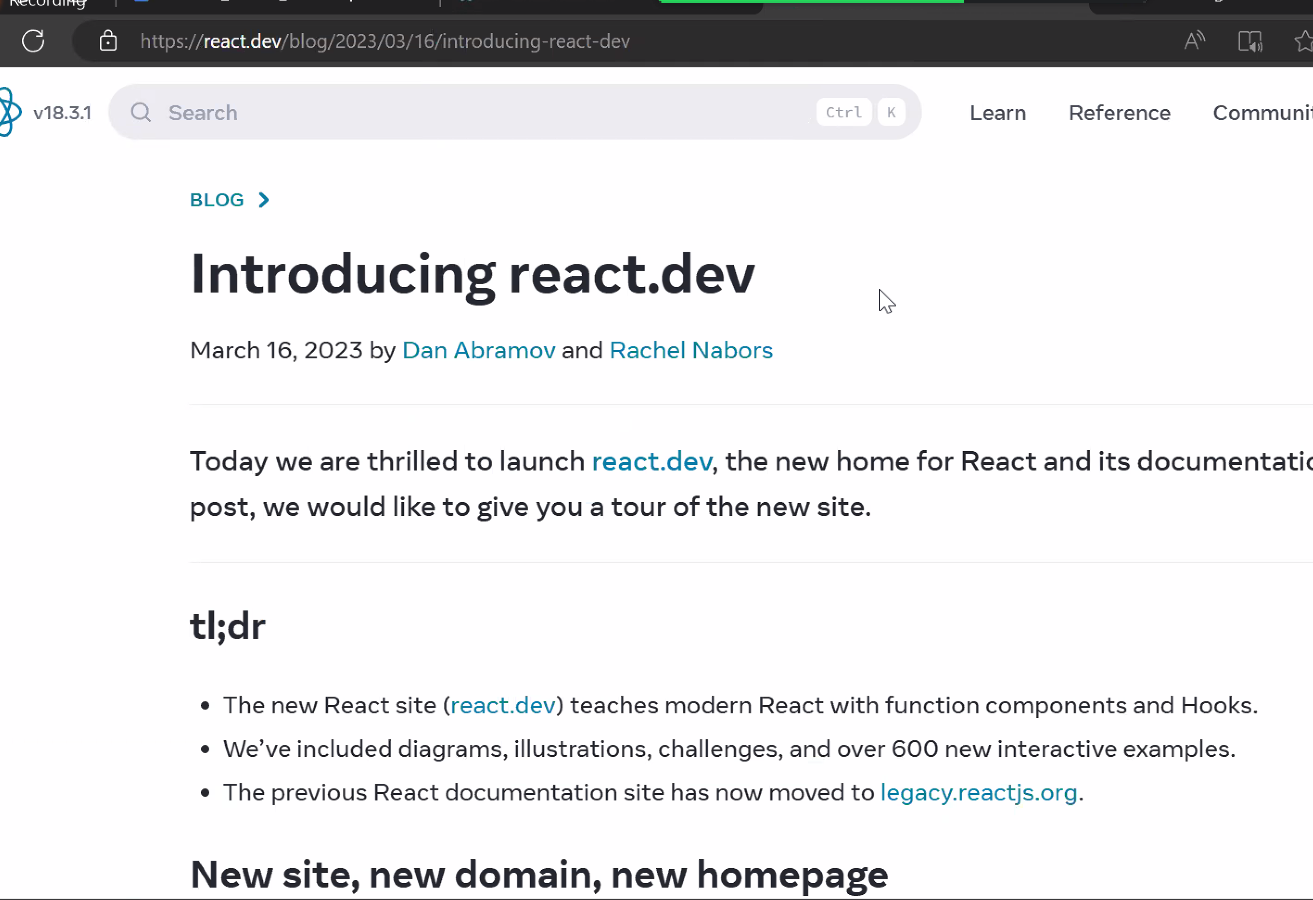
<https://legacy.reactjs.org/> --- old documentation

<https://react.dev/blog/2023/03/16/introducing-react-dev> -- new documentation

Along with React the above libraries are used to create Front end application .

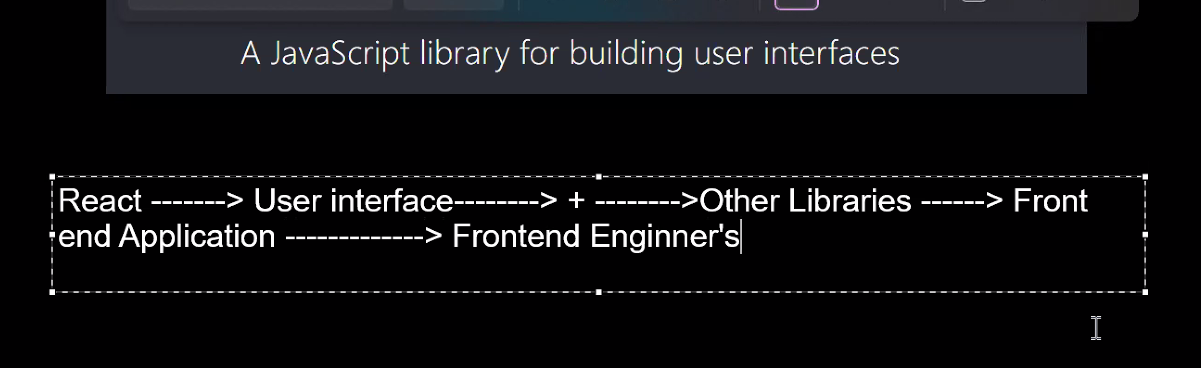
Version 18 is the latest version of React.

**Official website for React**



**Interview question**

**When you already have HTML and Java script to develop User Interface, why are we using React again?**



React is used to build or create User Interface

User Interface is a collection of UI components.

By using HTML also, you can create UI.Using JavaScript also we can create User Interface.

Then again why are we learning React to create UI?

Create a simple Button using HTML

HTML provides Button Element --Button Tag

Create a simple Button using JavaScript

JavaScript provides some predefined objects and functions.Using those predefined functions and objects we can create DOM Button Element.and add that DOM Button Element to DOM.

To create any DOM element in Javascript, we have to use document.createElement(‘button’)

If you create button using HTML, you call it HTML button element.

If you create button using JavaScript, you call it using DOM button element

In Javascript, using which method we can create a button?

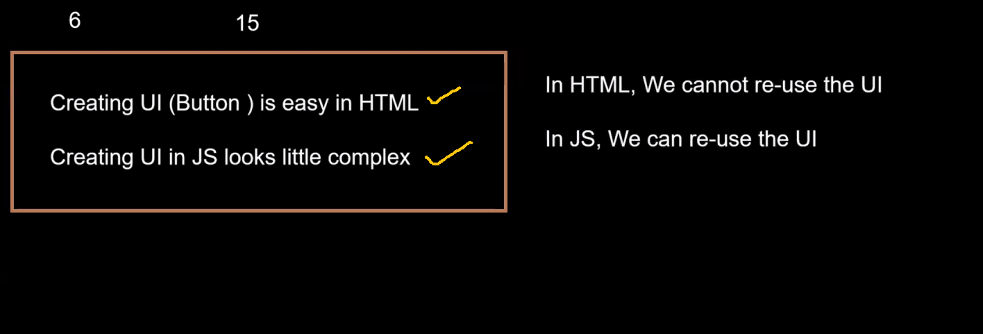
We can create a button in HTML using only one line of code.

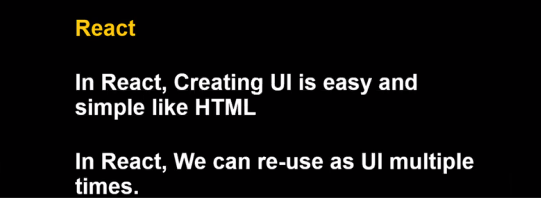
We can create a button in Javascript , we have three lines of code

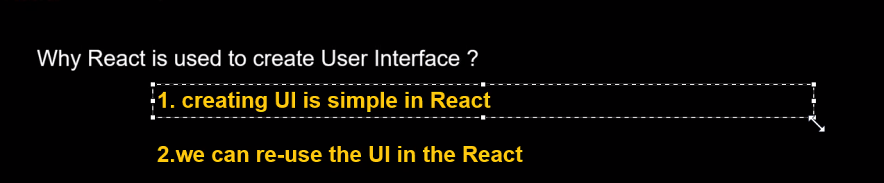
Therefore, creating a button in HTML is easier compared to JavaScript.

