

1. Explain React Components

React Components are the building blocks of any React application.

They let you **split the UI into independent, reusable pieces**, and manage each piece in isolation.

A component:

- Can be a function or a class.
- Returns **JSX** (JavaScript + HTML-like code).
- Can manage **state** and respond to **props**.

Example:

jsx

```
function Welcome() {  
  return <h1>Hello, React!</h1>;  
}
```

2. Differences Between Components and JavaScript Functions

Feature	React Component	JavaScript Function
Purpose	Renders UI in React	Performs general computation
Output	JSX (UI)	Return data (string, number, etc.)
Lifecycle	Has React lifecycle (mount, update)	No lifecycle
React Features	Can use hooks, state, props	Cannot

Example

jsx

```
function Hello() {  
  return <h1>Hello!</h1>;  
}  
  
|  
  
function add(a, b) {  
  return a + b;  
}
```

3. Types of Components in React

There are **two main types**:

1. **Function Component**
2. **Class Component**

4. Explain Class Component

A **Class Component** is a React component created using ES6 classes.

Key Features:

- Uses `render()` method to return JSX
- Can have **state** and **lifecycle methods**

Example:

Jsx

```
import React, { Component } from 'react';

class Welcome extends Component {

  render() {

    return <h1>Welcome to Class Component</h1>;

  }

}
```

5. Explain Function Component

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

Key Features:

- Uses `return` to render JSX
- Can use **hooks** like `useState`, `useEffect` (React 16.8+)
- Lightweight and easy to read
- **Example:**

jsx

```
import React from 'react';

function Welcome() {

  return <h1>Welcome to Function Component</h1>;

}
```

6. Define Component Constructor

In **class components**, the **constructor** is a special method used to:

- Initialize **state**
- Bind methods to the class

Syntax:

Jsx

```
constructor(props) {  
  super(props);  // Required to use 'this.props'  
  this.state = {  
    count: 0  
  };  
}
```

Only used in **class components**, not in functional components.

7. Define render() Function

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

Key Points:

- Must return **JSX**
- Called automatically by React

Example:

Jsx

```
render() {  
  return <h1>Hello from Render</h1>;  
}
```