1. Explain React Components

React components are independent, reusable pieces of UI in a React application. They return JSX, which describes what should appear on the screen. Components can receive props and manage state, making them powerful and modular building blocks.

2. Identify the Differences Between Components and JavaScript Functions

- React Components return JSX and are used for UI.  
- JavaScript Functions return values like numbers or strings and are used for general logic.  
- Components can use state and lifecycle methods, while functions cannot.  
- Components are integrated with the React DOM and start with a capital letter.

3. Identify the Types of Components

There are two main types of components:  
- Function Components: Written using JavaScript functions and can use hooks.  
- Class Components: Written using ES6 class syntax, can manage state and lifecycle methods.

4. Explain Class Component

Class components extend React.Component and include a render() method. They can manage internal state and use lifecycle methods like componentDidMount and componentWillUnmount.

5. Explain Function Component

Function components are simpler and easier to write. They return JSX and can use React hooks such as useState and useEffect to handle state and side effects. They are preferred in modern React development.

6. Define Component Constructor

In class components, the constructor initializes state and binds methods. It’s called when the component is created and must call super(props) before accessing this.props.

7. Define render() Function

The render() method is required in class components and returns JSX. It is called automatically during mounting and updating and must not modify state or interact directly with the DOM.

Score Calculator App - Component Code

CalculateScore.js

import React from 'react';  
import '../Stylesheets/mystyle.css';  
  
function CalculateScore(props) {  
 const { name, school, total, score } = props;  
 const average = (total / score).toFixed(2);  
  
 return (  
 <div className="score-box">  
 <h2 className="maroon">Student Details</h2>  
  
 <p><span className="blue"><strong>Name:</strong> {name}</span></p>  
 <p><span className="red"><strong>School:</strong> {school}</span></p>  
 <p><span className="purple"><strong>Total Marks:</strong> {total}</span></p>  
 <p><span className="green"><strong>Score:</strong> {average}%</span></p>  
 </div>  
 );  
}  
  
export default CalculateScore;

mystyle.css

.score-box {  
 background-color: #f9f9f9;  
 padding: 20px;  
 border-radius: 10px;  
 width: 380px;  
 margin: 30px auto;  
 text-align: left;  
 font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;  
 box-shadow: 0 0 8px rgba(0, 0, 0, 0.15);  
}  
  
.score-box h2 {  
 text-align: center;  
 margin-bottom: 20px;  
}  
  
.maroon { color: maroon; }  
.blue { color: blue; }  
.red { color: red; }  
.purple { color: purple; }  
.green { color: green; }

App.js

import React from 'react';  
import './App.css';  
import CalculateScore from './Components/CalculateScore';  
  
function App() {  
 return (  
 <div className="App">  
 <CalculateScore   
 name="Ravi Kumar"   
 school="Greenwood High School"   
 total={425}   
 score={5}   
 />  
 </div>  
 );  
}  
  
export default App;

**Output:**