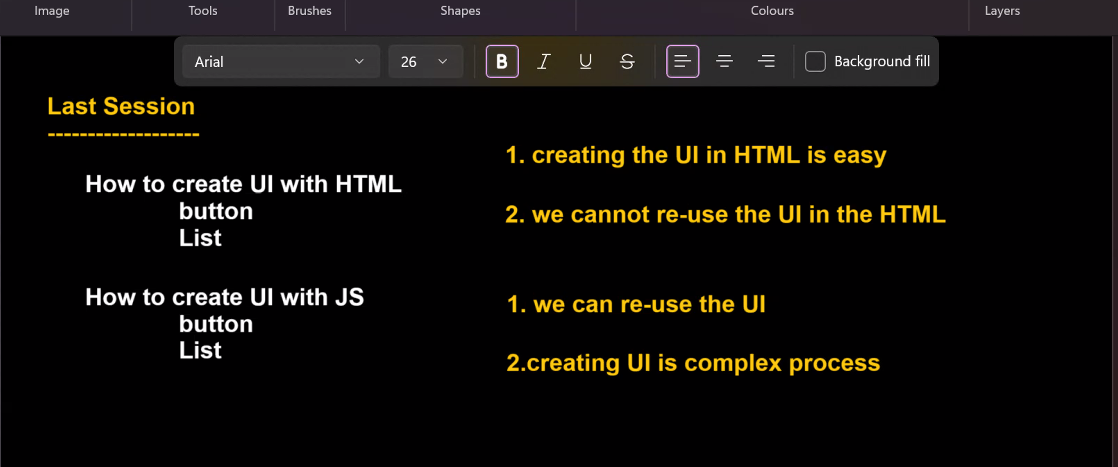
In HTML, we rewrite the code . For example if we want to create alist of names and display it 4 times on UI, we rewrite HTML code 4 times.

Where as in Java script we write the code in a function and we call the function 4 times

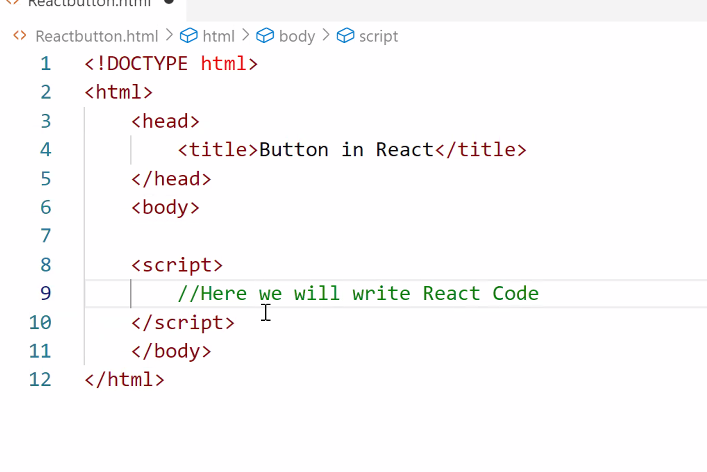






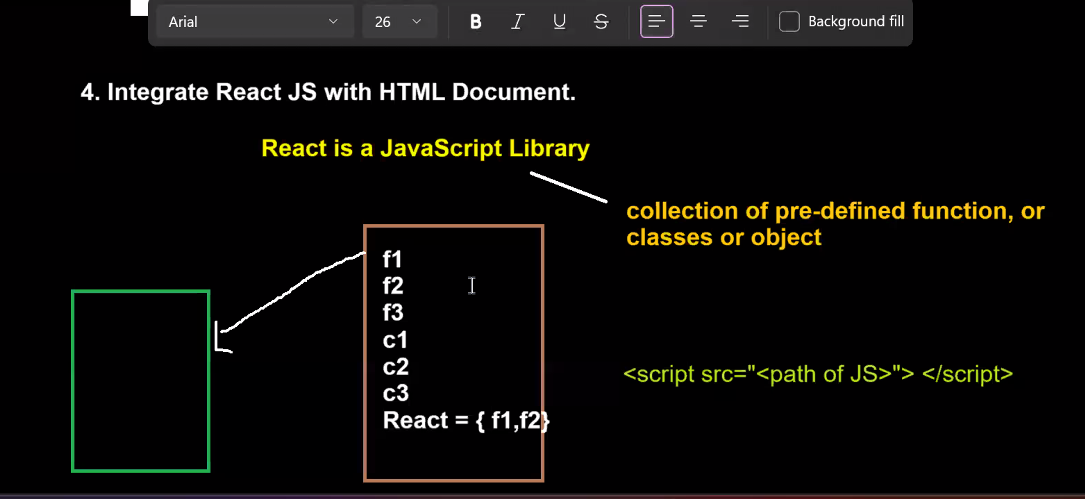


**SESSION-3**



Inside the script tag, we will write REACT code

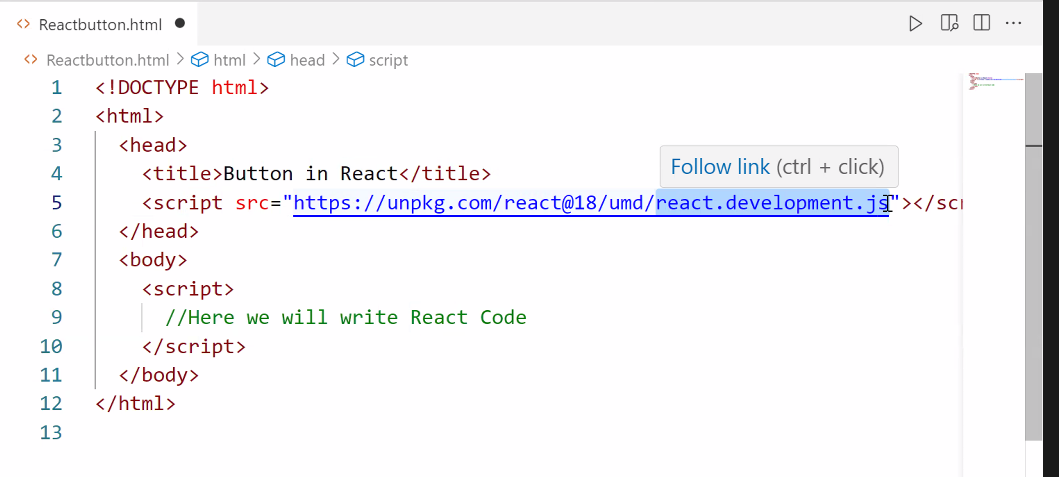
**Integrate REACT JS with HTML document**

To connect Javascript file to HTML file, we will use SCRIPT tag and give src=path of JS inside HTML file

To get the link, go to **<https://legacy.reactjs.org/>**

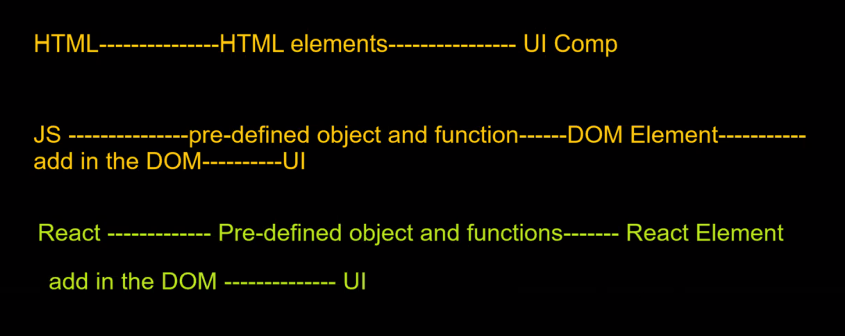
On the right side, click on CDN links.

Copy the first link



HTML is providing HTML elements to create UI

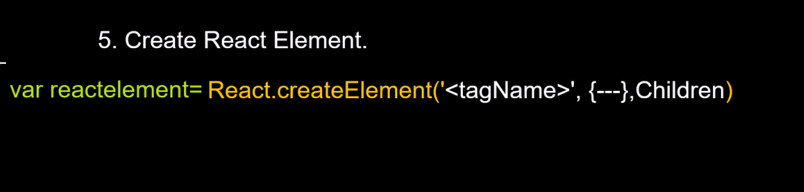
JS is providing pre-defined object and functions to create DOM elements. REACT elemets are very similar to DOM elements.Add them to DOM.

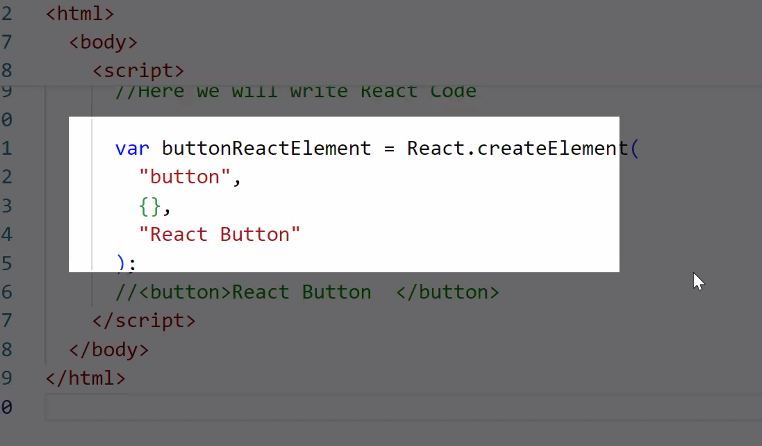


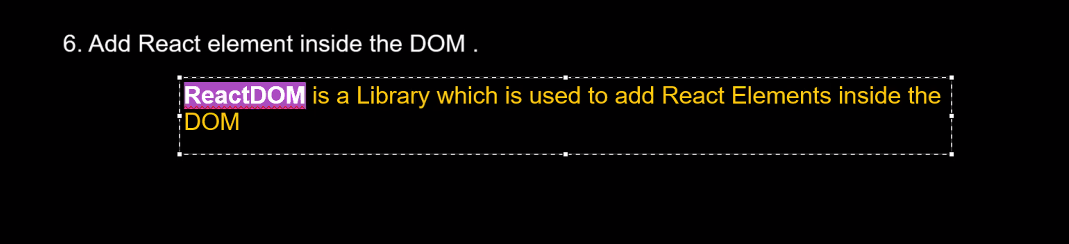
Childrens are something present in between opening tag and closing tag

