React  
Exercise 1: myfirstreact

**Install Create React App:**

Open Command Prompt and run:

npm install -g create-react-app

**Create a new React application:**

npx create-react-app myfirstreact

**Navigate into the folder:**

bash

CopyEdit

cd myfirstreact

**Open project in Visual Studio Code:**

bash

CopyEdit

code .

**Edit the App.js file:**

* Go to: src/App.js
* Delete existing content and paste the following:

jsx

import React from 'react';

function App() {

return (

<div>

<h1>Welcome to the first session of React</h1>

</div>

);

}

export default App;

**Run the React application:**

npm start

**Open in browser:**

* It should automatically open at <http://localhost:3000>
* You’ll see:  
  **Welcome to the first session of React**

Exercise 2:

//Open Visual Studio Code terminal and type:

npx create-react-app StudentApp

//Then go into the project:

cd StudentApp

//Inside the src folder, create a new folder named:

Components

//Inside src/Components, create a file named **Home.js** and type the following:

import React from 'react';

class Home extends React.Component {

render() {

return (

<div>

<h1>Welcome to the Home page of Student Management Portal</h1>

</div>

);

}

}

export default Home;

//Inside src/Components, create a file named **About.js** and type the following:

import React from 'react';

class About extends React.Component {

render() {

return (

<div>

<h1>Welcome to the About page of the Student Management Portal</h1>

</div>

);

}

}

export default About;

//Inside src/Components, create a file named **Contact.js** and type the following:

import React from 'react';

class Contact extends React.Component {

render() {

return (

<div>

<h1>Welcome to the Contact page of the Student Management Portal</h1>

</div>

);

}

}

export default Contact;

//Open src/App.js and replace the code with the following:

import React from 'react';

import Home from './Components/Home';

import About from './Components/About';

import Contact from './Components/Contact';

function App() {

return (

<div className="App">

<Home />

<About />

<Contact />

</div>

);

}

export default App;

//Go back to the terminal and type:

npm start

//Open your browser and go to:

http://localhost:3000

Exercise 3:

//create react app

npx create-react-app scorecalculatorapp

//CalcukateScore.js

import React from 'react';

import '../Stylesheets/mystyle.css';

function CalculateScore() {

const name = "John Doe";

const school = "Green Valley School";

const totalMarks = 450;

const goal = 500;

const average = (totalMarks / goal) \* 100;

return (

<div className="score-container">

<h2>Student Score Calculator</h2>

<p><strong>Name:</strong> {name}</p>

<p><strong>School:</strong> {school}</p>

<p><strong>Total Marks:</strong> {totalMarks}</p>

<p><strong>Goal:</strong> {goal}</p>

<p><strong>Average Score:</strong> {average.toFixed(2)}%</p>

</div>

);

}

export default CalculateScore;

//mystyle.css

.score-container {

margin: 50px auto;

padding: 20px;

max-width: 500px;

border: 2px solid #4CAF50;

border-radius: 10px;

background-color: #f9f9f9;

font-family: Arial, sans-serif;

}

.score-container h2 {

color: #4CAF50;

text-align: center;

}

.score-container p {

font-size: 18px;

line-height: 1.6;

}

//App.js

import React from 'react';

import './App.css';

import CalculateScore from './Components/CalculateScore';

function App() {

return (

<div className="App">

<CalculateScore />

</div>

);

}

export default App;

//run

Npm start

//open browser

<http://localhost:3000>

Exercise 4: blogapp – Using componentDidMount() & componentDidCatch()

//create react app

npx create-react-app blogapp

//Post.js

import React from 'react';

function Post({ title, body }) {

return (

<div className="post">

<h2>{title}</h2>

<p>{body}</p>

</div>

);

}

export default Post;

import React, { Component } from 'react';

import Post from './Post';

class Posts extends Component {

constructor(props) {

super(props);

this.state = {

posts: [],

hasError: false

};

}

// Step 6: Method to Load Posts

loadPosts = () => {

fetch('https://jsonplaceholder.typicode.com/posts')

.then(response => response.json())

.then(data => {

this.setState({ posts: data });

})

.catch(error => {

throw new Error('Failed to load posts');

});

}

// Step 7: componentDidMount

componentDidMount() {

this.loadPosts();

}

// Step 9: Error Handling

componentDidCatch(error, info) {

alert("An error occurred in the Posts component.");

this.setState({ hasError: true });

}

// Step 8: Render Method

render() {

if (this.state.hasError) {

return <h1>Something went wrong.</h1>;

}

return (

<div>

<h1>Blog Posts</h1>

{this.state.posts.map(post => (

<Post key={post.id} title={post.title} body={post.body} />

))}

</div>

);

}

}

export default Posts;

//App.js

import React from 'react';

import './App.css';

import Posts from './Posts';

function App() {

return (

<div className="App">

<Posts />

</div>

);

}

export default App;

//run

Npm start

//open browser

<http://localhost:3000>

Exercise 5: Styling a Cohort Dashboard

//Open Terminal and Navigate to the Application Folder

cd path-to-your-unzipped-react-app

npm install

code.

