Unit 5

Q.1) Create an application to implement class and functional component in ReactJS.

ClassComponent.js

```
import React, { Component } from "react";


class ClassComponent extends Component {
  constructor(props) {
   super(props);
   this.state = {
     message: "Hello from Class Component!",
   };


  updateMessage = () => {
   this.setState({ message: "Class Component Message Updated!" });
  };
  render() {
   return (
    <div
      style={{ border: "1px solid black", padding: "10px", margin: "10px" }}
    >
      <h2>{this.state.message}</h2>
      <button onClick={this.updateMessage}>Update Message</button>
    </div>
   );
  }
}
export default ClassComponent;
```

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FunctionComponent.js

```
import React, { useState } from 'react';

const FunctionComponent = () => {

const [message, setMessage] = useState('Hello from Functional Component!');

const updateMessage = () => {

  setMessage('Functional Component Message Updated!');

};

return (

  <div style={{ border: '1px solid black', padding: '10px', margin: '10px' }}>

    <h2>{message}</h2>

    <button onClick={updateMessage}>Update Message</button>

  </div>

);

};

export default FunctionComponent;
```

App.js

```
import React from 'react';

import './App.css';

import ClassComponent from './ClassComponent';

import FunctionComponent from './FunctionComponent';

function App() {

return (

  <div className="App">

    <h1>React Components Demo</h1>

    <ClassComponent />

    <FunctionComponent />

  </div>

);
```

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```
export default App;
```

App.css

```css
.App {
  text-align: center;
  font-family: Arial, sans-serif;
}


h1 {
  color: #4caf50;
}
button {
  background-color: #008cba;
  color: white;
  border: none;
  padding: 10px 15px;
  margin-top: 10px;
  cursor: pointer;
  border-radius: 5px;
}


button:hover {
  background-color: #005f73;
}
```

Index.js

```js
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
```

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```
import App from './App';

import reportWebVitals from './reportWebVitals';


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

root.render(

 <React.StrictMode>

  <App />

 </React.StrictMode>

);

reportWebVitals();
```
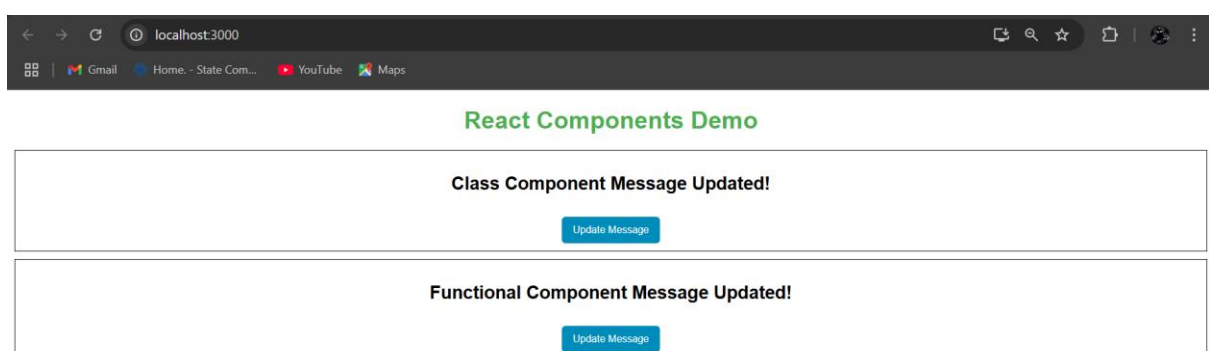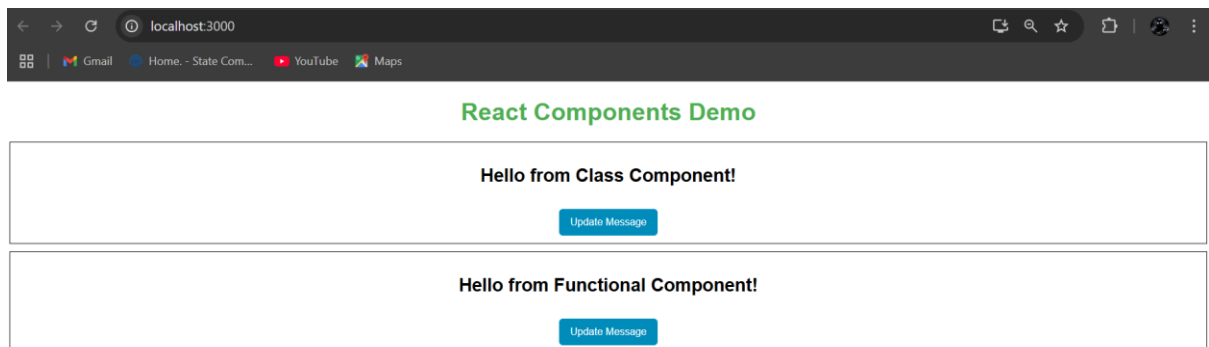
Ouptut :

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Q.2) Create and application in ReactJS to import and export the files.