In the above pic, for HTML tag---head, title, script are children

“Button in React” is child for <t>







Integration of REACT DOM with HTML document

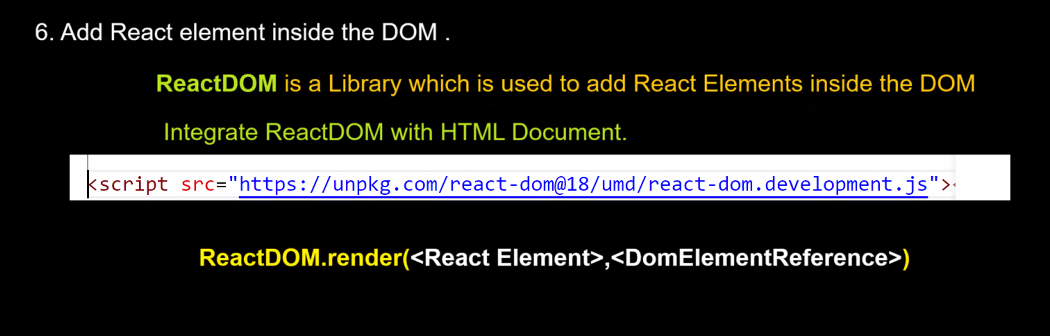


When you want to add React element inside the DOM, you have to integrate ReactDOM with HTML document.

As mentioned earlier, using React you can only create button.To add it to DOM, you need additional libraries.

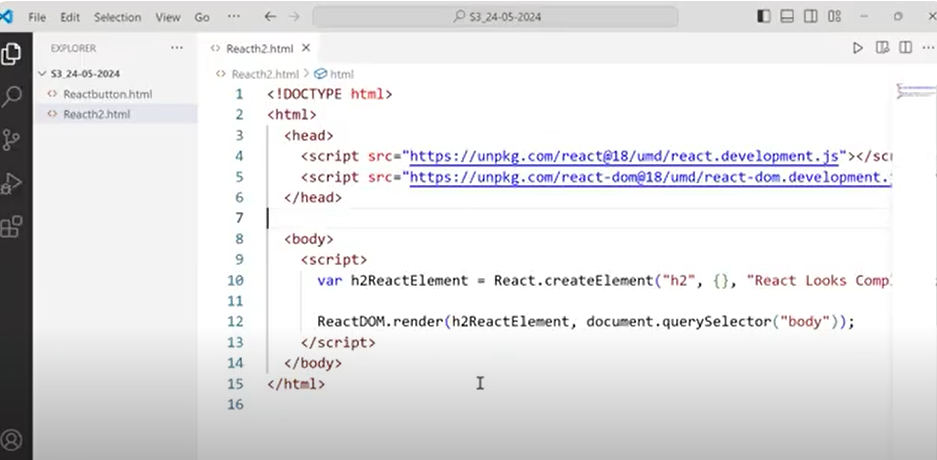
React library: To create elements

React DOM: To add elements to DOM.



DomElementReference: In your React, where you want to add the react element.

ReactDOM.render(buttonReactElement,document.getElementById(‘body’))

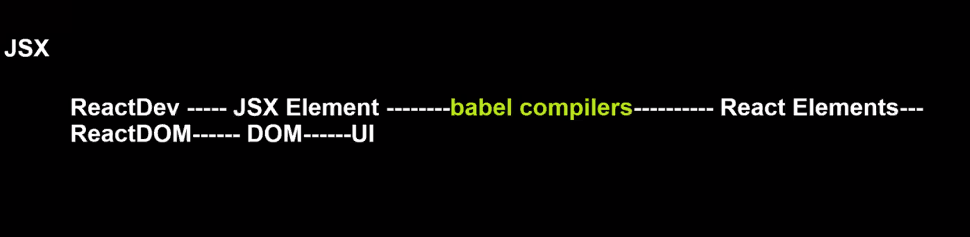


**Creating UI in REACT is simple or complex?**

JSX--- Javascript and XML

Babel compilers convert JSX elements to REACT elements.

Then REACT elements will be given to ReactDOM and ReactDOM will add it to DOM

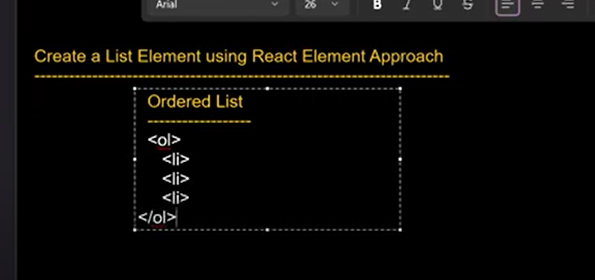


Instead of creating REACT elements, we create JSX elements and JSX elements are 95% similar to HTML elements

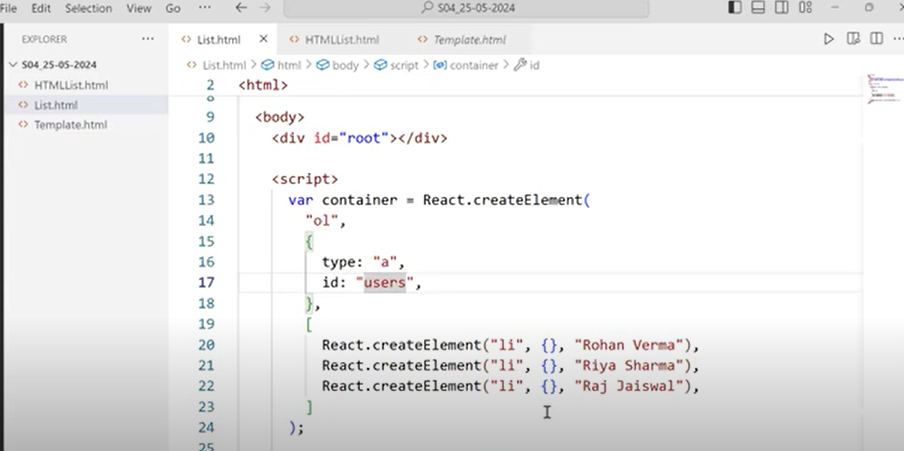


Due to JSX, creating UI in REACT became very easy

**SESSION 4**

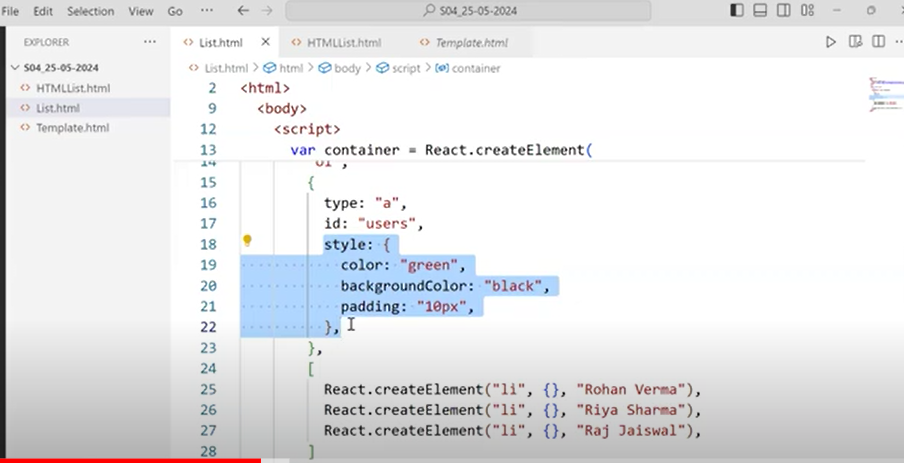


**How to configure the attributes in React elements?**



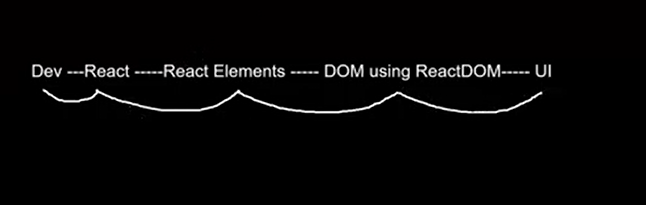
**How to add inline CSS in React?**

In React, whenever you are using Style attribute,its value should be one object.



As a developer, we are creating ReactElements uisng React and then adding those React Elements to DOM using ReactDOM and UI is created.

This process looks complex.



To make it easy, we started a new approach



JSX elements are very much similar to React elements and babel compiler converts JSX elements to React elements.

