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Web Programming Lab (BCSE203E)
LAB – 13
JSX – Intro

1.
(i) Create a React component that displays "Hello, React!" inside an <h1> tag without JSX.
(ii) Modify the above code and solve using React JSX
(iii) Modify the above component to display a message stored in a variable.

2. Create a component that renders a list of three fruits dynamically.

3. Create a component that displays a styled message using inline CSS in JSX.

4. Create a component that displays the sum of squares of two numbers inside a <p> tag.

5. Create a component that displays "Good Morning" if isMorning is true, otherwise display
"Good Evening."

6. Create a React component that displays the current day of the week dynamically using JavaScript's

7. Create a React component that checks whether a given number is prime and displays the
result.

8. Create a React class component called TemperatureConverter that allows the user to convert a temperature from Celsius to Fahrenheit and Fahrenheit to Celsius.

9. Create a component that takes a string (e.g., "React") and displays its reverse ("tcaeR") inside a <p> tag and display whether the string is palindrome or not

10. Create a button that, when clicked, generates and displays a random number between 1 and 100.

11. Check If a Year is a Leap Year: Take a year (e.g., 2024) as a variable and display whether it is a leap year or not

12. Create a React class component named UserGreeting that takes two props: firstName and
lastName. Inside the render() method, display a greeting message with the full name of the user in the following format:
"Hello, [First Name] [Last Name]!"

Code:

Q1_1.jsx

```
import React from "react";


const Q1_1 = () => {
    return React.createElement("h1", null, "1.1) Hello, React!");
};


export default Q1_1;
```

Q1_2.jsx

```
import React from "react";


const Q1_2 = () => {
    return <h1>1.2) Hello, React!</h1>;
};


export default Q1_2;
```

Q1_3.jsx

```
import React from "react";

const Q1_3 = () => {
    const message = "1.3) Welcome to JSX!";
    return <h1>{message}</h1>;
};

export default Q1_3;
```

Q2.jsx

```
import React from "react";
const Q2 = () => {
    const fruits = ["Apple", "Banana", "Orange"];
    return (
        <>
            <p>Q2</p>
            <ul>
                {fruits.map((fruit, index) => (
                    <li key={index}>{fruit}</li>
                ))}
            </ul>
        </>
    );
};

export default Q2;
```

Q3.jsx

```
import React from "react";


const Q3 = () => {
    const style = { color: "red", fontSize: "20px", fontWeight: 
"bold" };
    return <p style={style}>3) This is a styled message.</p>;
};


export default Q3;
```

Q4.jsx

```
import React from "react";


const Q4 = ({ a, b }) => {
    const sum = a * a + b * b;
    return <p>4) Sum of squares: {sum}</p>;
};


export default Q4;
```

Q5.jsx

```
import React from "react";


const Q5 = ({ isMorning }) => {
    return <h1>5) {isMorning ? "Good Morning" : "Good 
Evening"}</h1>;
};


export default Q5;
```

Q6.jsx

```
import React from "react";

const Q6 = () => {
    const days = [
        "Sunday",
        "Monday",
        "Tuesday",
        "Wednesday",
        "Thursday",
        "Friday",
        "Saturday",
    ];
    const today = new Date().getDay();
    return <h1>6) Today is {days[today]}</h1>;
};

export default Q6;
```

Q7.jsx

```
import React from "react";

const Q7 = ({ 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>
            7)  
            {number} is{" "}
            {isPrime(number) ? "a prime number" : "not a prime
number"}.
        </p>
    );
};

export default Q7;
```

Q8.jsx

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

class Q8 extends Component {
    constructor(props) {
        super(props);
        this.state = { celsius: "", fahrenheit: "" };
    }

    convertToCelsius = (f) => ((f - 32) * 5) / 9;
    convertToFahrenheit = (c) => (c * 9) / 5 + 32;

    handleCelsiusChange = (e) => {
        this.setState({
            celsius: e.target.value,
            fahrenheit: this.convertToFahrenheit(e.target.value),
        });
    };
```

```
    handleFahrenheitChange = (e) => {
        this.setState({
            fahrenheit: e.target.value,
            celsius: this.convertToCelsius(e.target.value),
        });
    };

    render() {
        return (
            <div>
                <p>8)</p>
                <input
                    type="number"
                    value={this.state.celsius}
                    onChange={this.handleCelsiusChange}
                    placeholder="Celsius"
                />
                <input
                    type="number"
                    value={this.state.fahrenheit}
                    onChange={this.handleFahrenheitChange}
                    placeholder="Fahrenheit"
                />
            </div>
        );
    }
}

export default Q8;
```

Q9.jsx

```
import React from "react";


const Q9 = ({ text }) => {
    const reversed = text.split("").reverse().join("");
    const isPalindrome = text.toLowerCase() ===
reversed.toLowerCase();


    return (
        <div>
            <p>9) Reversed: {reversed}</p>
            <p>
                {isPalindrome ? "It is a palindrome" : "It is not a
palindrome"}
            </p>
        </div>
    );
};


export default Q9;
```

Q10.jsx

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


const Q10 = () => {
    const [number, setNumber] = useState(null);


    const generateNumber = () => {
        setNumber(Math.floor(Math.random() * 100) + 1);
    };
```

```
    return (
        <div>
            <button onClick={generateNumber}>10) Generate
Number</button>
            {number && <p>Random Number: {number}</p>}
        </div>
    );
};

export default Q10;
```

