**Hands-on in this document**

**Objectives**

**1. Explain React components**

A React component is a function or class that returns JSX and represents a part of the UI. It accepts props (inputs) and optionally manages state.

**Example (Function Component)**

function Greet(props) {

return <h1>Hello, {props.name}</h1>;

}

**Types:**

* Functional Component – Simple JS function (modern, uses hooks)
* Class Component – Uses ES6 class (older, uses lifecycle methods)

**Features:**

* Reusable
* Independent
* Accept props
* Return JSX

**2. Identify the differences between components and JavaScript functions**

|  |  |  |
| --- | --- | --- |
| **Feature** | **React Component** | **JavaScript Function** |
| **Purpose** | **Builds UI elements** | **Performs a specific logic or task** |
| **Returns** | **JSX (HTML-like syntax)** | **Any JavaScript value** |
| **Usage** | **Used inside JSX with <ComponentName />** | **Called like functionName()** |
| **Accepts Props** | **Yes, via props** | **Parameters are regular variables** |
| **Reusability in UI** | **Meant for reusable UI logic** | **Meant for general logic reuse** |
| **Requires React** | **Yes** | **No** |

**3. Identify the types of components**

**Functional Components**

* Simple JavaScript functions that return JSX
* Do not use this keyword
* Easier to write and test
* Can use Hooks (like useState, useEffect)

**Class Components**

* Use ES6 **classes**
* Use this.props and this.state
* Can have **lifecycle methods** (like componentDidMount)

**4.Explain class component**

A class component in React is a componentdefined using an ES6 class. It can hold state, receive props, and use lifecycle methods.

**Key Features:**

* Uses class keyword
* Access props using this.props
* Can have a constructor for initializing state
* Supports **lifecycle methods** like componentDidMount()

**5. Explain function component**

A function component is a simple JavaScript function that returns JSX. It's used to display UI and can accept props.

**Key Features:**

* Simpler and shorter than class components
* No this keyword — props are passed directly
* Can use **React Hooks** (like useState, useEffect) for state and lifecycle features
* Preferred for new React development due to readability and performance

**6. Define component constructor**

The constructor in a React class component is a special method used to:

* Initialize the component’s state
* Bind event handlers to the class instance (if needed)

**Key Points:**

* Must call super(props) before using this
* Used only in **class components**
* Not required unless you're using state or bindings

**7. Define render() function**

The render() function is a required method in class components that:

* Returns the JSX (HTML-like code) to be displayed on the screen
* Gets called every time the component re-renders

**Key Points:**

* Only used in **class components**
* Must return **one single JSX element** (can have nested elements inside)
* Gets called **automatically** during mounting and updating phases

**Ouput :**

**localhost:3000**

