### ****What are React Components?****

React components are the **building blocks** of a React application. They allow you to split the UI into **independent, reusable pieces**, and manage each piece in isolation.

**Difference Between React Components and JavaScript Functions**

| **React Component** | **JavaScript Function** |
| --- | --- |
| Returns JSX to render UI | Returns a value, not typically JSX |
| Can have lifecycle methods | Does not have lifecycle methods |
| Can manage state and props | No built-in concept of state or props |
| Specifically designed for React UI | Generic for logic and computation |

**Types of React Components**

**Class Component**

**Function Component**

**Class Component**

A **class component** is an ES6 class that extends React.Component. It must include a render() method which returns JSX.

import React, { Component } from 'react';

class Welcome extends Component {

render() {

return <h1>Welcome Message</h1>;

}

}

**Function Component**

A **function component** is a simple JavaScript function that returns JSX. It is the modern and recommended way to write components (especially with hooks).

jsx

CopyEdit

function Welcome() {

return <h1>Welcome Message</h1>;

}

Or using arrow functions:

const Welcome = () => <h1>Welcome Message</h1>;

**Component Constructor**

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

Initialize local state

Bind event handlers

Example:

constructor(props) {

super(props);

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

}

**render() Function**

The render() method is mandatory in class components. It returns JSX — the UI representation of the component.

Practical Task Summary (StudentApp Project)

**Project Name:**

**StudentApp** — A basic Student Management Portal

**Components to Create:**

**Home Component**  
Displays:  
"Welcome to the Home page of Student Management Portal"

**About Component**  
Displays:  
"Welcome to the About page of the Student Management Portal"

**Contact Component**  
Displays:  
"Welcome to the Contact page of the Student Management Portal"

**Expected Output (App.js Integration)**

All three components (Home, About, Contact) should be imported and rendered inside the main App.js file to display their messages on the browser.