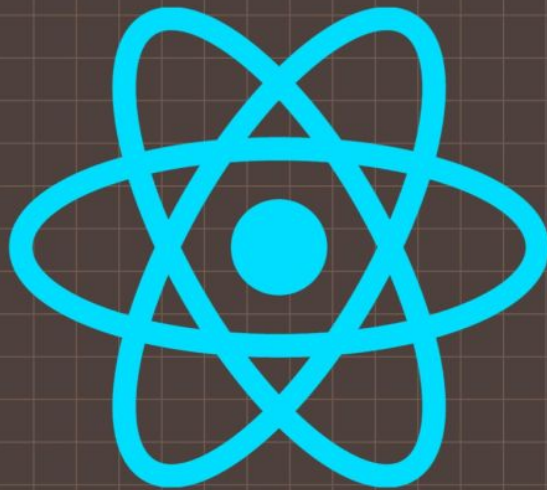# Namaste React

Khushi Johri Notes

What is React?

React is an Open-source Javascript library that is used for creating User Interfaces for Single Page Application (SPA). It is mainly used for handling view layer of any Web or Mobile Application.

Apps Used

Browser
- Chrome

Code Editor
- VS Code

Create an HTML file in VS Code

→ Drag-Drop a folder in VS code
→ Create a file index.html
→ Use Emmet to create a boiler plate
  : html 5

Ways to Add React in our project

1) Using CDN links in Script Tag

CDN → Content Delivery Network, these are websites where react has been hosted and we are pulling react into our project

Why do we use CDN?
To reduce latency (Delay in network communication). It is that annoying delay you experience when trying to access a web page or video stream before it fully loads.

HW What is cross origin in this script tag?
A cross origin request is a request for a resource (eg: style sheets, iframes, images, font or script) from another domain.

Who has written this react code?
Some developers of Facebook

What happened when we got React into our Project?
It gives us alot of different important functions and methods to use in our project.

What are we using 2 CDN links?
First is react.development.js this is the core of react.

Second is the react-dom.development.js to modify the Dom (Document Object Model)

Why there are 2 files and not just 1?
React works on Other devices using React Native in Mobile Phones, React 3D and more.

1st file is the core react and 2nd file is the react-dom file which make a bridge between react and browser.

Creating Elements in React

```
const heading = React.createElement ("h1", {}, "Hello World")
```

Create Element in React

Content to display inside Element

Element

"id : "heading"
to give
attribute to tag

```
const root = React.DOM.createRoot (document.getElementById ("root"));
```

To put the element on the DOM we use React DOM library

```
root.render (heading)
```

React was built to manipulate DOM using Js

Most costly thing is change the dom tree on some update in the project

To optimize it React is used to do this using Js.
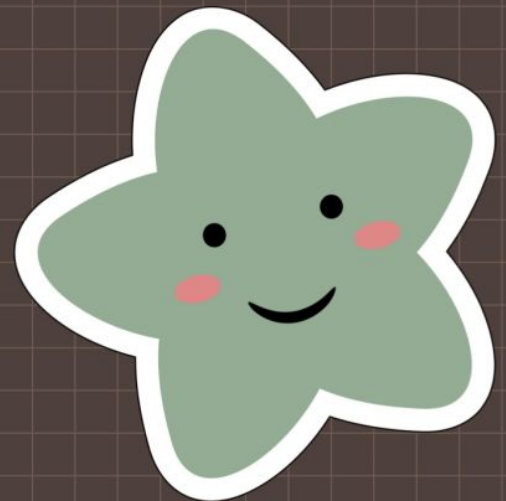
- Import Js in HTML
  ```
  <script src="./App.js"></script>
  ```

- Import CSS in HTML
  ```
  <link rel="stylesheet" href="./index.css"/>
  ```

HW **What is createElement? What does heading return?**

```
const heading = React.createElement ("h1",
          {id:"heading", xyz:"abc"},
          "Hello World from React!"
          );
console.log (heading)
```

→ attribute
→ children

React Element is an object
Props are children + attributes we are passing

```
root.render (heading)
```
→ used to create the <h1> tag and display it in the root

render is used to convert object into tag

How to create nested elements in React ?

```
/*
    <div id ="parent">
        <div id ="child">
            <h1> I'm h1 tag </h1>
        </div>
    </div>
*/
Const parent =React.createElement (
                "div",
                {id :"parent",
                React.createElement (
                    "div"
                    {id :"child"3,
                    React.createElement ("h1",
                    {},
                    "I'm h1 tag"
                ));
root.render (parent);
```

ReactElement (Object) ⟹ HTML (Browser Understands)

How to create sibling elements in React ?

To pass siblings we need to pass it in an array in the children

```
    <h1>.... </h1>
    <h2>..... </h2>
```

```
[React.createElement ("h1", {}, "I'm an h1 tag"),
 React.createElement ("h2", {}, "I'm an h2 tag"),
]
```

What happen if something is already inside
```
    <div id ="root">
        <h1> Khushi </h1>
    </div>
```

When we try to do root.render (....) and if something is already present inside the div tag then root.render will replace the child tag inside the div.

It is loaded but within few milliseconds replaced by root.render (parent)

What is the difference between a library and a framework ?
Library can work in a small part of the app too unlike a framework.

Framework need to be used in a fully fleged app to use them. They can't be used in already existing project.

But react can be used inside your existing project as well.