Q11.jsx

```
import React from "react";

const Q11 = ({ year }) => {
    const isLeapYear = (year % 4 === 0 && year % 100 !== 0) || year
% 400 === 0;
    return (
        <p>
            11) {year} is {isLeapYear ? "a leap year" : "not a leap
year"}.
        </p>
    );
};

export default Q11;
```

Q12.jsx

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

class Q12 extends Component {
    render() {
        const { firstName, lastName } = this.props;
        return (
            <h1>
                12) Hello, {firstName} {lastName}!
            </h1>
        );
    }
}

export default Q12;
```

App.jsx

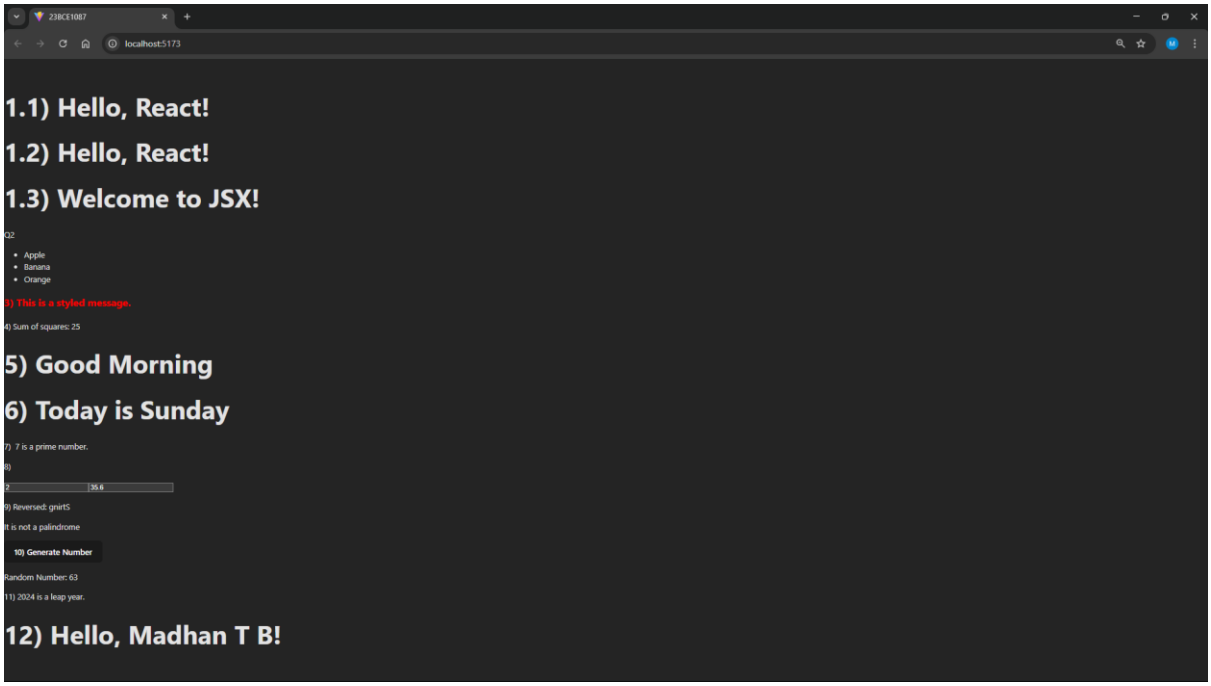
```
import React from "react";
import Q1_1 from "./solutions/Q1_1";
import Q1_2 from "./solutions/Q1_2";
import Q1_3 from "./solutions/Q1_3";
import Q2 from "./solutions/Q2";
import Q3 from "./solutions/Q3";
import Q4 from "./solutions/Q4";
import Q5 from "./solutions/Q5";
import Q6 from "./solutions/Q6";
import Q7 from "./solutions/Q7";
import Q8 from "./solutions/Q8";
import Q9 from "./solutions/Q9";
```

```
import Q10 from "./solutions/Q10";
import Q11 from "./solutions/Q11";
import Q12 from "./solutions/Q12";

function App() {
    return (
        <div>
            <Q1_1 />
            <Q1_2 />
            <Q1_3 />
            <Q2 />
            <Q3 />
            <Q4 a={3} b={4} />
            <Q5 isMorning={true} />
            <Q6 />
            <Q7 number={7} />
            <Q8 />
            <Q9 text="String" />
            <Q10 />
            <Q11 year={2024} />
            <Q12 firstName="Madhan" lastName="T B" />
        </div>
    );
}

export default App;
```

Output:


23BCE1087
localhost:5173
1.1) Hello, React!
1.2) Hello, React!
1.3) Welcome to JSX!
Q2
Apple
Banana
Orange
3) This is a styled message.
4) Sum of squares: 25
5) Good Morning
6) Today is Sunday
7) 7 is a prime number.
8)
9) Reversed: gnirtS
It is not a palindrome
10) Generate Number
Random Number: 63
11) 2024 is a leap year.
12) Hello, Madhan T B!