

## Module 9) React Components, State & Props

### Components (Functional & Class Components)

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

**Answer :**

Components are the building blocks of a React application. They are reusable pieces of code that return React elements (UI). There are two types:

#### **1.) Functional Components:**

These are JavaScript functions that return JSX. They are simple and mostly used with hooks.

**Example:**

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

#### **2.) Class Components:**

These use ES6 classes and have more features like state and lifecycle methods.

**Example:**

```
class Welcome extends React.Component {  
  
    render() {  
  
        return <h1>Hello</h1>;  
  
    }  
  
}
```

**The difference between functional and class components in React:**

In React, functional components are simple JavaScript functions that return JSX. They are easy to write and understand, and with the introduction of

hooks (like **useState** and **useEffect**), they can also manage state and side effects. Class components, on the other hand, are based on ES6 classes. They use the **render()** method to return JSX and manage state using **this.state** and **this.setState()**. Class components also have built-in lifecycle methods, while functional components handle those using hooks.

## **Question 2: How do you pass data to a component using props?**

### **Answer :**

Props (short for "properties") are used to pass data from a parent component to a child component.

### **Example:**

Parent Component:

```
<Welcome name="Sefin" />
```

Child Component:

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

## **Question 3: What is the role of render() in class components?**

### **Answer :**

In class components, the **render()** method is used to return the JSX (UI) that should be displayed on the screen.

### **Example:**

```
class Hello extends React.Component {  
    render() {  
        return <h1>Hello World</h1>;  
    }  
}
```