Create components folder in src folder and create 4 files in it.

Header.js

```
import React from 'react';


const Header = () => {
  return (
    <header style={{ background: '#4caf50', color: 'white', padding: '10px' }}>
      <h1>React Import/Export Demo</h1>
    </header>
  );
};
export default Header;
```

Footer.js

```
import React from 'react';


const Footer = () => {
  return (
    <footer style={{ background: '#f1f1f1', color: '#333', padding: '10px', marginTop: '20px' }}>
      <p>Footer Section &copy; 2024</p>
    </footer>
  );
};
export default Footer;
```

Main.js

```
import React from 'react';
```

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```
const Main = () => {
  return (
    <main style={{ padding: '20px' }}>
      <p>Welcome to the React application demonstrating how to import and export
components!</p>
    </main>
  );
};
export default Main;
```

index.js

```
export { default as Header } from './Header';
export { default as Footer } from './Footer';
export { default as Main } from './Main';
```

App.js

```
import React from 'react';
import './App.css';
import { Header, Footer, Main } from './components';

function App() {
  return (
    <div className="App">
      <Header /> {/* Importing from grouped export */}
      <Main /> {/* Importing from grouped export */}
      <Footer /> {/* Importing from grouped export */}
    </div>
  );
}
export default App;
```

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index.js

```
import React from "react";

import ReactDOM from "react-dom/client";

import "./index.css";

import App from "./App";

import reportWebVitals from "./reportWebVitals";

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

root.render(

  <React.StrictMode>

    <App />

  </React.StrictMode>

);

