**React HOL-2**

**Explain React Components**

**React components** are the building blocks of a React application. Each component represents a part of the user interface (UI). Components let you split the UI into independent, reusable pieces.

* Components **accept inputs** called **props**
* They **return elements** that describe what should appear on the screen
* Components can be either **class-based** or **function-based**

**Identify the differences between components and JavaScript functions**

|  |  |  |
| --- | --- | --- |
| **Feature** | **React Components** | **JavaScript Functions** |
| Purpose | Build and render UI | Perform logic or computation |
| Return Value | Returns JSX (UI elements) | Returns a value (number, string, etc.) |
| Used In | React environment | Any JavaScript environment |
| Lifecycle Methods | Only in class components | Not applicable |
| React Features (e.g., Hooks) | Available in function components | Not available |

**Identify the types of components**

There are mainly two types of React components:

1. **Class Components**
2. **Function Components**

Additionally, components can be categorized as:

* **Presentational (Stateless)**: Focused on how things look
* **Container (Stateful)**: Focused on how things work (logic and data handling)

**Explain class component**

A **Class Component** is a React component defined using an ES6 JavaScript class that extends React.Component.

#### **Key Features:**

* Has access to **lifecycle methods** (e.g., componentDidMount)
* Uses this.state for internal state management
* Uses render() method to return JSX

**Explain function component**

A **Function Component** is a simpler way to write components using JavaScript functions.

**Key Features:**

* Easier to read and write
* Can use **React Hooks** (like useState, useEffect) for state and lifecycle logic
* More concise than class components

**Define Component Constructor**

In a **class component**, the constructor() method is a special function used to:

* Initialize **state**
* Bind **event handlers** to the class context

**Define render() function**

The render() function is required in class components. It tells React what to display on the screen.

* The render() method **returns JSX**
* React calls render() **whenever the component’s state or props change**

**App.jsx**

import Home from './Components/Home';

import About from './Components/About';

import Contact from './Components/Contact';

import './App.css';

function App() {

return (

<div className="container">

<Home/>

<About/>

<Contact/>

</div>

)

}

export default App;

**Home.jsx**

import React, {Component} from "react";

class Home extends Component {

render(){

return (

<div>

<h3>Welcome to the Home Page of Student Management Portal</h3>

</div>

)

}

}

export default Home;

**About.jsx**

import React, {Component} from "react";

class About extends Component {

render(){

return (

<div>

<h3>Welcome to the About Page of Student Management Portal</h3>

</div>

)

}

}

export default About;

**Contact.jsx**

import React, {Component} from "react";

class Contact extends Component {

render(){

return (

<div>

<h3>Welcome to the Contact Page of Student Management Portal</h3>

</div>

)

}

}

export default Contact;

**Output**

A screenshot of a computer

AI-generated content may be incorrect.