React JS

Learning ReactJS

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What is React?

ReactJS is a popular JavaScript library

It is used for building user interfaces for web applications.

It was developed and maintained by Facebook

It is great for SPA which load once and later everything happens thru JavaScript without reloading the page.

React was release on 29th May 2013.

Similar products available in market are Angular and Veujs.

Installing React 18.0

Download and Install Node Js

Node –version

Npm – version (node package manager)

React Developer Tools – chrome extension

Npx create-react-app appname (if nodem error try **npm install -g npm**)

Npm start --- to run the app

Vscode extention vscode es7 react/reduc/react-native/js snippets

React JSX (JavaScriptXML)

- JSX allows us to write HTML elements in JavaScript and place them in the DOM
- export default function App() {
  return (<h1>Hello World</h1>);
  }
  ……
  Tags must be closed

JS vs React App Function

- function App(){
- let str=`<h1>Hello World</h1>`
- return str
- }
- root.innerHTML = App()
- .....
- function App(){
- return (<h1>Hello World</h1>)
- }
- root.render(<App/>)

One top Element / Fragment

- ```

    Paragraph 1
    Paragraph 2

  ```

- ```
  <>
    <p>Paragraph 1</p>
    <p>Paragraph 2</p>
  </>
  ```

React Components (jsx)

- export default function Header() {
  return <h1>Company Name</h1>;
  }
- export default function Content() {
  return <h1>Display content here</h1>;
  }
- export default function Footer() {
  return <h1>Footer Section</h1>;
  }

Component Props & Expression

- ….User.js…..
- export default function User(props) {
  return (
  Hello {props.name}
)
  }
- …. App.js
-
  <User name="John"/>

If Statement with props

- function Result(props) {
- const r = props.r;
- if (r) {
- return <Pass/>;
- }
- return <Fail/>;
- }

Ternary Operator

- ……
```
function Result(props) {
  const r = props.r;
  return (
    <>
      { r ? <Pass/> : <Fail/> }
    </>
  );
}
```

Logical Operator

- const cart = ['rice', 'wheat', 'sugar’];
- {
  cart.length > 0 && //used instead of if
  <h2> You have {cart.length} items in your cart.</h2>
  }

Map function to display array

- function Cart() {
  const arr = ["Rice", "Wheat", "Sugar"];
  return (

      {arr.map((item) => (
        {item}
      ))}

  );
}

Events in React

- function Customer() {
  const greet = () => {
  alert("Hello!");
  }
  return (
  <button onClick={greet}>Greet</button>
  );
  }

Events (Passing Arguments)

- function Customer() {
  const greet = (a) => {
  alert(a);
  }
  return (
  <button onClick={() => greet("Hi Ajay")}>Greet</button>
  );
  }

Props (default)

- import ReactDOM from "react-dom/client";
- function Student(props){
  return props.age
  }
- Student.defaultProps = { //outside the component
    name:'John’,
    age:20
  }
- const r = ReactDOM.createRoot(document.getElementById("root"));
  r.render(
  <Student name='John' age="20" />
  );

React Styling – Inline Styling

```
const Header = () => {
  return (
    <>
      <h1 style={{backgroundColor: “blue"}}>Hello World!</h1>
      <p>Add a little style!</p>
    </>
  );
}
```

……

camelCase property name – used backgroundColor instead of background-color

State Management (useState hook)

- The data is stored in the React Component's state object.
- When the state object changes, the component will re-render itself.
- export default function App6() {
  const [count, setCount] = useState(1); //cannot be inside loops, if or functions
  console.log(Date()) //runs everytime count changes
  return (
  <>
  <button onClick={() => setCount((prevState) => prevState - 1)}>-</button>
  {count}
  <button onClick={() => setCount((prevState) => prevState + 1)}>+</button>
  </>
  );
  }