**How to create button with JSX?**

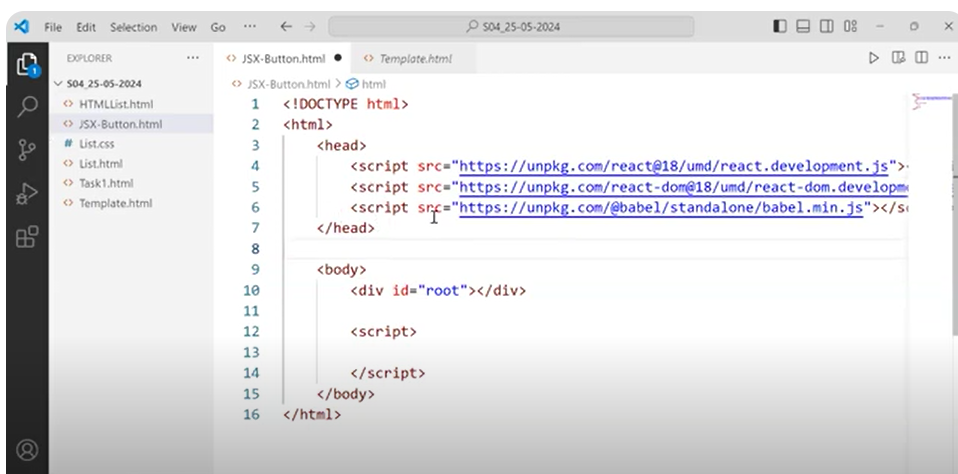
Along with REACT and REACTDOM, we will also integrate BABEL with HTML document.

Go to this link:  **<https://babeljs.io/>**

Click on **SetUp** and click on **In the Browser.**

Scroll down and copy the script tag

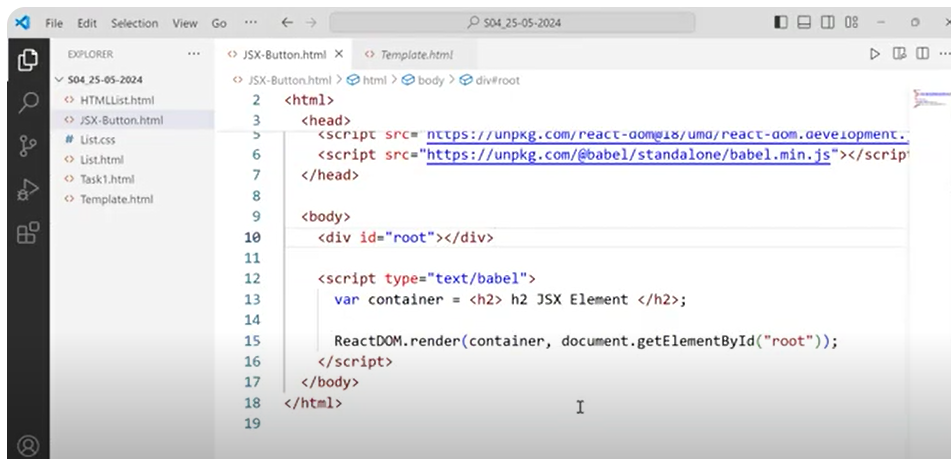
<https://unpkg.com/@babel/standalone/babel.min.js>

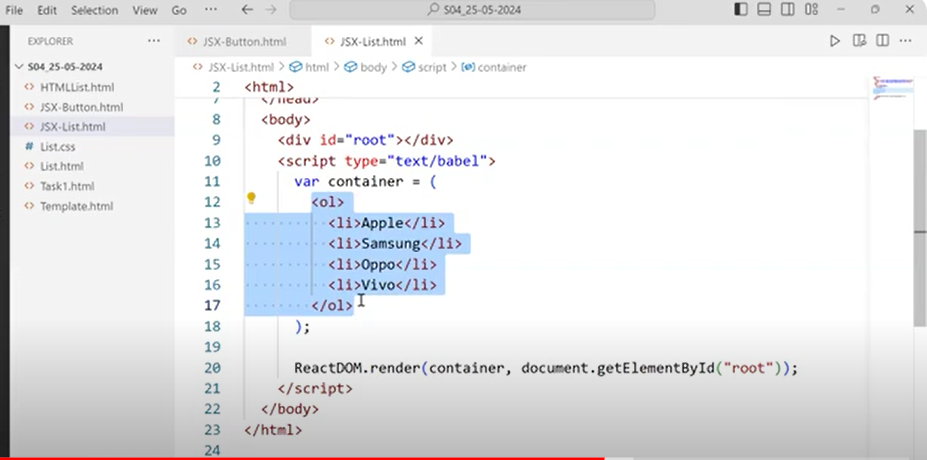


Add type =”text/babel” in script tag

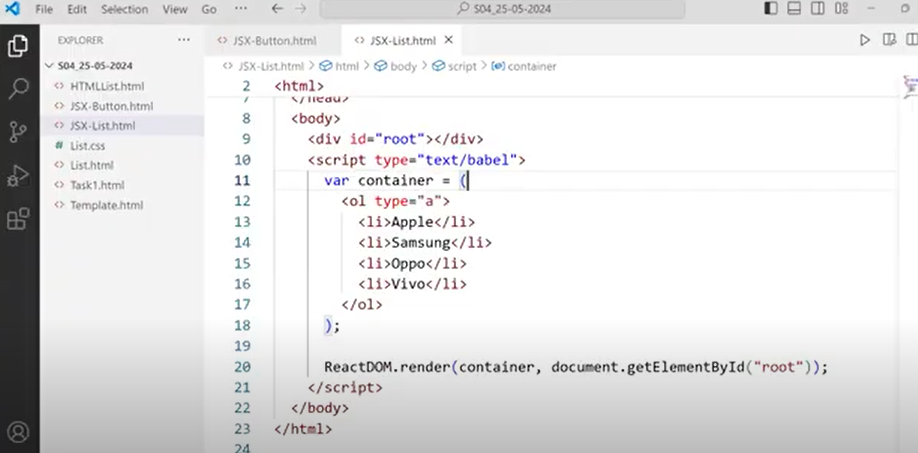


Inside your script tag, if we you are writing any HTML code, then it is called JSX.





Add marker ‘a’



Just for developers convenience, we are writing UI code in JSX.But at the end, JSX code should get converted to REACT elements and BABLE will take care of that.

**SESSION-5**

**Default width and height of div is**

**Width: 100%-- by default width occupies full screen**

**Height: Depends on children**

In order to make div look like a card, decrease width of div to some value and increase height of div to some value.

We can add CSS in three ways.-- Inline CSS, Internal CSS,External CSS

ReactDOM is a library which helps us to add elements inside DOM.

The moment ReactDOM encounters JSX element card, it will ask Babel to convert that JSX element to React element.Babel will convert that JSX element to React element and add it to DOM.

Inside your JSX, if you want to use JavaScript code, you need to use {} and inside the curly braces, you have to write your Javascript code

You can assign Java script code to your JSX elements attributes also.



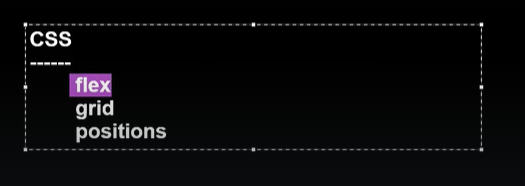
Therefore, you can use Javascript code inside JSX elements.This type of ability you don’t have in HTML.

Inside HTML code, you cannot write Javascript code.

To HTML attributes, you cannot assign Javascript elements or functions.

Where as to JSX attributes, you can assign Java script elements or functions.

To display cards in a single row, we have to use CSS.



Direct child of a flex container are called Flex items.By default Flex items will display in row direction.

To generate equal space between all cards, we can use **justify-content:space-evenly**

**Study flex concept in CSS**

**How to pass different data in each card?**

One of the easiest way is we can use functions.

How to create UserInterface inside a Javascript function?

**SESSION-6**

**So far concepts learned**

**How to create simple card using JSX?**

**How to reuse UI?**

**How to create UI inside Javascript function?**

**How to pass dynamic data to UI?**

**<script type=”text/babel” ></script> ==here attribute -> type = “text/babel” indicates that we can write JSX code inside script tag**

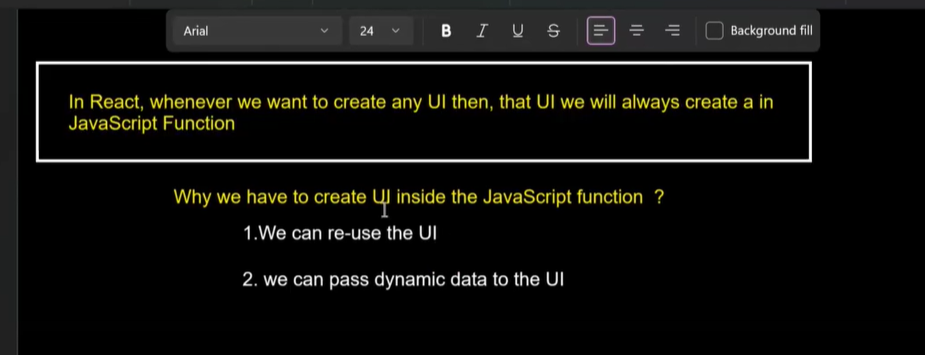
**If you create your UI inside a Javascript function, then you have two benefits.**

1. **We can reuse our UI**
2. **We can pass dynamic data in our UI**

**Whenever you call the Javascript function, it returns the entire JSX code.**

**BLIND RULE:**

**In React whenever we want to create any UI, then we will always create that UI inside a Javascript function.Even if we want to create a simple button, we will create that button using JSX inside a Javascript function only**



In Javascript, we call a function by using function name.

