**React JS**

* **What is React JS?**
* React JS is a JavaScript framework or library for building a User Interface.
* It is used to create a single page application.
* React was developed by Facebook. Jordan Walke one of the facebook’s software engineers, created React and first it is used in Facebook newsfeed.
* **What is node js and how it requires for React?**
* NodeJS is a framework of JavaScript which is mainly used for working with the backend of our application or building the backend using JavaScript
* With the combination of Node and React, developers don't require learning complex back-end languages like Python or Ruby. They can use Node for server-side development and React for front-end code building without switching between frameworks and programming languages. And it saves resources, money, and time.
* Node js provides features for creating single page application using React js.
* Check the node version the command is – node -v.
* **What are the two node js platform that is used to create and update react js Application?**
* There are two platform provides node js to create and update React App 1) npx and npm

1. npx – npx stands for node package execute when we want to create react app then we use npx and other thing npx is only use in react only one time. There is a command to create a react app

npx create-react-app my-app

* Here my-app is a app name you write any app name instead of these.
* Check the version of npx command is- npx --v

1. npm – npm stands for node package manager after creating the app if we want to update the app or add packages using npm we can do easily.

* We can run our react app using npm start.
* Check the version using npm –v.

Note – Both npx and npm version are same after react app run successfully.

Simple React Snippet it is an extension for react JS shortcut.

* **What is React Router Dom and how it is installed?**
* React Router DOM is an npm package that enables you to implement dynamic routing in a web app,
* It allows you to display pages and allow users to navigate them.
* React Router Dom is used to build single-page applications i.e. applications that have many pages or components but the page is never refreshed instead the content is dynamically fetched based on the URL. This process is called Routing and it is made possible with the help of React Router Dom.
* Install command npm install react-router-dom@6.
* In react router dom there are many other items comes **BrowserRouter, Router, Routes**
* BrowserRouter- If suppose when we want to change the component from Url that is called BrowserRouter.
* Routes- There are many components for routing that is called Routes.
* Route- There are two element to pass the component one is path that is path is path of the component and another is element call the particular component.
* **What is MDB and how it is installed?**
* MDB stands for Material Design for Bootstrap it is same as Bootstrap that we use in css but here we use MDB in React.
* npm i mdb-react-ui-kit
* This is for font Awesome – npm i @fontawesome/fontawesome-free.
* import 'mdb-react-ui-kit/dist/css/mdb.min.css';
* import "@fortawesome/fontawesome-free/css/all.min.css";
* **Nested Router**

  <BrowserRouter>

        <Routes>

          <Route path="/" element={<Header />}>

            <Route path="home" element={<Home />} />

            <Route path="about" element={<About />} />

            <Route path="contact" element={<Contact />} />

          </Route>

        </Routes>

</BrowserRouter>

* Outlet always written in React fragment and it is used to display content in particular component.
* **Create own Routes?**
* When we want to create our own router createBrowserRouter is used.
* To parameters are used path of the route and element component we have to call.

Ex

const Mainroutes = createBrowserRouter([

    {

        path: "/",

        element :<Header/>

    },

    {

       path: "/home",

       element :<><Header/><Home/></>

    },

    {

        path:"/about",

        element:<><Header/><About/></>

    },

    {

        path:"/contact",

        element: <><Header/><Contact/></>

    }

* **Folder Structure of our own routers**



* **Lazy loading**
* Lazy loading basically used when we use to display some part when component is load when internet speed is low.

const Classcomporoutes = React.lazy(()=> import("./Classcompo/Classcomporoutes"));

const Functioncomporoutes = React.lazy(()=> import("./FunctionCompo/Functioncomporoutes"));

    {

        path:"/example",

        element:<><Header/><Example/></>,

        children:[

            {

                path:"Classcompo/\*",

                element: <Suspense fallback={<div>Loading...</div>}><Classcomporoutes/></Suspense>

            }

        ]

    },

    {

        path:"/example",

        element:<><Header/><Example/></>,

        children:[

            {

                path:"FunctionCompo/\*",

                element:<Suspense fallback={<div>Loading...</div>}><Functioncomporoutes/></Suspense>

            }

        ]

