**WEEK 6- REACT HO2 - “COMPONENTS“**

**🔹 React Components**

Components are **independent, reusable pieces** of UI in React.

**🔹 Difference: Components vs JS Functions**

| **React Component** |  | **JavaScript Function** |
| --- | --- | --- |
| Returns JSX |  | Returns values/data |
| Used for rendering UI |  | Used for logic/calculations |
| Can manage state/lifecycle |  | Cannot manage UI state directly |

**🔹 Types of Components in React**

**1️⃣ Function Component**

a **simple JavaScript function** that returns UI (JSX).

Eg-

function Welcome() {

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

}

**Used when:**

* You just want to display something.
* You want to use **React Hooks** like useState, useEffect, etc.

Eg-

import { useState } from 'react';

function Counter() {

const [count, setCount] = useState(0);

return (

<div>

<p>Count is: {count}</p>

<button onClick={() => setCount(count + 1)}>Increase</button>

</div> ); }

🧠 **Key Point:** No ‘this’ , no classes, just clean and simple code.

**2️⃣ Class Component**

This is like a **blueprint-based object**. It uses JavaScript classes (class MyComp extends React.Component) and must have a render() method.

Eg-

import React, { Component } from 'react';

class Welcome extends Component {

render() {

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

}}

**Used when:**

* You want to use **state** or **lifecycle methods**.
* You prefer object-oriented style.
* You can also use constructor() here.

**🔹 Parts (or features) of a Class Component-**

**#Component Constructor (Only in Class Component)**

**🔸 What is it?**

It’s a special function used **to set up things** before the component is shown.

**🔸 What does it do?**

* **Initialize state**
* **Bind methods** if needed

constructor(props) {

super(props); // required

this.state = {

name: 'Anshika'

};

}

🧠 Think of constructor as the setup area of your component.

**# render() Function – Only in Class Component**

* This is a **required method** in class components.
* It returns the UI part (JSX) that should appear on screen.

render() {

return <h1>Hello, this is render speaking!</h1>;

}

Without render(), the class component won’t work because React won’t know **what to display**.

**✨ Quick Comparison Chart**

| **Feature** | **Function Component** | **Class Component** |
| --- | --- | --- |
| Simpler Code | ✅ Yes | ❌ More setup |
| Uses Hooks | ✅ useState, useEffect, etc. | ❌ (Hooks not allowed) |
| Uses render() | ❌ Not needed | ✅ Required |
| Uses constructor() | ❌ No | ✅ Yes (optional but common) |
| Easier to Learn | ✅ Yes | ❌ Slightly complex |

**🔹 Then Why Do You See .js Files Instead of .jsx in CRA like we use in Vite?**

CRA (Create React App) allows you to use **.js files with JSX syntax**, so you don’t *have* to name them .jsx.

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