Ex:function createCard(){

return <div></div>

}

We call above function in Javascript by **createCard()**

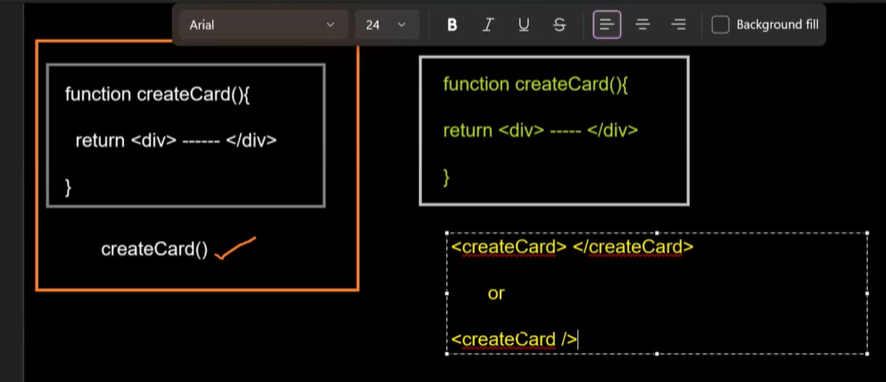
**In React we call above function in element format i.e tag format**

**<createCard></createCard>**

**Or**

**<createCard/> ---self closing tag format**

**If you are calling your function in tag format in JSX code, no need to use curly braces inside the JSX elements.**



**If you want to call your function in tag format, then your function name should start with Upper case.While defining your function or calling your function the first letter should be capital letter**

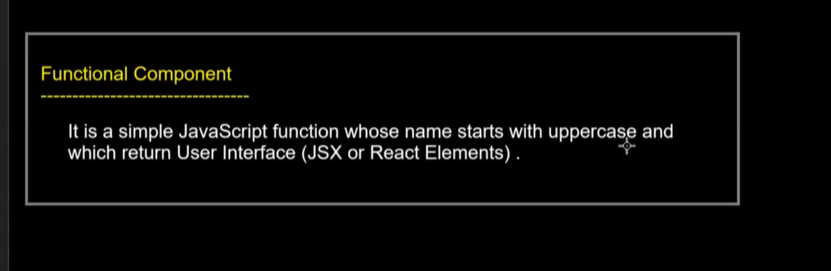
**When we use certain libraries or frameworks, we need to follow their rules.**

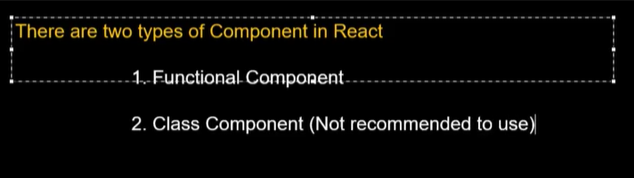
**Libraries will have little bit of less rules compared to frameworks.**

**In Angular, we have lot of rules.If we use all those rules correctly, we will have a lot of advantages.Only problem is we have to remember all those rules.**

**What is Functional Component in React?**

**It is a simple JavaScript function whose name starts with uppercase and returns User Interface(JSX or React elements)**





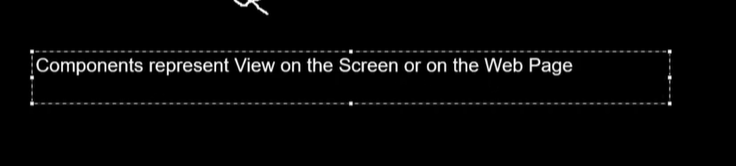
**No one in industry is uisng Class component.Everyone is using Functional component.React itslef recommend us to use Functional component and not Class component.**

**New documentation of React is completely created on Functional component.**

**In Angular also we use a lot of Object Oriented Programming(classes).Slowly they are moving from Object Oriented Programming to Functional Programming.**

**The core reason for moving towards Functional Programming is its simple to create and fast in execution**

**Before 2018, in React everybody was using Class component.After 2018, everybody started using Functional Component**

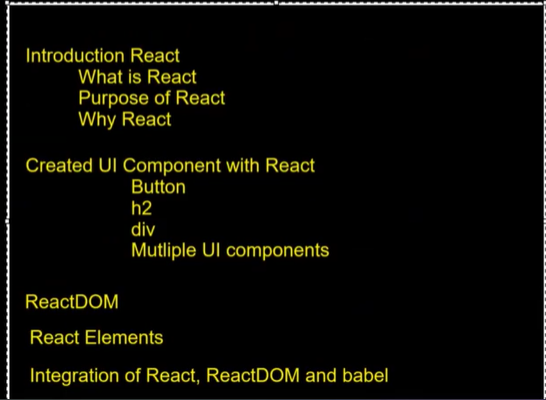


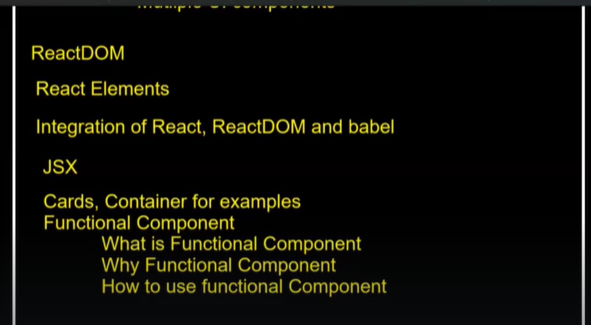
One Web page can have any number of components.



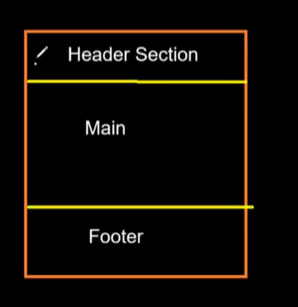
Therefore React and Angular follows Component based architecture

Concepts learned so far..





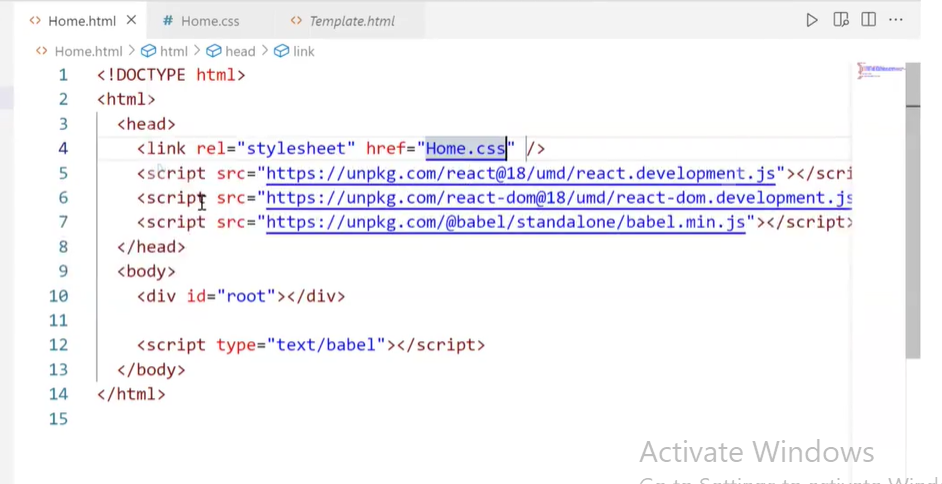
**SESSION-7**



To create three sections as above in React, for every section we create a Component.We can do it by creating one component also.But in future we wont be able to reuse Header section ad footer section.

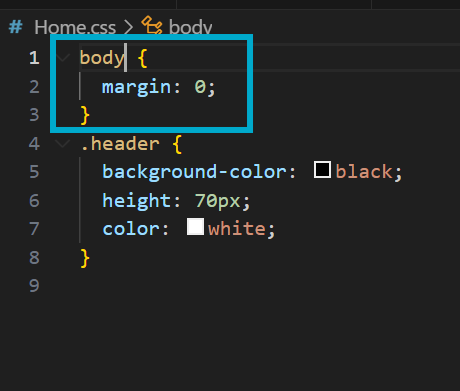
So as per react, we have to divide our User Interface into smaller components as much as possible so that we can reuse those components whenever and wherever we need them.

**How to link CSS file with HTML document?**

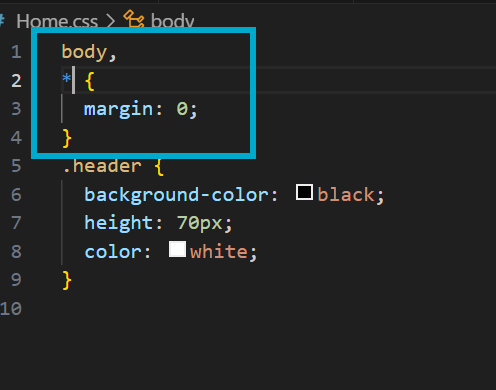




When you want to remove extra spaces , you need to give margin 0.



