**React Hands On 2:**

Q1. Explain React components

React components are the building blocks of a React application.  
Each component is a piece of the user interface, like a button, form, or header, and can be reused throughout the app.  
Components can be functional (written as JavaScript functions) or class-based (written as ES6 classes). They manage their own state and accept input through props to render dynamic, interactive UIs.

Q.2 Identify the differences between components and JavaScript functions

1. Components return JSX (which looks like HTML) to define how a part of the UI should look; JavaScript functions usually return values, not UI.
2. Components can manage state and lifecycle methods; regular JavaScript functions cannot handle UI state by themselves.
3. Components are used to build user interfaces in frameworks like React; JavaScript functions are general-purpose code blocks for logic or calculations.
4. Components can accept props to render dynamic content; JavaScript functions use parameters for input but don’t deal with rendering the UI.

Q3. Identify the types of components

1. Functional components — simple components written as JavaScript functions that return JSX.
2. Class components — use ES6 classes, can have state and lifecycle methods.
3. Presentational components — focus only on how things look, without managing state.
4. Container components — handle data, state, and logic, and often pass props to presentational components.

Q4. Explain class component

A class component in React is a JavaScript ES6 class that extends the React.Component base class.  
It must have a render() method that returns JSX to display the UI.  
Class components can hold and manage their own state and use lifecycle methods.

Q5. Explain function component

A function component in React is a simple JavaScript function that returns JSX to define the UI. Function components can use React hooks (like useState and useEffect) to handle state and side effects.

Q6. Define component constructor

A component constructor is a special method used in a class component to initialize the component’s state and bind methods.  
It Is defined using the constructor keyword and called when the component is created.

Q7. Define render() function

The render() function is a required method in every React class component. It describes what the UI should look like by returning JSX. Whenever the component’s state or props change, the render() function runs again to update the UI.

**Hands On Exercise:**

Home.js:

import React, {Component} from 'react';

class Home extends Component{

    render(){

        return(

            <div>

               <h3>Welcome to the Home page of Student Management Portal</h3>

            </div>

        )

    }

}

export default Home;

About.js:  
function About() {

  return (

    <div>

      <h3>Welcome to the About page of Student Management Portal</h3>

    </div>

  );

}

export default About;

Contact.js:  
function Contact() {

  return (

    <div>

      <h3>Welcome to the Contact page of Student Management Portal</h3>

    </div>

  );

}

export default Contact;

App.js:

import logo from './logo.svg';

import './App.css';

import Home from './components/Home';

import About from './components/About';

import Contact from './components/Contact';

function App() {

  return (

    <div className='container'>

      <Home/>

      <About/>

      <Contact/>

    </div>

  );

}

export default App;

Website screenshot:

