React Components – Student Management Portal Lab

# Defined Objectives

## 1. Explain React components

React components are the building blocks of a React application. They allow you to split the UI into independent, reusable pieces that can be handled separately.

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

- Components return JSX, not just JavaScript values.  
- Components manage lifecycle methods and state.  
- Functions don’t maintain internal state or lifecycle.  
- Components can be reused across UI; regular functions can’t handle rendering.

## 3. Identify the types of components

There are two main types of React components:  
- Class Components  
- Function Components

## 4. Explain class component

Class components are ES6 classes that extend from React.Component. They can hold and manage their own state and use lifecycle methods.

## 5. Explain function component

Function components are JavaScript functions that accept props and return JSX. With React Hooks, they can also manage state and side effects.

## 6. Define component constructor

The constructor is a special method used in class components for initializing local state and binding event handlers.

## 7. Define render() function

The render() method is required in class components and returns the JSX that should be rendered on the UI.

# Hands-on Lab Instructions

In this hands-on lab, you will learn how to:

· Create a class component

· Create multiple components

· Render a component

# Prerequisites

The following is required to complete this hands-on lab:

· Node.js

· NPM

· Visual Studio Code

Estimated time to complete this lab: 30 minutes.

# Steps to Create Student Management Portal App

1. Create a React project named 'StudentApp' by typing the following command in the terminal:  
  
npx create-react-app StudentApp

2. Create a new folder under Src folder named 'Components'. Add a new file named 'Home.js'.

3. Add the following code in Home.js:  
  
import React from 'react';  
  
function Home() {  
 return <h2>Welcome to the Home page of Student Management Portal</h2>;  
}  
  
export default Home;

4. Under Src folder, add another file named 'About.js' and use a similar structure to Home.js.

5. Repeat the same steps to create 'Contact.js' component with respective message.

6. Edit 'App.js' to import and call the Home, About, and Contact components:  
  
import React from 'react';  
import Home from './Components/Home';  
import About from './About';  
import Contact from './Contact';  
  
function App() {  
 return (  
 <div>  
 <Home />  
 <About />  
 <Contact />  
 </div>  
 );  
}  
  
export default App;

7. In command prompt, navigate into StudentApp and execute the app:  
  
npm start

8. Open your browser and go to:  
  
http://localhost:3000

# Screenshot of Output