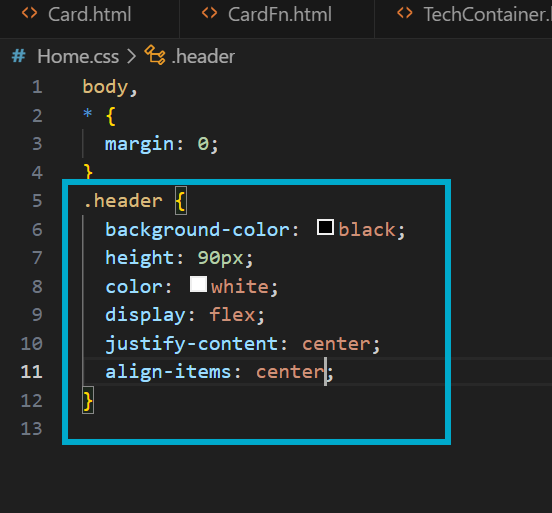
If you want to remove extra spaces for all components, you need to give **\***



Output looks like below

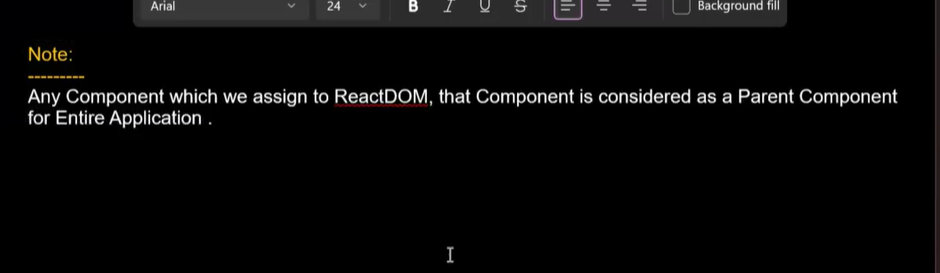


FLEX concept is very important

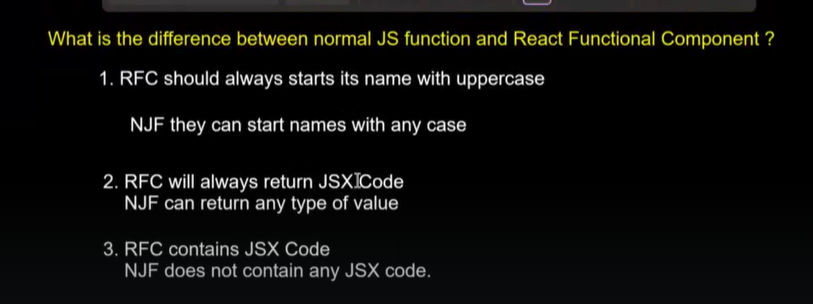


Without adding display:flex, justify-content and align-items don’t work.





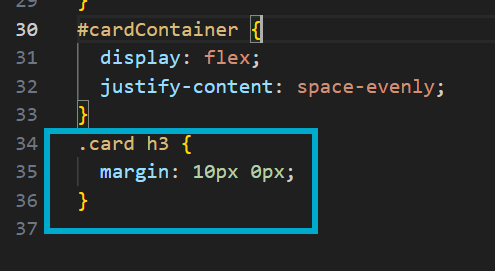
**Rendering = calling --- calls+converting JSX elements into React elements + added in the DOM**



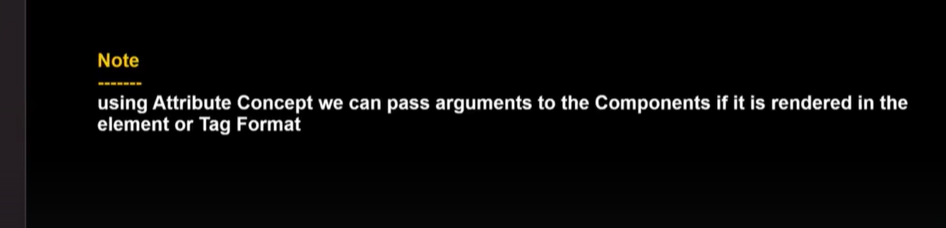
When you are using Java script functions we can use the term “call”

When you are using React Functional components, we can use the term “Render”

**If the component is a class, then for styling in CSS you have to use .class name.**



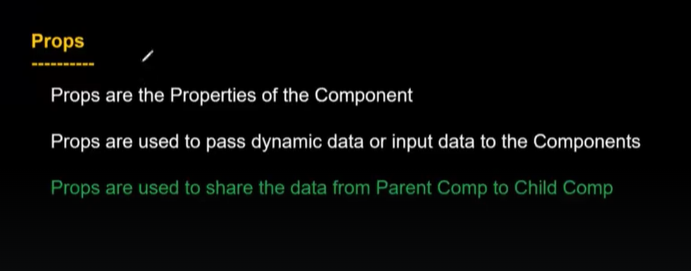
How to pass dynamic data to your component if you are calling in the element format?

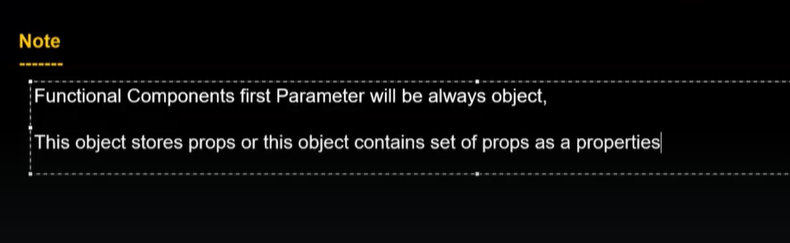


In normal HTML, we call it as Attributes.In React we call it as Props.

The first parameter inside the Functional component is always the Object and inside this object your Props will be stored.(Props will be stored like properties inside the object)

People prefer to keep the name of the first Parameter as Props





Interview question:

Props are not objects.Props are the properties of the component which are stored in one Object.

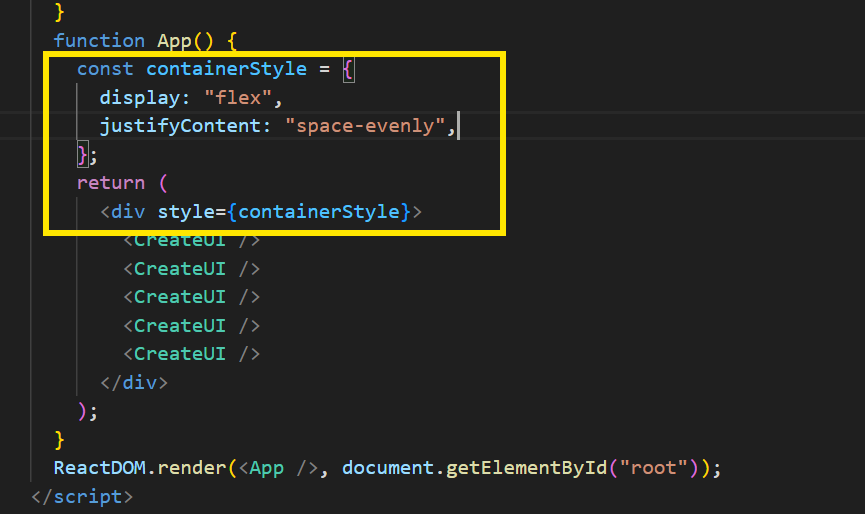
**SESSION-8**

**How to create a Nav(Navigation) bar?**

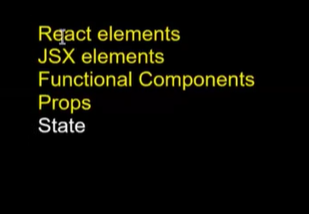
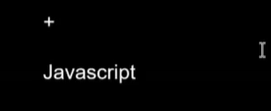
**Assignment at 26:01 and 27:17**

**Example of Inline CSS.Here containerStyle is an object.**

**Const containerStyle…. IS JAVASCRIPT CODE**



**Concepts learned so far:**

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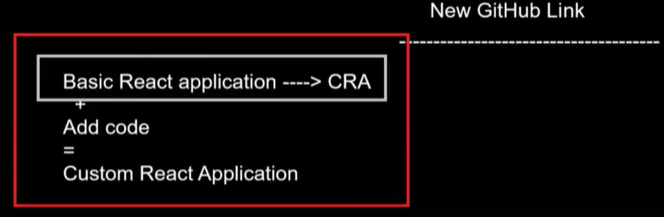
**These are Basics of React and 70 percent of interview will be on these concepts(React Basics+ Javascript Advanced)**

**First they will test your JavaScript knowledge, they don’t ask JavaScript basics, they ask Advanced Javascript concepts.If they feel you are good in Advanced Javascript, then they will ask React questions.If you fail in Javascript, then they will not go to React.**

**If you are good in Advanced concepts of Javascript and basics of React, then they will ask you advanced concepts of React**

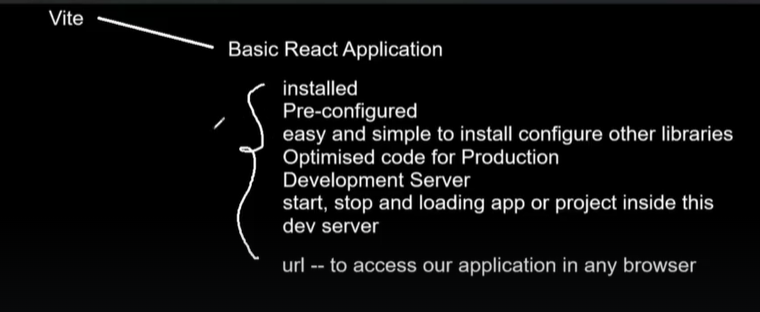
**Assignment at 53:31**

**SESSION-9:**



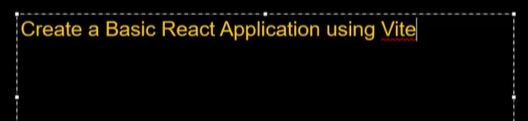
Before we start development of application, we are spending a lot of time in creating the application.

Vite is a tool that helps us to create Basic React Applications.

