**Exercise 11**

**Objectives:**

1. **Explain React events**

React events are **JavaScript events** that respond to user actions like clicks, typing, or form submissions. They work similarly to browser events but are **wrapped in React’s SyntheticEvent system**. React events are **cross-browser compatible** and normalized for consistent behavior. Common events include onClick, onChange, onSubmit, etc. Events in React can trigger state changes, function calls, or UI updates dynamically.

1. **Explain about event handlers**

Event handlers are **functions that execute in response to events**. In React, they are typically attached using JSX attributes like onClick={handleClick}. They allow developers to manage user interactions such as form inputs or button clicks. Event handlers can be arrow functions or class methods, and may require this binding. They can call multiple functions or update state based on the event.

1. **Define Synthetic event**

A **SyntheticEvent** is a **wrapper around the browser’s native event** in React. It ensures **consistent behavior** across all browsers. Synthetic events combine the best of native events and React’s internal system. They provide access to standard event methods like preventDefault() and stopPropagation(). React reuses SyntheticEvent objects for performance, so you should call event.persist() if needed.

1. **Identify React event naming convention**

React uses **camelCase** naming for event handlers (e.g., onClick, onChange). This is different from HTML, which uses lowercase like onclick. The handler function name can be anything but must be passed as a reference (e.g., {handleClick}). Event attributes are written inside the JSX tag like <button onClick={handleClick}>. React events must be passed as functions, not strings (unlike traditional HTML).

**Hands On Practice**

1. **Create a React Application “eventexamplesapp” to handle various events of the form elements in HTML.**

npx create-react-app eventexamplesapp

1. **App consist of these:**

* **Create “Increment” button to increase the value of the counter and “Decrement” button to decrease the value of the counter. The “Increase” button should invoke multiple methods.** 
  + **To increment the value**
  + **Say Hello followed by a static message.**
* **Create a button “Say Welcome” which invokes the function which takes “welcome” as an argument.**
* **Create a button which invokes synthetic event “OnPress” which display “I was clicked”**
* **Create a “CurrencyConvertor” component which will convert the Indian Rupees to Euro when the Convert button is clicked.**
* **Handle the Click event of the button to invoke the handleSubmit event and handle the conversion of the euro to rupees.**

**EventExamples.js**

import React from 'react';

class EventExamples extends React.Component {

  constructor(props) {

    super(props);

    this.state = {

      count: 0,

      rupees: '',

      converted: '',

      currency: 'EUR'

    };

    this.handleIncrement = this.handleIncrement.bind(this);

    this.sayHello = this.sayHello.bind(this);

    this.handleWelcome = this.handleWelcome.bind(this);

    this.handleSubmit = this.handleSubmit.bind(this);

  }

  handleIncrement() {

    this.setState(prevState => ({ count: prevState.count + 1 }));

    this.sayHello();

  }

  handleDecrement = () => {

    this.setState(prevState => ({ count: prevState.count - 1 }));

  }

  sayHello() {

    alert("Hello! Counter Updated!");

  }

  handleWelcome(message) {

    alert(message);

  }

  handleOnPress = () => {

    alert("I was clicked");

  }

  handleInputChange = (e) => {

    this.setState({ rupees: e.target.value });

  }

  handleCurrencyChange = (e) => {

    this.setState({ currency: e.target.value });

  }

  handleSubmit(e) {

    e.preventDefault();

    const { rupees, currency } = this.state;

    const rateMap = {

      EUR: 90,

      USD: 83,

      GBP: 105,

      YEN: 0.58

    };

    const rate = rateMap[currency];

    const converted = (parseFloat(rupees) / rate).toFixed(2);

    this.setState({ converted });

  }

  render() {

    const { rupees, currency, converted } = this.state;

    return (

      <div style={{ padding: '20px', fontFamily: 'Arial' }}>

        <h2>Event Handling Examples</h2>

        <p>Counter: {this.state.count}</p>

        <button onClick={this.handleIncrement}>Increment</button>

        <button onClick={this.handleDecrement} style={{ marginLeft: '10px' }}>Decrement</button>

        <hr />

        <button onClick={() => this.handleWelcome("Welcome to React Events!")}>Say Welcome</button>

        <hr />

        <button onClick={this.handleOnPress}>OnPress (Synthetic Event)</button>

        <hr />

        <h3>Currency Converter (INR ➜ Select Currency)</h3>

        <form onSubmit={this.handleSubmit}>

          <input

            type="number"

            placeholder="Enter amount in ₹"

            value={rupees}

            onChange={this.handleInputChange}

          />

          <select value={currency} onChange={this.handleCurrencyChange} style={{ margin: '0 10px' }}>

            <option value="EUR">Euro (€)</option>

            <option value="USD">US Dollar ($)</option>

            <option value="GBP">British Pound (£)</option>

            <option value="YEN">Japanese Yen (¥)</option>

          </select>

          <button type="submit">Convert</button>

        </form>

        {converted && (

          <p>

            Converted Amount in {currency}: <strong>{converted}</strong>

          </p>

        )}

      </div>

    );

  }

}

export default EventExamples;

**App.js**

**import React from 'react';**

**import EventExamples from './EventExamples';**

**function App() {**

**return (**

**<div className="App">**

**<EventExamples />**

**</div>**

**);**

**}**

**export default App;**

**Output:**

**A screenshot of a computer

AI-generated content may be incorrect.**