    }

* **Example.jsx**

import React from "react";

import { Link, Outlet } from "react-router-dom";

const Example = () => {

    return (<>

        <div className="container mt-3">

            <div className="row">

                <div className="col-6">

                    <h3>

                        <Link to="Classcompo">Class Component</Link>

                    </h3>

                </div>

                <div className="col-6">

                    <h3>

                        <Link to="FunctionCompo">Function Component</Link>

                    </h3>

                </div>

                    <div className="my-3">

                        <div className="col-md-12">

                            <Outlet></Outlet>

                        </div>

                    </div>

            </div>

        </div>

    </>);

}

export default Example;

* Here we have pass the folder name in the Link
* Outlet means the output display for class component menu. If we remove the outlet the class component menu doesn’t show
* **Create Classcomporoutes.jsx**

import React, { Component } from "react";

import { Route, Routes } from "react-router-dom";

import Classcompomenu from "./Classcompomenu";

import Classcompointro from "./Classcompointro";

class Classcomporoutes extends Component{

    render(){

        return(

            <Routes>

                <Route path="/" element={<Classcompomenu/>}>

                    <Route path="Classcompointro" element={<Classcompointro/>}/>

                </Route>

            </Routes>

        )

    }

}

export default Classcomporoutes;

* Here render means when we use class component if we want to return anything we write render function. This is class component so class component doesn’t return function expect function component but when we write render it allows returning in class component. Without render it gives error.
* There are two component pass. In / the default component is Classcompomenu and another in Classcompointro.
* **Classcompomenu.jsx**

import React, { Component } from "react";

import { Link, Outlet } from "react-router-dom";

class Classcompomenu extends Component {

    render() {

        return (

            <>

                <ul>

                    <li>

                        <Link to="Classcompointro">Classcompointro</Link>

                    </li>

                </ul>

                <Outlet></Outlet>

            </>

        )

    }

}

export default Classcompomenu;

* Here we create a menu for class component.
* If we remove Outlet here then the content of Class component Intro doesn’t show.
* **Classcompointro.jsx**

import React, { Component } from "react";

class Classcompointro extends Component{

    render() {

        return (

         <>

            <h2>Class Component Intro</h2>

         </>

        )

    }

}

export default Classcompointro;

* Here finally display content of Classcompointro after click on that.
* **JSX**
* JSX stands for JavaScript Syntax Extension.
* Basically with the help of JSX we can easily bind HTML and JavaScript code.

import React, { Component } from "react";

class Classcompojsx extends Component {

    render() {

        let a = 10;

        let b=20;

        let c=30;

        return (<>

            <h2>{a}</h2>

            <h2>{b}</h2>

            <h2>{c}</h2>

        </>);

    }

}

export default Classcompojsx;

* **Props**
* Props are used to pass the data from one component to another (Parent component to child component).

import React, { Component } from "react";

import Childcompoforclass from "./Childcompoforclass";

class Classcompoprops extends Component {

    render() {

        return (<>

            <h1>Main Compo</h1>

            <Childcompoforclass data="dishank" email="dishank@gmail.com" />

        </>);

    }

}

export default Classcompoprops;

import React,{ Component } from "react";

class Childcompoforclass extends Component {

    render() {

        return (<>

            <h1>Child compo</h1>

            <h4>{this.props.data}</h4>

            <h4>{this.props.email}</h4>

        </>);

    }

}

export default Childcompoforclass;

* **State**
* State is used to change the component data run time.

import React, { Component } from "react";

class Classcompostate extends Component {

    constructor() {

        super()

        this.state = {

            count: 0,

            name: ""

        }

    }

    Increment = () => {

        this.setState({ count: this.state.count + 1 })

        this.setState({ name: this.state.name = "Dishank" })

    }

    Decrement = () => {

        this.setState({ count: this.state.count - 1 })

        this.setState({ name: this.state.name = "Dishu" })

    }

    render() {

        return (<>

            <h1>{this.state.count}</h1>

            <h1>{this.state.name}</h1>

            <button onClick={this.Increment}>Increment</button>

            <button onClick={this.Decrement}>Decrement</button>

        </>);

    }

}

export default Classcompostate;