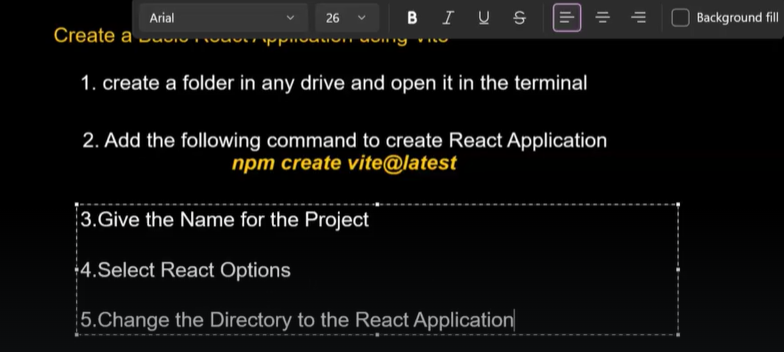


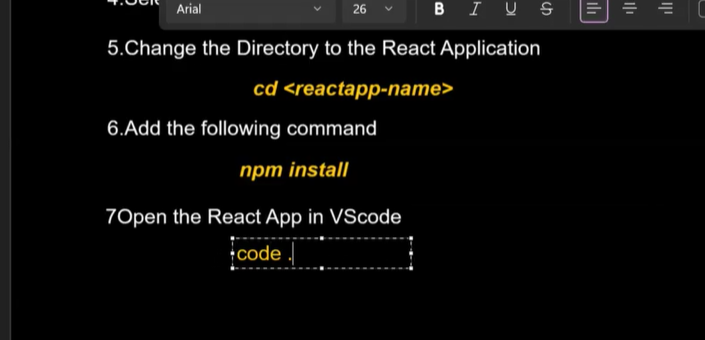
If you don’t use this tool, then manually you have to do all these things.Doing manually all these things will take a lot of time and you need to write a lot of code.

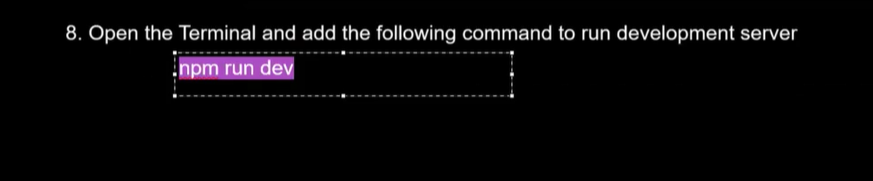
Using CRA also we can create React Application , but it takes lot of time.Performance of application which is created using CRA is a bit slower compared to the one which is created using Vite.