reportWebVitals();
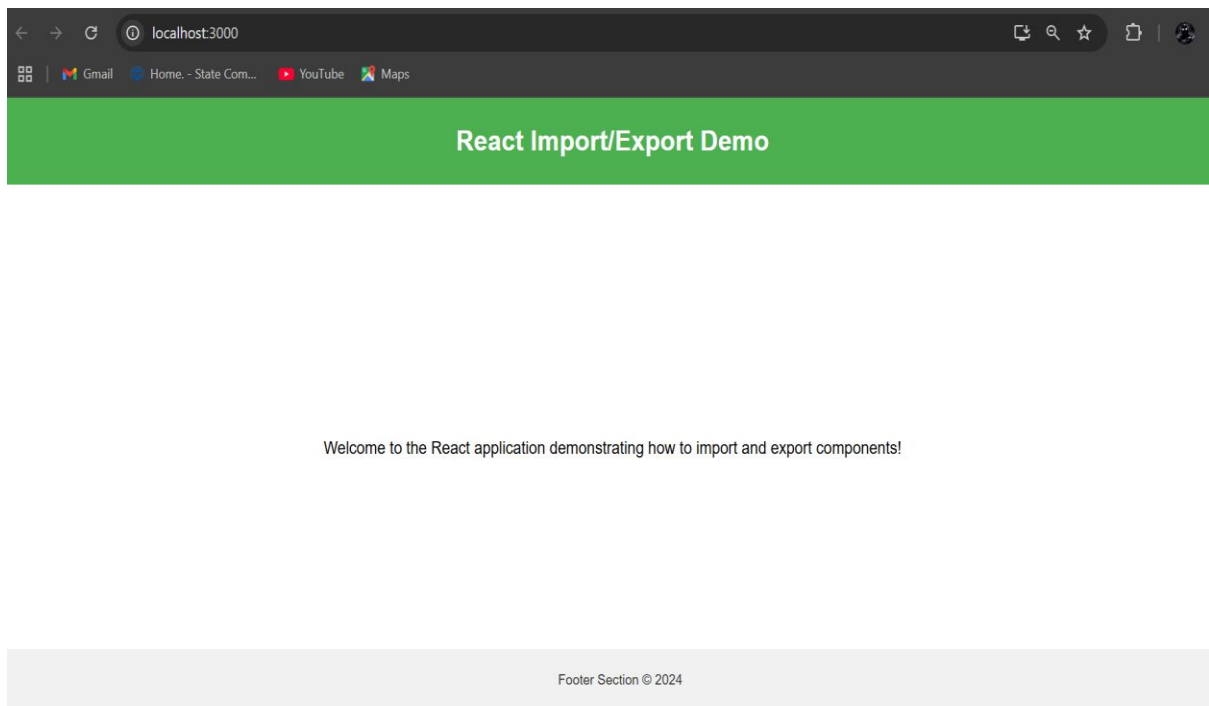```

**App.css**

```
.App {

  font-family: Arial, sans-serif;

  text-align: center;

  margin: 0;

  padding: 0;

}

header {

  text-align: center;

}

footer {

  position: fixed;

  bottom: 0;

  width: 100%;

}
```

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```
main {

  min-height: 80vh;

  display: flex;

  align-items: center;

  justify-content: center;

  font-size: 1.2rem;

}
```

Output :

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Q.3) Create an application to implement state and props.

Create a component folder inside src folder and add following two files in it.

ParentComponent.js

```
import React, { useState } from "react";

import ChildComponent from "./ChildComponent";


const ParentComponent = () => {

  const [count, setCount] = useState(0);

  const incrementCount = () => {

    setCount(count + 1);

  };


  return (

    <div style={{ border: "2px solid black", padding: "20px", margin: "20px" }}>

      <h2>Parent Component</h2>

      <p>Count in Parent Component: {count}</p>

      <button onClick={incrementCount}>Increment Count</button>

      {/* Pass count as a prop to the child component */}

      <ChildComponent count={count} />

    </div>

  );

};

export default ParentComponent;
```

ChildComponent.js

```
import React from 'react';

const ChildComponent = (props) => {

  return (

    <div style={{ border: '2px solid blue', padding: '20px', margin: '20px' }}>
```

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```jsx
      <h2>Child Component</h2>

      {/* Access the count passed via props */}

      <p>Count received from Parent: {props.count}</p>

    </div>

  );

};

export default ChildComponent;
```

App.js

```jsx
import React from 'react';

import './App.css';

import ParentComponent from './components/ParentComponent';

function App() {

  return (

    <div className="App">

      <h1>State and Props Demo</h1>

      <ParentComponent />

    </div>

  );

}

export default App;
```

index.js

```jsx
import React from "react";

import ReactDOM from "react-dom/client";

import "./index.css";

import App from "./App";

import reportWebVitals from "./reportWebVitals";

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

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```
root.render(

  <React.StrictMode>

    <App />

  </React.StrictMode>

);
reportWebVitals();
```

App.css
```css
.App {

  text-align: center;

  font-family: Arial, sans-serif;

  background-color: #f9f9f9;

  padding: 20px;

  min-height: 100vh;

}
button {

  background-color: #008cba;

  color: white;

  border: none;

  padding: 10px 20px;

  margin-top: 10px;

  cursor: pointer;

  border-radius: 5px;

  font-size: 1rem;

}

button:hover {

  background-color: #005f73;

  transform: scale(1.05);
```
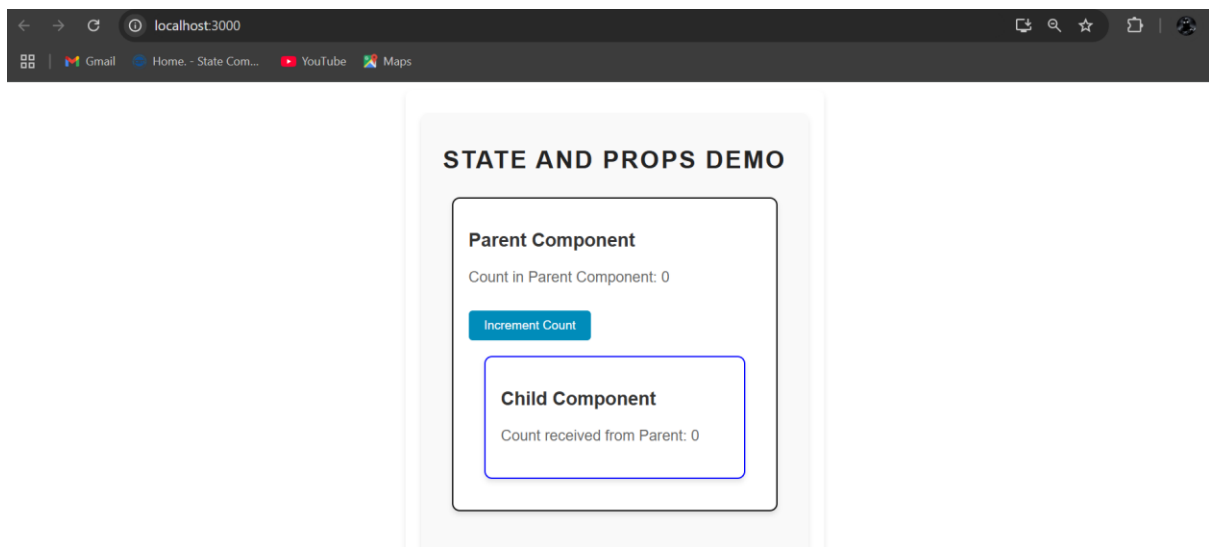
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```css
    transition: 0.3s ease;

}

div {

  margin: 10px auto;

  padding: 20px;

  max-width: 500px;

  background-color: #ffffff;

  border-radius: 10px;

  box-shadow: 0px 4px 6px rgba(0, 0, 0, 0.1);

  text-align: left;

}

div > h2 {

  font-size: 1.5rem;

  margin-bottom: 10px;

  color: #333333;

}


div > p {

  font-size: 1.2rem;

  color: #666666;

  line-height: 1.5;

}h1 {

  color: #222222;

  font-size: 2rem;

  margin-bottom: 30px;

  text-transform: uppercase;

  letter-spacing: 2px;

}
```
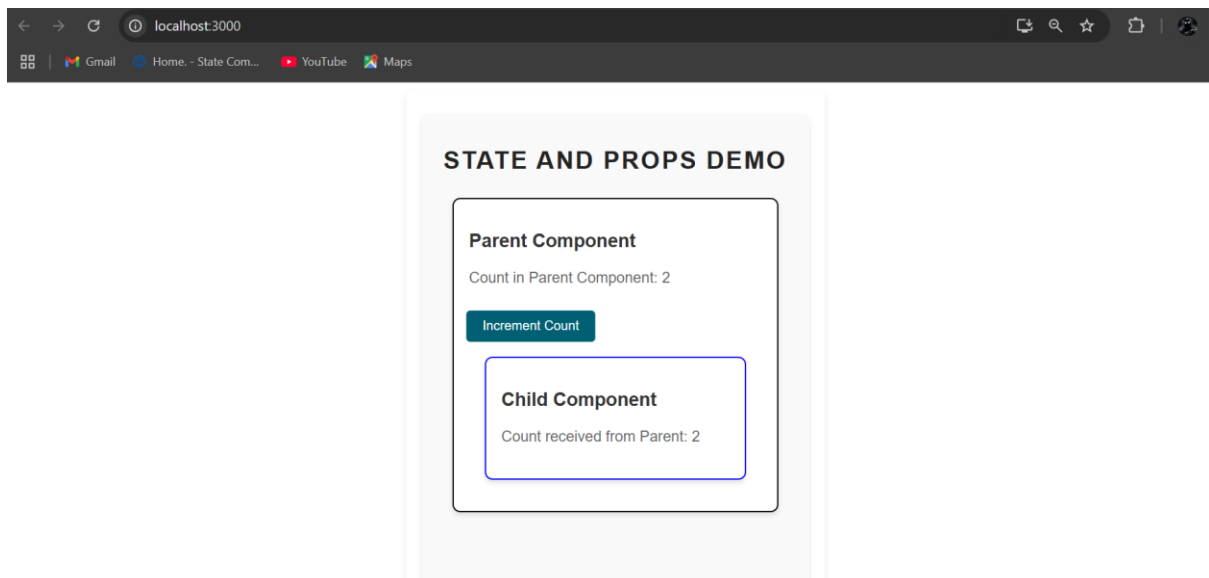
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Output :

After incrementing the count

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Q.4) Create an application in ReactJS to use DOM events.

Create components folder inside src folder and add

EventDemo.js

