

## Experiment 13

### React JS Exercises

**Code:**

#### **JSX COMPONENTS:**

##### **1) App.JSX**

```
import React from "react";
import {
  HelloJSX,
  MessageComponent,
  FruitList,
  StyledMessage,
  SumOfSquares,
  Greeting,
  CurrentDay,
  IsPrime,
  TemperatureConverter,
  ReverseString,
  RandomNumber,
  LeapYearChecker,
  UserGreeting,
} from "../Components.js"; // Create a new file for components

function App() {
  return (
    <div>
      <HelloJSX />
      <MessageComponent />
      <FruitList />
      <StyledMessage />
      <SumOfSquares a={3} b={4} />
      <Greeting isMorning={true} />
      <CurrentDay />
      <IsPrime number={7} />
      <TemperatureConverter />
    </div>
  );
}
```

```
<ReverseString text="React" />
<RandomNumber />
<LeapYearChecker year={2024} />
<UserGreeting firstName="John" lastName="Doe" />
</div>
);
}

export default App;
```

## 2) Components.JSX

```
import React from "react";
import "./styles.css";

export const HelloJSX = () => <h1 className="heading">Hello, React!</h1>;

const message = "Welcome to React!";
export const MessageComponent = () => <h1
className="heading">{message}</h1>;

export const FruitList = () => {
  const fruits = ["Apple", "Banana", "Cherry"];
  return (
    <ul className="list">
      {fruits.map((fruit, index) => (
        <li key={index} className="list-item">
          {fruit}
        </li>
      ))}
    </ul>
  );
};

export const StyledMessage = () => {
  const style = { color: "blue", fontSize: "20px", fontWeight: "bold" };
  return <p style={style}>This is a styled message!</p>;
};

export const SumOfSquares = ({ a, b }) => (
  <p className="result">Sum of squares: {a * a + b * b}</p>
);
```

```
);
```

```
export const Greeting = ({ isMorning }) => (  
  <h1 className="greeting">{isMorning ? "Good Morning" : "Good Evening"}</h1>  
);
```

```
export const CurrentDay = () => {  
  const days = [  
    "Sunday",  
    "Monday",  
    "Tuesday",  
    "Wednesday",  
    "Thursday",  
    "Friday",  
    "Saturday",  
  ];  
  return <h1 className="day">Today is {days[new Date().getDay()]}</h1>;  
};
```

```
export const IsPrime = ({ number }) => {  
  const isPrime = (num) => {  
    if (num < 2) return false;  
    for (let i = 2; i <= Math.sqrt(num); i++) {  
      if (num % i === 0) return false;  
    }  
    return true;  
  };  
  return (  
    <p className="result">  
      {number} is {isPrime(number) ? "a prime number" : "not a prime number"}.  
    </p>  
  );  
};
```

```
export class TemperatureConverter extends React.Component {  
  constructor(props) {  
    super(props);  
    this.state = { temp: "", converted: "" };  
  }
```

```
convertToFahrenheit = () => {
  this.setState({ converted: (this.state.temp * 9) / 5 + 32 });
};
convertToCelsius = () => {
  this.setState({ converted: ((this.state.temp - 32) * 5) / 9 });
};

handleChange = (e) => {
  this.setState({ temp: e.target.value });
};

render() {
  return (
    <div className="converter">
      <input
        type="number"
        value={this.state.temp}
        onChange={this.handleChange}
        className="input"
      />
      <button onClick={this.convertToFahrenheit} className="button">
        To Fahrenheit
      </button>
      <button onClick={this.convertToCelsius} className="button">
        To Celsius
      </button>
      <p className="result">Converted Temperature: {this.state.converted}</p>
    </div>
  );
}
}

export const ReverseString = ({ text }) => {
  const reversed = text.split("").reverse().join("");
  return (
    <p className="result">
      Reversed: {reversed},{ " "}
      {text === reversed ? "Palindrome" : "Not a Palindrome"}
    </p>
  );
}
```

```
};

export const RandomNumber = () => {
  const [number, setNumber] = React.useState(null);
  return (
    <div className="random">
      <button
        onClick={() => setNumber(Math.floor(Math.random() * 100) + 1)}
        className="button"
      >
        Generate Number
      </button>
      {number} && <p className="result">Random Number: {number}</p>
    </div>
  );
};

export const LeapYearChecker = ({ year }) => {
  const isLeapYear = (year % 4 === 0 && year % 100 !== 0) || year % 400 === 0;
  return (
    <p className="result">
      {year} is {isLeapYear ? "a Leap Year" : "not a Leap Year"}.
    </p>
  );
};

export class UserGreeting extends React.Component {
  render() {
    return (
      <h1 className="greeting">
        Hello, {this.props.firstName} {this.props.lastName}!
      </h1>
    );
  }
}
```

## CSS STYLING:

```
.heading {
  color: darkblue;
  text-align: center;
}
```

```
.list {  
  list-style-type: none;  
  padding: 0;  
}  
.list-item {  
  background: lightgray;  
  padding: 5px;  
  margin: 5px;  
  border-radius: 5px;  
}
```

```
.result {  
  font-weight: bold;  
  color: green;  
}
```

```
.button {  
  padding: 8px 12px;  
  margin: 5px;  
  border: none;  
  background: blue;  
  color: white;  
  cursor: pointer;  
}
```

```
.greeting {  
  font-size: 24px;  
  font-weight: bold;  
}
```

```
.converter {  
  text-align: center;  
}
```

```
.input {  
  padding: 5px;  
  margin: 5px;  
}
```

Output:

Hello, React!  
Welcome to React!

- Apple
- Banana
- Cherry

This is a styled message!

Sum of squares: 25

Good Morning

Today is Tuesday

7 is a prime number.

To Fahrenheit

To Celsius

Converted Temperature: 390.2

Reversed: tcaeR, Not a Palindrome

Generate Number

Random Number: 58

2024 is a Leap Year.

Hello, John Doe!