//css

.box {

width: 300px;

display: inline-block;

margin: 10px;

padding: 10px 20px;

border: 1px solid black;

border-radius: 10px;

}

///js

import styles from './CohortDetails.module.css';

<div className={styles.box}>

{/\* Cohort content goes here \*/}

</div>

/h3

<h3 style={{ color: cohort.status === 'ongoing' ? 'green' : 'blue' }}>

{cohort.status}

</h3>

Exercise 6:

//create react app

npx create-react-app TrainersApp

cd TrainersApp

/jjs

class Trainer {

constructor(id, name, email, phone, technology, skills) {

this.TrainerId = id;

this.Name = name;

this.Email = email;

this.Phone = phone;

this.Technology = technology;

this.Skills = skills;

}

}

export default Trainer;

//npm install react-router-dom

import { Link } from 'react-router-dom';

const TrainersList = ({ trainers }) => {

return (

<div>

<h2>Trainers List</h2>

<ul>

{trainers.map((trainer) => (

<li key={trainer.TrainerId}>

<Link to={`/trainers/${trainer.TrainerId}`}>{trainer.Name}</Link>

</li>

))}

</ul>

</div>

);

};

export default TrainersList;

//home.js

const Home = () => {

return <h2>Welcome to Cognizant Academy Trainers Dashboard</h2>;

};

export default Home;

//app.js

import { BrowserRouter, Routes, Route, Link } from 'react-router-dom';

import Home from './Home';

import TrainersList from './TrainerList';

import TrainerDetail from './TrainerDetail';

import mockTrainers from './TrainersMock';

function App() {

return (

<BrowserRouter>

<nav>

<Link to="/">Home</Link> | <Link to="/trainers">Trainers</Link>

</nav>

<Routes>

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

<Route path="/trainers" element={<TrainersList trainers={mockTrainers} />} />

<Route path="/trainers/:id" element={<TrainerDetail />} />

</Routes>

</BrowserRouter>

);

}

export default App;

//trainer.js

import { useParams } from 'react-router-dom';

import mockTrainers from './TrainersMock';

const TrainerDetail = () => {

const { id } = useParams();

const trainer = mockTrainers.find(t => t.TrainerId === parseInt(id));

return trainer ? (

<div>

<h2>{trainer.Name}</h2>

<p>Email: {trainer.Email}</p>

<p>Phone: {trainer.Phone}</p>

<p>Technology: {trainer.Technology}</p>

<p>Skills: {trainer.Skills.join(', ')}</p>

</div>

) : (

<p>Trainer not found</p>

);

};

export default TrainerDetail;

//run

npm start

Exercise 7:

//create react app

npx create-react-app shoppingapp

cd shoppingapp

code.

//cart.js

import React from 'react';

class Cart extends React.Component {

render() {

return (

<div style={{ border: '1px solid gray', padding: '10px', margin: '10px' }}>

<h3>Item Name: {this.props.itemname}</h3>

<p>Price: ₹{this.props.price}</p>

</div>

);

}

}

export default Cart;

..Onlineshopping.js

import React from 'react';

import Cart from './Cart';

class OnlineShopping extends React.Component {

constructor(props) {

super(props);

this.items = [

{ itemname: 'Smartphone', price: 25000 },

{ itemname: 'Headphones', price: 1500 },

{ itemname: 'Laptop', price: 55000 },

{ itemname: 'Smartwatch', price: 5000 },

{ itemname: 'Backpack', price: 1200 }

];

}

render() {

return (

<div>

<h2>Welcome to Online Shopping</h2>

{this.items.map((item, index) => (

<Cart key={index} itemname={item.itemname} price={item.price} />

))}

</div>

);

}

}

export default OnlineShopping;

//app.js

import React from 'react';

import OnlineShopping from './OnlineShopping';

function App() {

return (

<div className="App">

<OnlineShopping />

</div>

);

}

export default App;

//run

npm start

Exercise 8: React Router and SPA Trainer App

//create react app

npx create-react-app TrainersApp

npm install react-router-dom

npx create-react-app shoppingapp

npx create-react-app counterapp

//output

People Entered: 4

People Exited: 2

[Login Button] [Exit Button]