# React Components - Detailed Notes

## 1. Explain React Components

React components are the building blocks of any React application. They are reusable, self-contained pieces of UI that return React elements (JSX). A component can be thought of as a JavaScript function or class that takes in inputs (called 'props') and returns JSX to describe what should appear on the screen.

## 2. Differences between Components and JavaScript Functions

- Components return JSX while standard JavaScript functions return primitive values.  
- React components are meant for UI rendering while JavaScript functions are general-purpose.  
- React components follow a special lifecycle (for class components).  
- React components can maintain their own state (in class or with hooks in function components).

## 3. Types of Components

There are two main types of React components:  
a) Functional Components: These are simple functions that accept props and return JSX.  
b) Class Components: These are ES6 classes that extend from React.Component and can hold state and lifecycle methods.

## 4. Explain Class Component

A class component is a JavaScript class that extends React.Component. It must include a render() method which returns JSX. Class components can use lifecycle methods and hold their own state.  
  
Example:  
class Welcome extends React.Component {  
 render() {  
 return <h1>Hello, {this.props.name}</h1>;  
 }  
}

## 5. Explain Function Component

Function components are JavaScript functions that accept a props object as an argument and return JSX. With the introduction of React Hooks, they can also maintain state and use lifecycle methods.  
  
Example:  
function Welcome(props) {  
 return <h1>Hello, {props.name}</h1>;  
}

## 6. Define Component Constructor

The constructor in a class component is used to initialize the component's state and bind methods. It’s called before the component is mounted.  
  
Example:  
constructor(props) {  
 super(props);  
 this.state = { count: 0 };  
}

## 7. Define render() Function

The render() function is required in every class component. It returns the JSX that defines the UI of the component. It is called automatically during the lifecycle of the component to display or re-display the component.