# 3. ReactJS-HOL

**• *Explain React components***  
React components are reusable, self-contained pieces of UI that define how a portion of the interface should appear. They help in breaking down the UI into smaller parts, making the code modular and easier to manage.

**• *Identify the differences between components and JavaScript functions***  
While both can be written as functions, React components return JSX (UI elements), whereas JavaScript functions return data or perform logic. React components are also recognized by React for rendering and can manage state and lifecycle.

**• *Identify the types of components***There are mainly two types of components in React: **Class Components** and **Function Components**. Class components use ES6 classes and can hold state and lifecycle methods, while function components are simpler and can use hooks for state and effects.

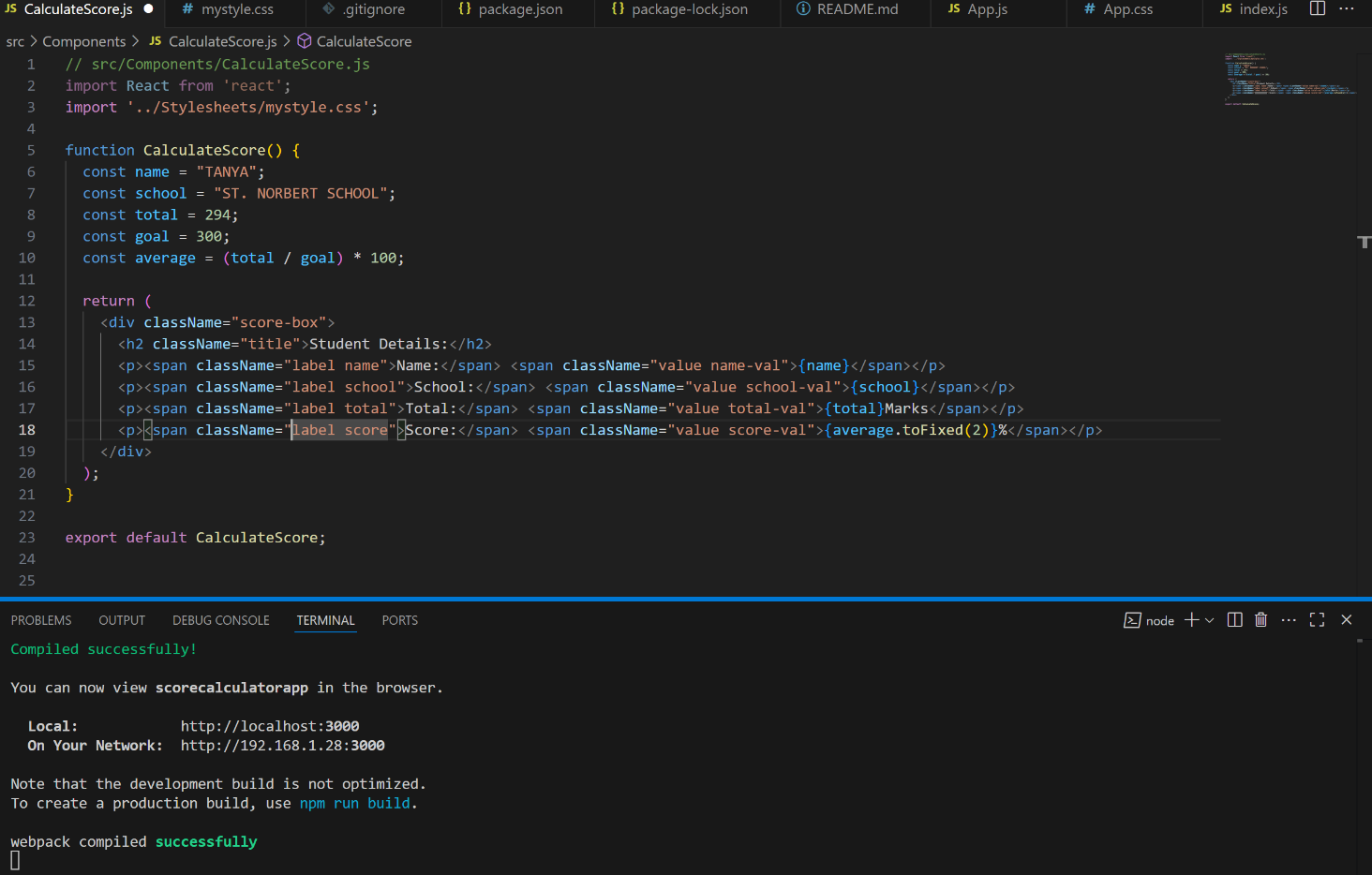
**• *Explain class component***  
A class component is a React component written using ES6 classes. It must extend React.Component and include a render() method that returns JSX. It can also maintain internal state and use lifecycle methods like componentDidMount().

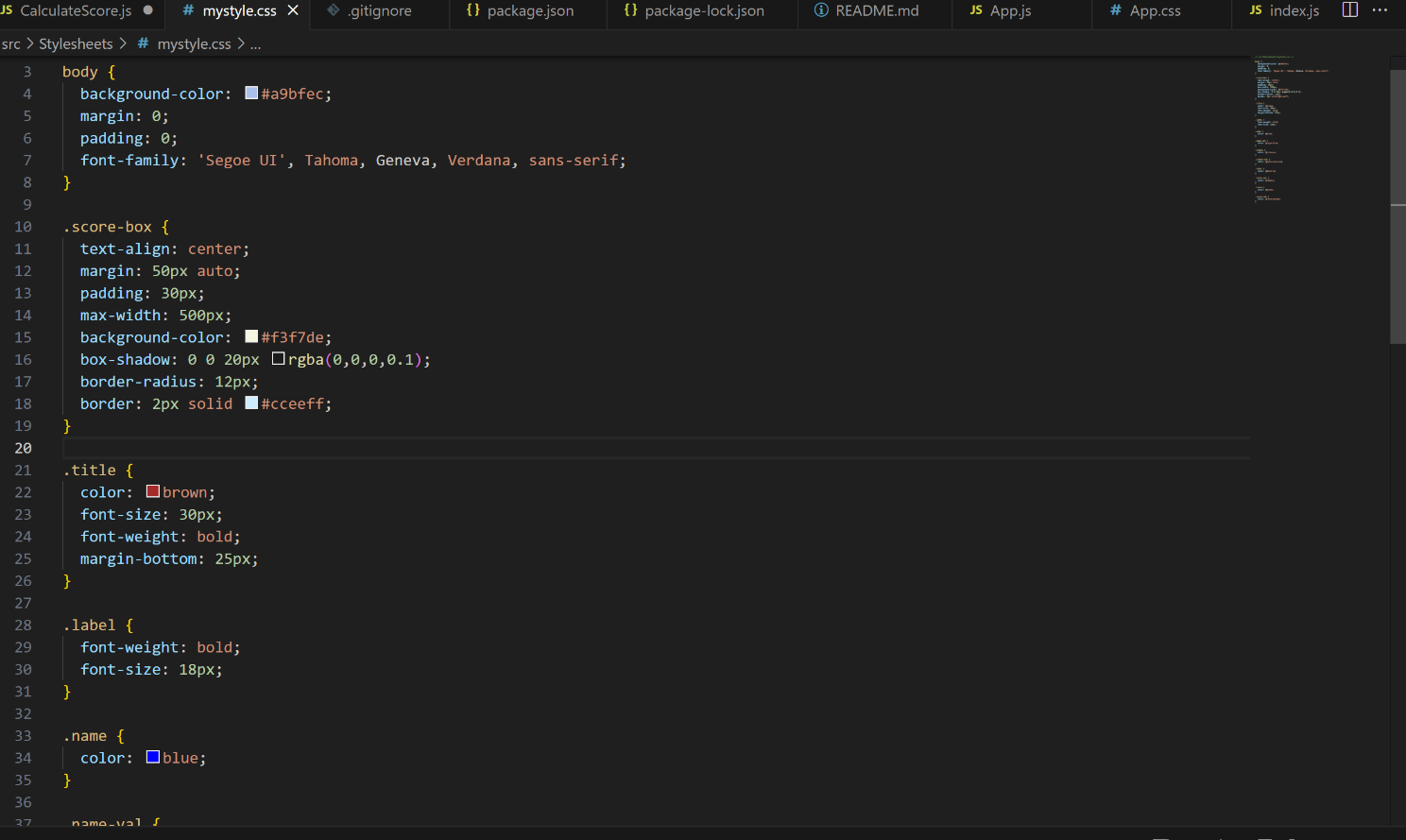
**• *Explain function component***  
A function component is a simple JavaScript function that returns JSX. It is preferred for most modern React apps and can use React hooks like useState and useEffect to manage state and side effects.

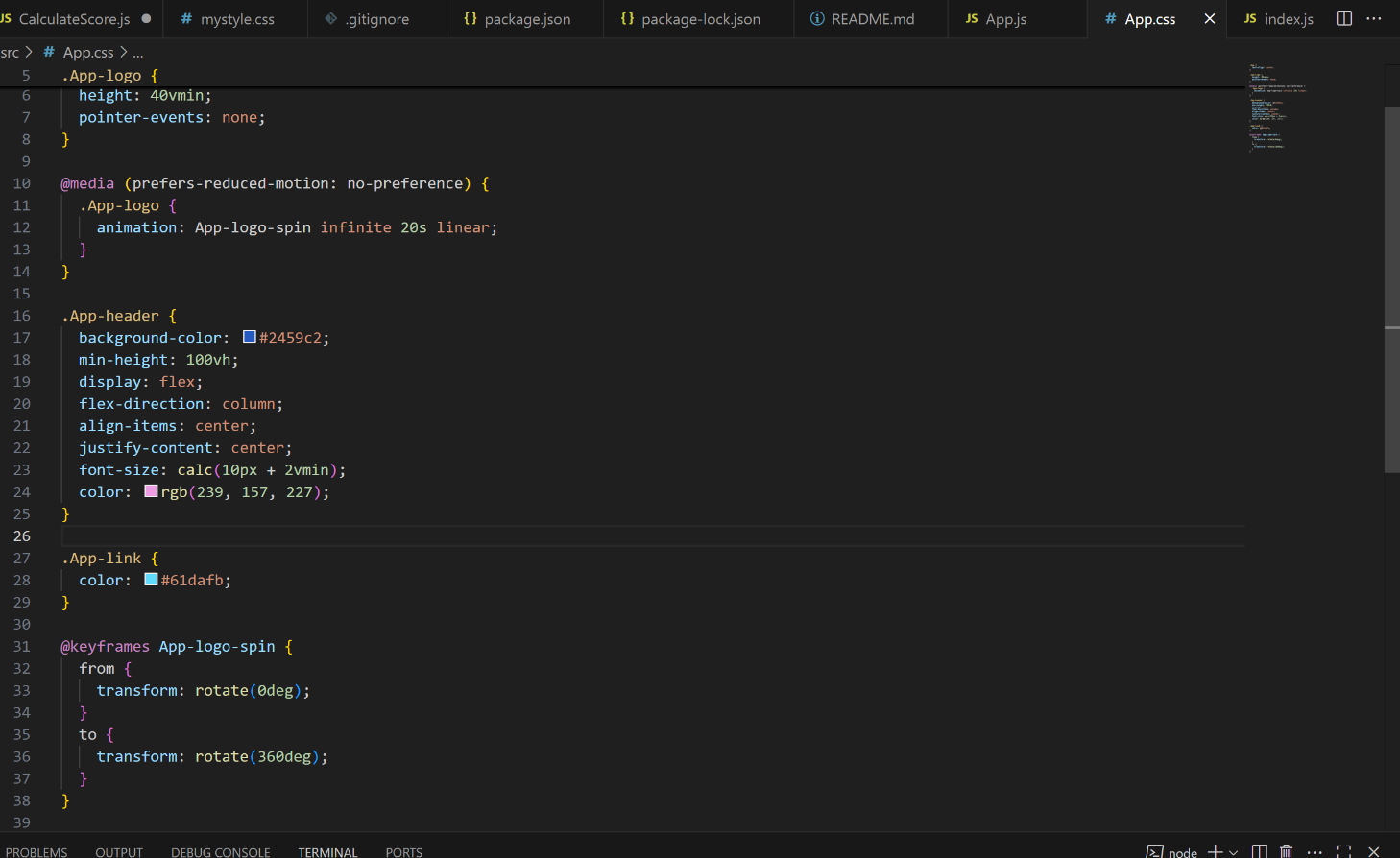
**• *Define component constructor***  
The constructor in a class component is a special method used to initialize state and bind methods. It’s called before the component mounts and usually contains super(props) to access the parent class’s functionality.

