1. Explain React Components

React components are the building blocks of a React application. They are reusable pieces of UI that can manage their own state and logic. A component takes in **props** (inputs) and returns **JSX** (a visual output).

There are two main types:

- **Class Components**
- **Function Components**

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2. Identify the Differences Between Components and JavaScript Functions

Feature	**React Component**	**JavaScript Function**
Purpose	Builds UI	Performs logic or computation
Returns	JSX (UI)	Any value (e.g., number, string)
State	Can maintain state (especially class/component with hooks)	No built-in state management
Lifecycle	React components have lifecycle methods	JavaScript functions don't
Integration	Used in rendering UI in React apps	Used for general logic

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3. Identify the Types of Components

React has two main component types:

1. **Class Component** – Uses ES6 classes and has lifecycle methods.
2. **Function Component** – Simpler, uses functions, and can use hooks for state/lifecycle features.

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4. Explain Class Component

A **class component** is a more traditional way to write components. It extends React.Component and must include a render() method.

Example:

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


class Welcome extends Component {
  render() {
    return <h1>THIS IS WELCOME CLASS</h1>;
  }
}
```

Features:

- Can have **state**
- Supports **lifecycle methods**

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5. Explain Function Component

A **function component** is a simpler component written as a plain JavaScript function. Since React 16.8, you can use **hooks** in them to manage state and lifecycle.

Example:

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

With State (using Hooks):

```
import React, { useState } from 'react';
function Counter() {
  const [count, setCount] = useState(‘’);
  return <button onClick={() => setCount(count + 1)}>Clicked {count} times</button>;
}
```

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6. Define Component Constructor

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

- Initialize state
- Bind event handlers

Example:

```
class Welcome extends Component {
 constructor(props) {
   super(props);
   this.state = {
       message: 'Welcome!',
       name: ‘Avi’
  };
 }
}
```

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7. Define render() Function

The render() function is **mandatory** in class components. It returns the JSX that defines the UI.

Example:

```
class Hello extends Component {
 render() {
   return <h2>Hello from Render Function</h2>;
 }
}
```

Key Points:

- Can only return **one root element** (wrap multiple elements in a <div> or <>...</> fragment).
- Called every time the component’s state or props change.