```
import React, { useState } from 'react';


const EventDemo = () => {
  const [bgColor, setBgColor] = useState('#ffffff');

  const [hoverText, setHoverText] = useState('Hover over me!');

  const [inputValue, setInputValue] = useState('');


  const handleButtonClick = () => {
    const randomColor = `#${Math.floor(Math.random() * 16777215).toString(16)}`;

    setBgColor(randomColor);
  };


  const handleMouseOver = () => {
    setHoverText('Mouse is over me!');
  };


  const handleMouseOut = () => {
    setHoverText('Hover over me!');
  };


  const handleInputChange = (event) => {
    setInputValue(event.target.value);
  };


  return (
    <div
```

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```
      style={{

        backgroundColor: bgColor,

        padding: '20px',

        borderRadius: '10px',

        textAlign: 'center',

        margin: '20px auto',

        maxWidth: '400px',

        boxShadow: '0px 4px 6px rgba(0, 0, 0, 0.1)',

      }}

    >

      <h2>React DOM Events Demo</h2>


      {/* Button click event */}
      <button
        style={{

          padding: '10px 20px',

          backgroundColor: '#4caf50',

          color: 'white',

          border: 'none',

          borderRadius: '5px',

          cursor: 'pointer',

          fontSize: '1rem',

        }}

        onClick={handleButtonClick}

      >

        Change Background Color

      </button>


      <hr style={{ margin: '20px 0' }} />
```

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```jsx
{/* Mouse over and out events */}
<p
  style={{ fontSize: '1.2rem', fontWeight: 'bold', color: '#333' }}
  onMouseOver={handleMouseOver}
  onMouseOut={handleMouseOut}
>
  {hoverText}
</p>

<hr style={{ margin: '20px 0' }} />

{/* Input change event */}
<div>
  <input
    type="text"
    placeholder="Type something..."
    value={inputValue}
    onChange={handleInputChange}
    style={{
      padding: '10px',
      borderRadius: '5px',
      border: '1px solid #ccc',
      fontSize: '1rem',
      marginBottom: '10px',
    }}
  />
  <p>Typed text: {inputValue}</p>
</div>
```

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```
      </div>
  );
};
export default EventDemo;
```

App.js

```javascript
import React from 'react';
import './App.css';
import EventDemo from './components/EventDemo';

function App() {
  return (
    <div className="App">
      <h1>React DOM Events Demo</h1>
      <EventDemo />
    </div>
  );
}
export default App;
```
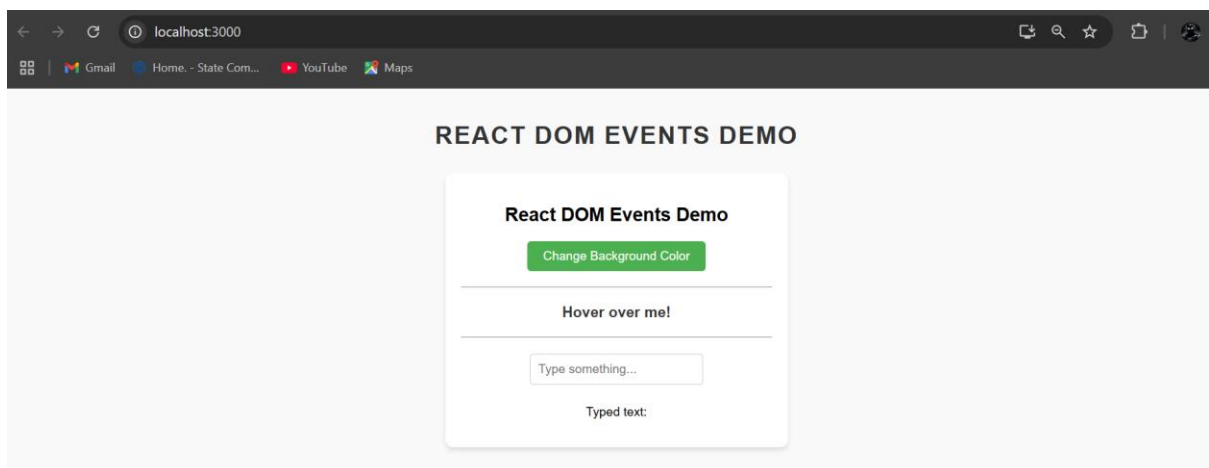
App.css

```css
.App {
  text-align: center;
  font-family: Arial, sans-serif;
  background-color: #f9f9f9;
  padding: 20px;
  min-height: 100vh;
}
```

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```
h1 {

 font-size: 2rem;

 margin-bottom: 30px;

 color: #333;

 text-transform: uppercase;

 letter-spacing: 1.5px;

