**Components (Functional & Class Components)**

1. What are components in React? Explain the difference between functional components and class components.

* **Components** are the building blocks of React applications. They are reusable pieces of UI that encapsulate specific functionality and render specific parts of the user interface.
* **Functional Components:**
* Simpler syntax, often used for stateless components.
* Defined as functions that accept props as input and return JSX.
* Since React 16.8, they can use hooks to manage state and side effects.
* **Class Components:**
* More complex, used for stateful components that require lifecycle methods.
* Defined as classes that extend React.Component.
* They have a render() method that returns JSX.

1. How do you pass data to a component using props?

* **Props** (short for properties) are used to pass data from parent components to child components.
* They are defined as attributes on the component tag and can be accessed within the component using the props object.
* Example:
* **<Greeting name="Alice" />**

1. What is the role of render() in class components?

* The render() method is the core method of a class component.
* It is responsible for returning the JSX that represents the component's UI.
* React calls this method whenever the component needs to be re-rendered.