React Components - Detailed Explanation

**1) Explain React Components**

React components are the building blocks of React applications. They are reusable, independent pieces of UI that return JSX. Each component can be rendered independently and can have its own state and behavior. Components help in building complex UIs by breaking them into smaller pieces.

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

React Components vs JavaScript Functions:

**React Components:**

* Used to build user interfaces.
* Returns JSX.
* Can maintain state (in class components or via hooks in function components).
* Integrated with React lifecycle methods.

**JavaScript Functions:**

* Used for logic and data processing.
* Returns values, not JSX.
* Cannot maintain state or access React lifecycle methods.
* Not inherently part of the UI rendering process.

**Identify the types of components**

There are two main types of React components:

1. Class Components: ES6 classes that extend React.Component. They have lifecycle methods and state.

2. Function Components: JavaScript functions that return JSX. They can use hooks for state and effects.

**Explain class component**

A class component is a component defined using an ES6 class. It must extend React.Component and contain a render() method. It can manage internal state and use lifecycle methods such as componentDidMount, componentDidUpdate, etc.

Example:

class Welcome extends React.Component {

render() {

return <h1>Hello from Class Component</h1>;

}

}

**Explain function component**

A function component is a simple JavaScript function that takes props as input and returns JSX. It is the modern way of writing components and can use React Hooks like useState and useEffect to handle state and lifecycle features.

Example:

function Welcome() {

return <h1>Hello from Function Component</h1>;

}

Define component constructor

The constructor() is a special method used in class components to initialize state and bind methods. It is called once when the component is created.

Example:

constructor(props) {

super(props);

this.state = { message: 'Hello' };

}

**Define render() function**

The render() function is a required method in class components. It returns JSX that defines the UI structure. React calls this method automatically when it needs to render or re-render the component.

Example:

render() {

return <h1>This is rendered UI</h1>;

}