

Objectives

1. Explain React components

React components are the building blocks of any React application. They are reusable, independent pieces of code that return HTML through JSX. Each component describes a part of the user interface (UI) and can manage its own logic and state.

2. Identify the differences between components and JavaScript functions

While both React components and regular JavaScript functions accept inputs and return outputs, React components are specifically designed to return JSX (which looks like HTML) and manage state and lifecycle methods. JavaScript functions, on the other hand, are general-purpose and do not inherently manage UI or state.

Aspect	React Component	JavaScript Function
Purpose	Build UI elements	Perform general operations
Returns	JSX (HTML-like syntax)	Any value (string, number, object)
Supports Lifecycle	Yes (in class components)	No
State Management	Yes (in function with hooks/class)	No

3. Identify the types of components

React offers two primary types of components:

1. **Class Components** – Traditional components that use ES6 classes and can manage lifecycle methods and state.
2. **Function Components** – Simpler components defined as JavaScript functions, enhanced using React Hooks for managing state and side effects.

•4. Explain class component

A class component is a React component defined using a JavaScript class that extends `React.Component`. It must include a `render()` method that returns JSX. Class components can have a constructor and lifecycle methods such as `componentDidMount()`.

```
class Welcome extends React.Component {  
  render() {
```

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

5.Explain function component

A function component is a simpler and more modern way to define components using a plain JavaScript function. They return JSX and can use hooks (like useState, useEffect) to manage state and side effects.

```
function Welcome(props) {  
  return <h1>Hello, {props.name}</h1>;  
}
```

6.Define component constructor

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

```
constructor(props) {  
  super(props);  
  this.state = { count: 0 };  
}
```

7. Define render() function

The render() function is required in every class component. It returns the JSX that should be displayed on the screen. React calls this method whenever the component's state or props change.

```
render() {  
  return <div>{this.state.count}</div>;  
}
```