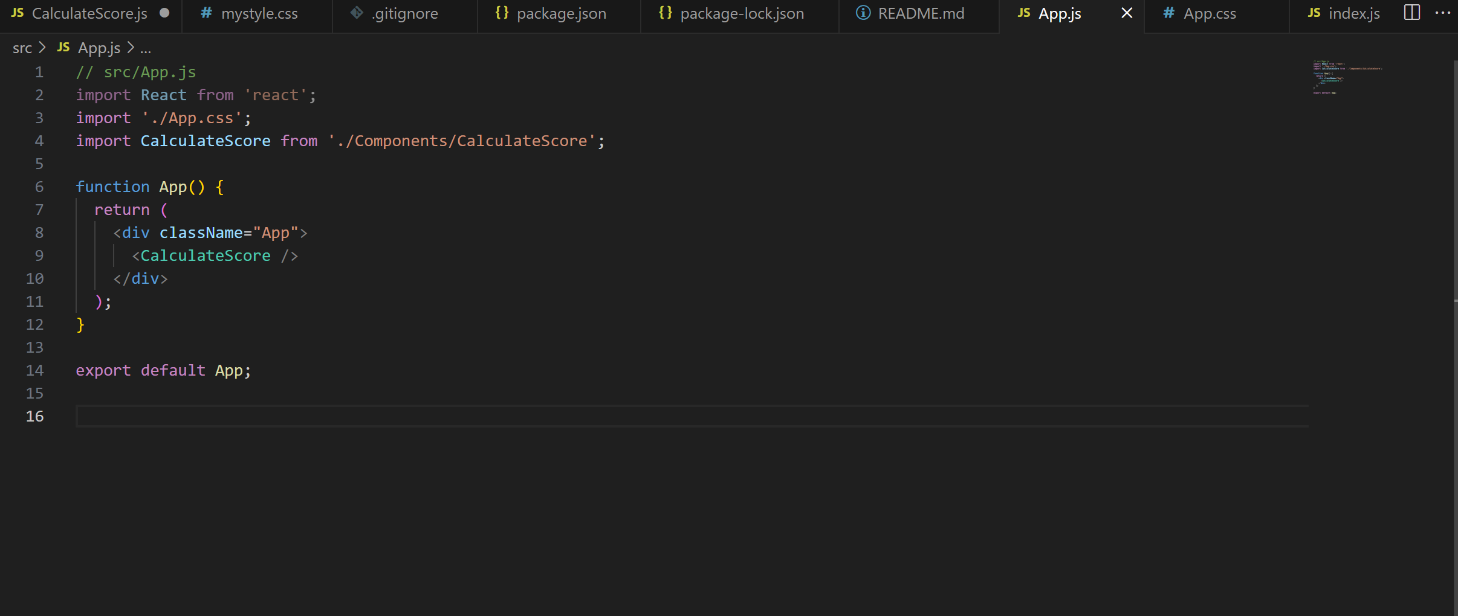
**• *Define render() function***  
The render() function is a required method in class components that returns the JSX to be displayed on the screen. React calls this method to know what to render in the UI for that component.

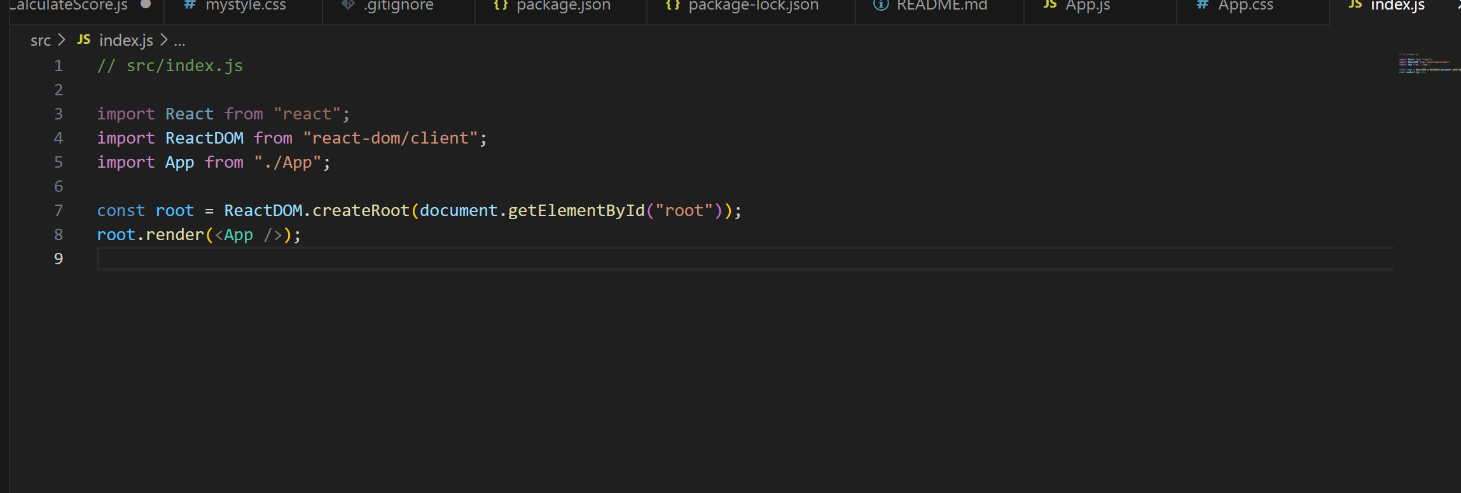
**Create a react app for Student Management Portal named scorecalculatorapp and create a function component named “CalculateScore” which will accept Name, School, Total and goal in order to calculate the average score of a student and display the same.**

