REACT

React is a library.

LIBRARY:

FRAMEWORK:

Appendchild method is used to display an element in the browser with the help of JS

<body>

<div id="root"></div>

</body>

<script>

const heading = document.createElement("h1");

heading.innerHTML = "Hello World";

const root = document.getElementById("root")

root.appendChild(heading);

</script>

To add/inject react library to code, search react CDN

<script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>

<script crossorigin src="https://unpkg.com/react-dom@18/umd/react-dom.development.js"></script>

React element is an object.

React has API that can be used inside HTML file to create elements, React just doesn’t have jsx way of creating elements.

Polyfill : Conversion of newer code to older code such that old versions of browser can understand it. Babel converts it.

Npx = npm + run

When we install a plugin, make sure to read how to configure it, else It will generate errors.

-Jsx is not html inside javascript, it is not HTML syntax, it is HTML like syntax. Ex JSX has camel case naming convention of attributes. Neither html or javascript understands jsx code, babel know what jsx means and its kind of a compiler, it generates a AST(Abstract syntax tree).

-JSX and react are two completely different things which are interdependent.

JSX is a modified and easier to write version of react which was developed by react developers.

Every JSX is a React element

JSX uses react.createelement.

React = 1) Elements ( ex: const will = ( <h1>Hi</h1>);)

2)Components: a) Functional component b) Class based component.

//React component

const HeadingComponent = () => {

return (

<div>

<h1>Hello</h1>

<h2>I am Saif</h2>

</div>

);

};

//React element

const header = (

<div>

<h1>What a good day!</h1>

<h3>Lets begin..</h3>

</div>

);

const root = ReactDOM.createRoot(document.getElementById("root"));

root.render(header); //way to call create element

root.render(<HeadingComponent />) //way to call react component

JSX is very secure. The JS code is first sanitized before executing it, all the APIs will be checked first to avoid XSS attack and then executed.

Js fuction is a component.

Calling of a component to be rendered is called component composition.

Jsx can have only one root/parent. We cant say/do

const test = () => {

return (

<h1>Hello</h1>

<h2>World</h2>

)

}

It will throw an error saying JSX should have one parent, hence we have to write it like this

const test = () => {

return (

<div>

<h1>Hello</h1>

<h2>World</h2>

</div>

);

};

This is called wrapping up, but so many divs can cause confusion its called React.fragment(a component of React library). react.fragment hides div(parent) from DOM to avoid confusion. <React.fragment> == <>

const test = () => {

return (

<>

<h1>Hello</h1>

<h2>World</h2>

</>

);

};

Three ways to apply CSS, 1)Inline CSS. 2)Using CSS file and 3) Using libraries(Tailwind, Bootstrap and Material UI).

<Very big deal> Config-driven UI: UI based on the certain configuration which is sent by the backend.

Optional chaining?(H/W).

Props(properties) are used alongside components to pass some data into it.

Spread operator(VV IMP): […RestaurantList].

We don’t use for loop to display all data in Industry, we use .Map method.

Virtual DOM is a software Engg concept, we keep a representation of DOM with us in our code, this is known as virtual DOM. We need virtual DOM for reconciliation in React. Reconciliation is an algorithm that React uses to differentiate one tree(Virtual DOM) from another. And it determines what needs and needs not to be changed in UI. This knowledge of changing just what needs to be changed and not the whole code(it knows that to re-render and does not render the whole code). This makes React super-fast.

To make this super fast we use something known as key, keys are assigned to divs such that react will know that in a particular component, only the key=1(say) needs to be re-render but not all the divs. We should not use Index as key.

We can just export default(default import) <component> one component from a file with the help of export default method.

To export multiple components we use export by name(Named import) method.

Local variables vs React variables: If we want our variables to be in sync with UI we have to use state variables.

A hook is just a normal function and does a particular job only.A useState is used only to create state variables.

Hooks works purely on reconciliation. Re-rendering only the selected component and not the whole website.

Synthetic events.

React only support one way binding, hence we need to use these useFucntions() to make it a two way binding.

onChange={(e) => {

setSearchText(e.target.value);

}}

For change of events we use the above way.

onClick={() => {

setSearchClicked("true") ;

}}

For simple click operations, we use this way.

To make search functionality work with present data, we need to use onChanged and onClick both of the ways of implementation.

git init

git add <filename>

git status -> green status

create .gitignore

npm init -y -> package-json

npm intall -D parcel -> node modules and package-lock-json

npm install react

npm install react-dom

npx parcel <entry file> -> runs the project

npm parcel build <entry file> -> builds a production version but doesn’t run.

Add “start” : “parcel <entry file>, in script then use npm start to run the project.