### Explain React Components

* React components are **reusable building blocks** of a user interface.
* Each component defines **how a part of the UI should appear and behave**.
* Components can be nested, passed data via props, and manage their own state.

### 🔍 Differences Between Components and JavaScript Functions

| **Feature** | **React Component** | **JavaScript Function** |
| --- | --- | --- |
| Purpose | Renders UI | Performs logic or computation |
| Return | JSX (React elements) | Primitive values or objects |
| Lifecycle | Has lifecycle (in class or via hooks) | No lifecycle |
| State | Can manage state | No built-in state |
| Usage | <Component /> in JSX | functionName() in JS |

### 🧩 Types of Components

React supports two main types:

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

Other patterns include:

* Higher-Order Components (HOC)
* Render Props
* Controlled vs Uncontrolled Components

### 🏛️ Explain Class Component

* A class component is an ES6 class that **extends** React.Component.
* It must include a render() method to return JSX.
* It can manage **state** and use **lifecycle methods** like componentDidMount().

class Welcome extends React.Component {

render() {

return <h1>Hello, {this.props.name}</h1>;

}

}

### 🧠 Explain Function Component

* A function component is a **JavaScript function** that returns JSX.
* It can use **React Hooks** (like useState, useEffect) to manage state and side effects.
* Preferred for simplicity and performance.

function Welcome(props) {

return <h1>Hello, {props.name}</h1>;

}

### 🛠️ Define Component Constructor

* The constructor is a **special method** in class components.
* Used to **initialize state** and **bind event handlers**.
* Must call super(props) to access this.props.

constructor(props) {

super(props);

this.state = { count: 0 };

}

### 🖼️ Define render() Function

* The render() method is **mandatory** in class components.
* It returns the **JSX** that defines the UI.
* Called automatically when state or props change.

render() {

return <h1>Welcome to React!</h1>;

}