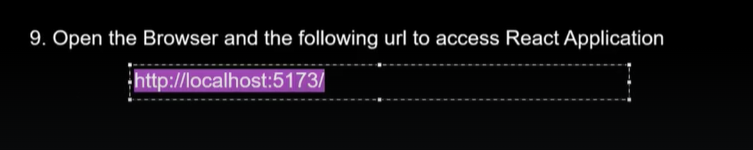


If you want to know more about Vite tool, go to **<https://vitejs.dev/>**



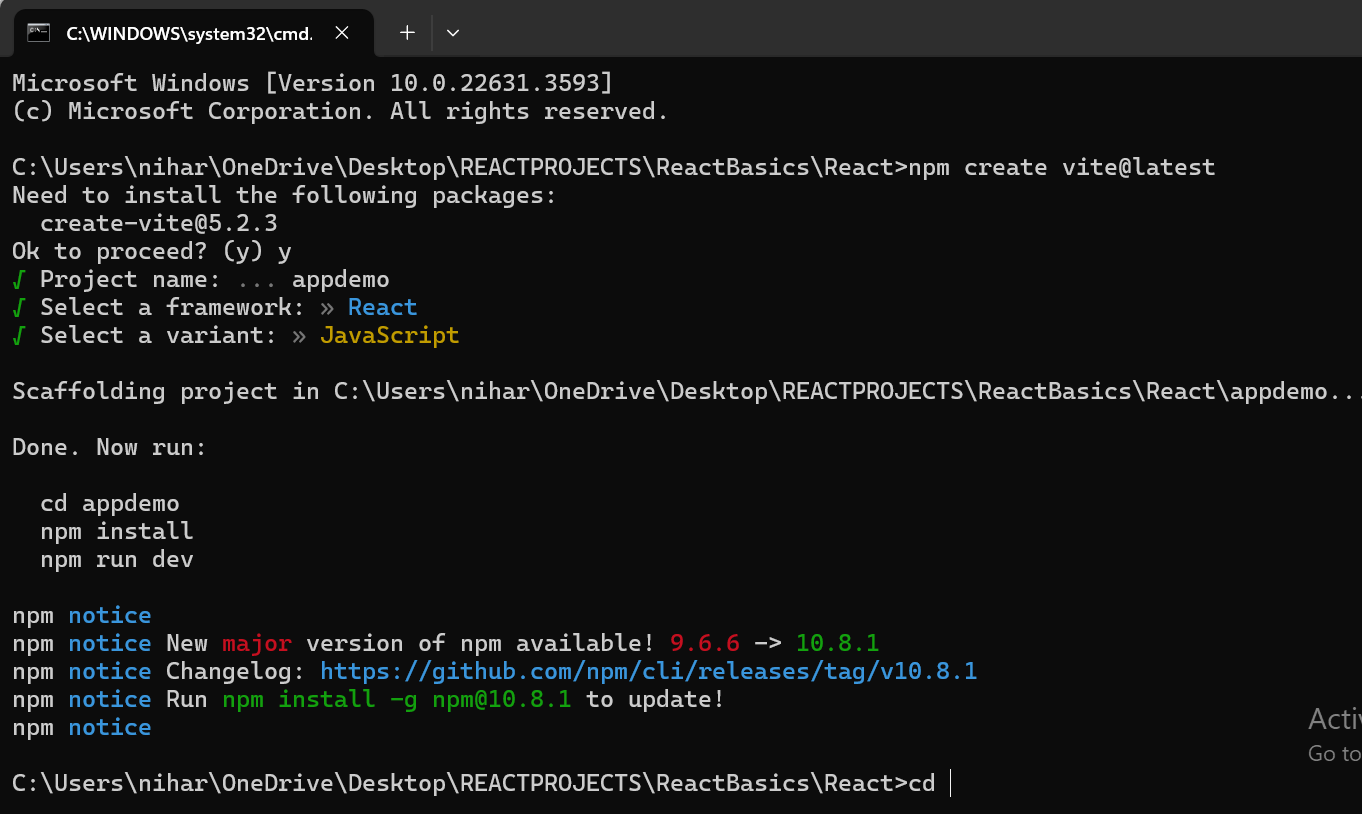






**Create a new folder in one of the drives**

**Open that new folder from Command Prompt and enter the command “**$ npm create vite@latest”



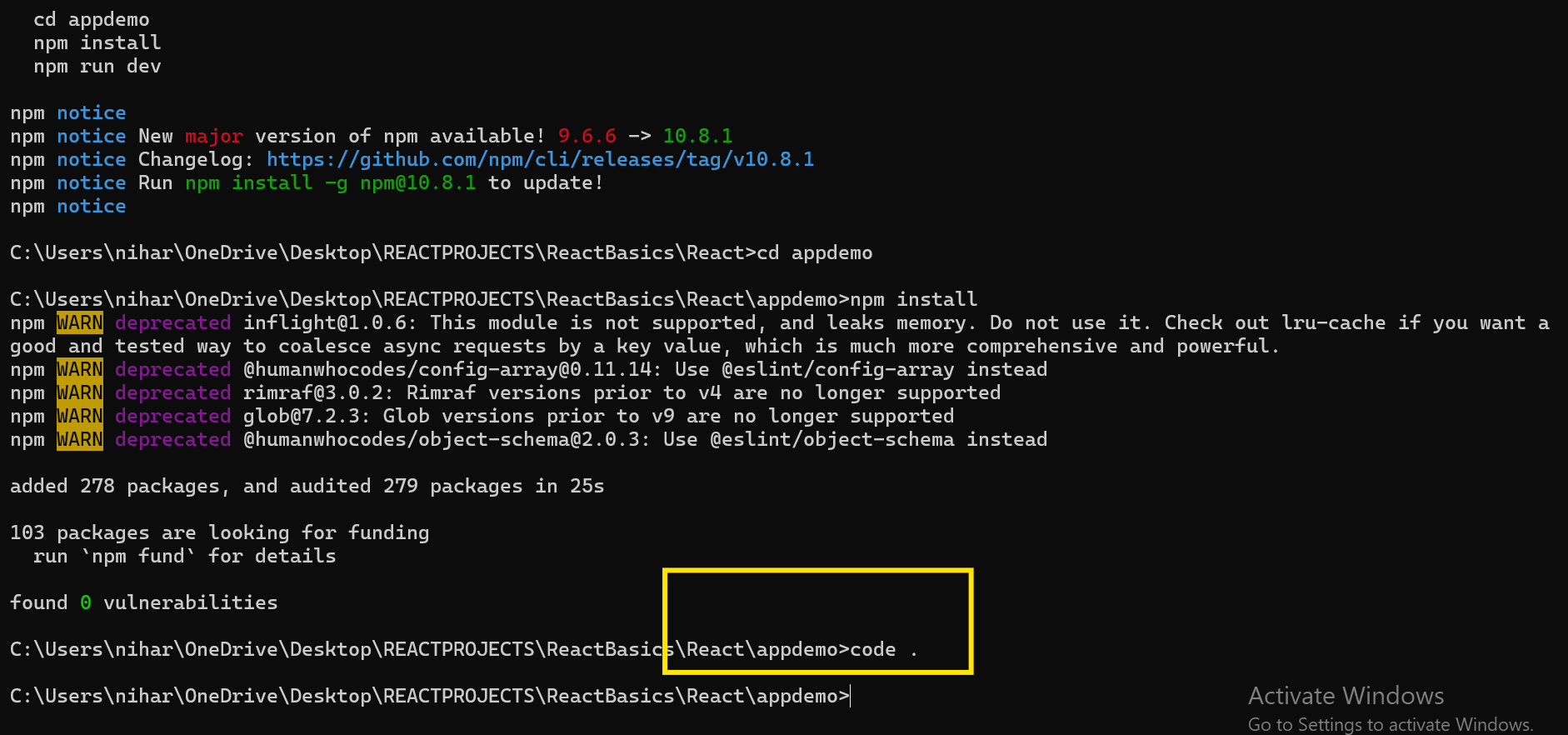
Enetr these commands

Cd appdemo

Npm install

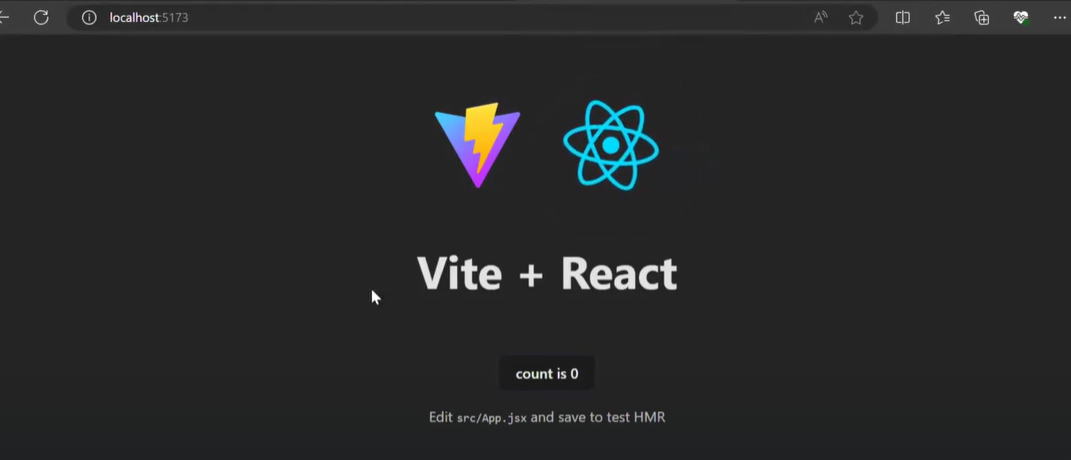
After installing enter code .

Your react application will open in VS code.



Enter command

**Npm run dev** --- telling Vite tool to start your development server and host this application appdemo in that development server.



**SESSION-10**

**The moment you give npm run dev command, the Vite tool will start internal development server and will host the application on this server.**

**How to create a React Application using vite?**

**The vite tool creates an App component App.jsx. Inside JSX file you can write Javascript code or JSX code.**

**Inside App.jsx file, they created App component and inside App componnet they created UI.You will find this file inside src folder.**

**In industry this is recommended.**

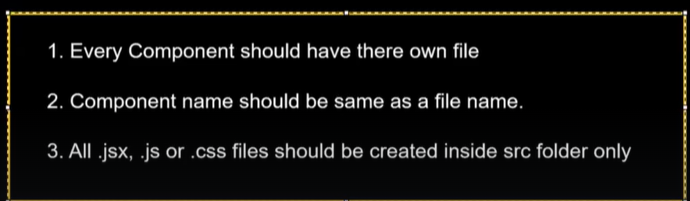
**1)Basically for every component there should be separate JSX fileor JS file.In file you should have only one component.This is recommended .But if you create multiple components inside one JS file or JSX file, there is no problem.**

**Each component should be present in each file, that file can be JSX file or JS(Javascript)file.**

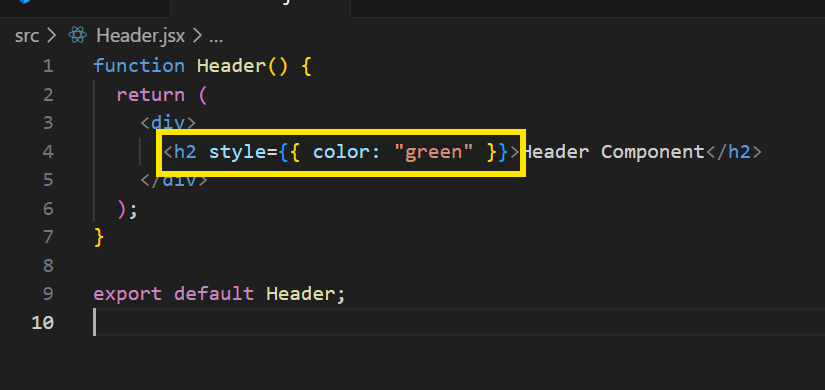
1. **Your file name and component name should be same.**

**In your application if you are creating 100 components, there should be 100 files.**

**All the components and CSS files are created in SRC folder.**



Below is example of Inline styling

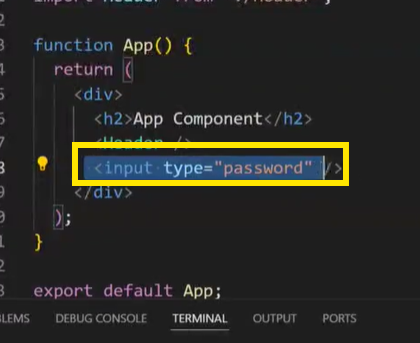




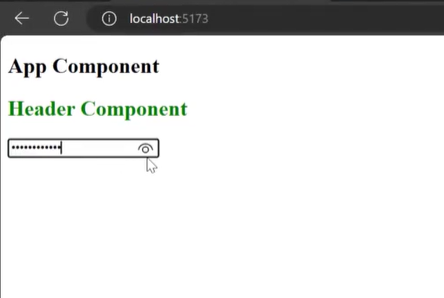
In your react application, index.html is the only html file that is getting loaded when you open the URL.

**What is Browser compatibility issue?**

When the functionality behaves in different ways in different browsers, then that is called Browser compatibility problem.

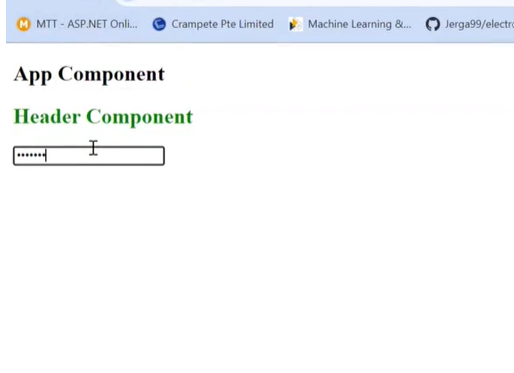


In the above case , the textbox behaves differently in Edge browser and Chrome browser.



When you type something in that textbox, you get that eye symbol.

When you access same application in Chrome browser, you wont see that eye symbol,



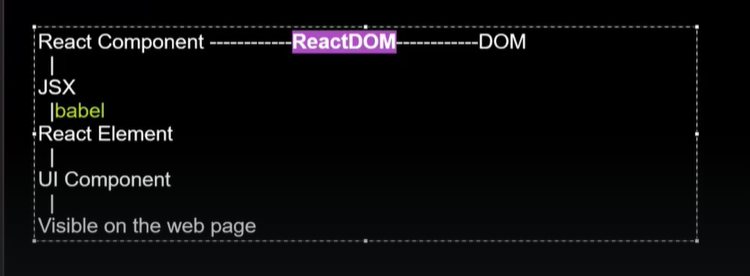
So to get that eye symbol, we did not write any code specifically.It’s the edge browser that has written some code to get that eye symbol.

**This kind of issues we call as Browser compatibility issues.**

**So whenever you are writing code, you have to take care of browser compatibility issues also.You have to give same kind of user experience in all the browsers.**

**Whenever you are developing projects, you will get such kind of requirements also.**

**React is a different library.ReactDOM is a different library and DOM is a different thing.**



When you create some JSX elements inside the React Component, the babel compiler will convert those JSX elements to React elements.

Based on React elements, UI components will be created if your React elements are loaded into DOM.

Question is who will give React elements to DOM?

If you give React elements to the DOM, only then UI component will be created by browser and visible on web page.

Using ReactDOM, we can load React elements to DOM.

ReactDOM provides a function called render() .You have to access the function by an object ReactDOM.

**ReactDOM.render()**

**Inside main.jsx file we write ReactDOM.render(). ---This code will work till React17 or less than React17 versions.From React 18, this code will not work.**

**Latest version of React is React 18 and soon they are going to release React 19.**

**90% of projects as of now in industry are working on React 16 or React 17**

**Add statement --> import ReactDOM from “react-dom”;**

**The highlighted path is path of library.The library is present under node-modules folder.Vite tool takes care of downlaoding it.**