}
```
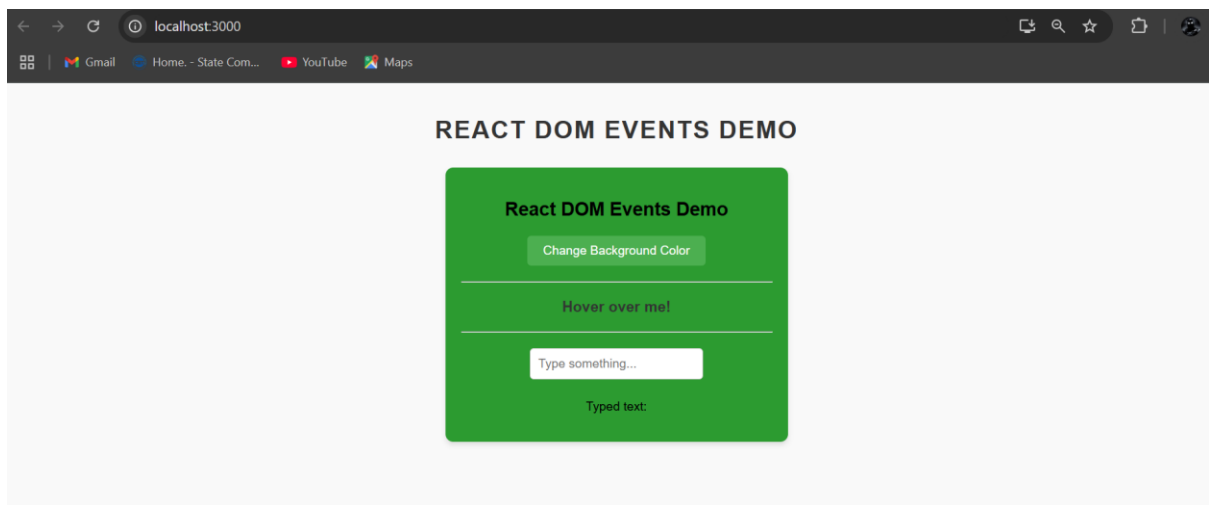
index.js

```
import React from "react";

import ReactDOM from "react-dom/client";

import "./index.css";

import App from "./App";

import reportWebVitals from "./reportWebVitals";

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

root.render(

 <React.StrictMode>

   <App />

 </React.StrictMode>

);

reportWebVitals();
```
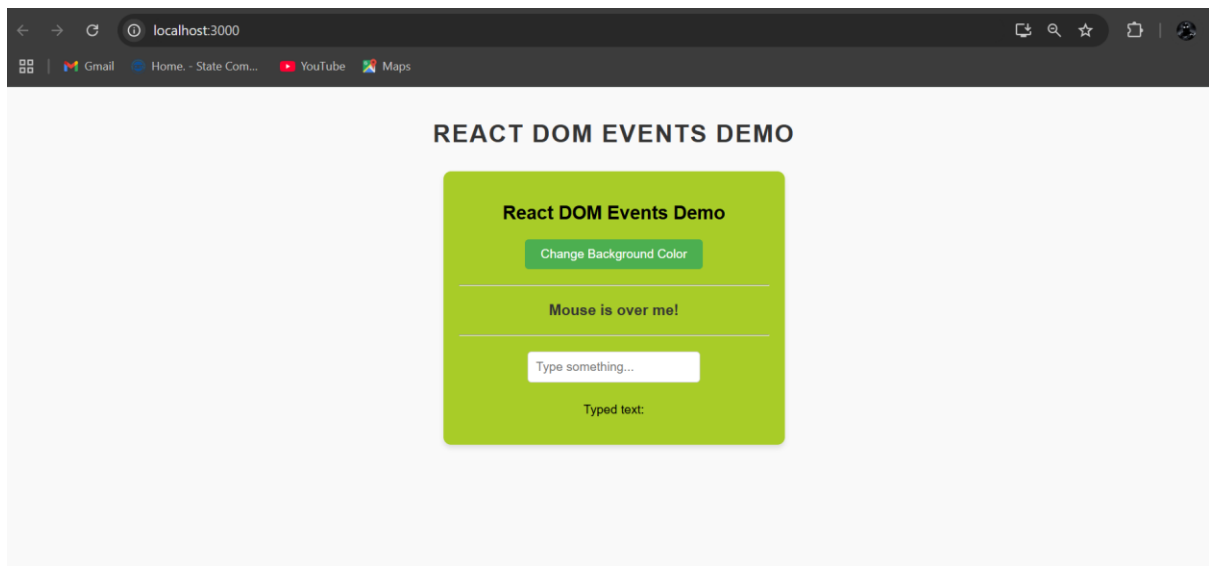
Output :

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Change background color of the div

Mouse hovering

Type something in text area

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