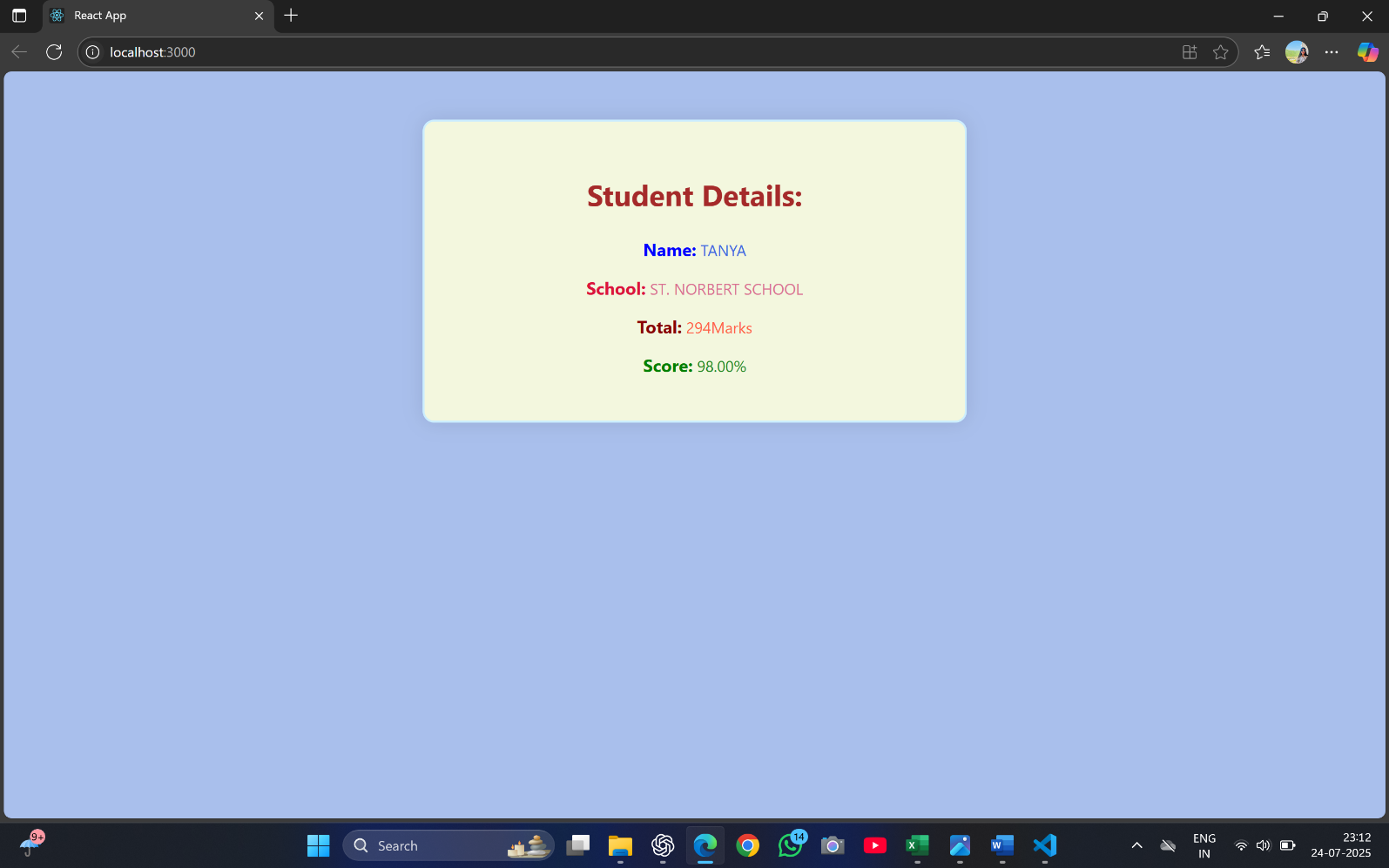
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