React Function Component – Score Calculator 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 function component

· Apply style to components

· Render a component

# Prerequisites

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

· Node.js

· NPM

· Visual Studio Code

# Notes

Estimated time to complete this lab: 30 minutes.

# Steps to Create Score Calculator App

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

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

3. Add the following code in CalculateScore.js:  
  
import React, { useState } from 'react';  
import '../Stylesheets/mystyle.css';  
  
function CalculateScore() {  
 const [name, setName] = useState('');  
 const [school, setSchool] = useState('');  
 const [total, setTotal] = useState('');  
 const [goal, setGoal] = useState('');  
 const [average, setAverage] = useState(null);  
  
 const handleClick = () => {  
 const avg = (parseFloat(total) + parseFloat(goal)) / 2;  
 setAverage(avg);  
 };  
  
 return (  
 <div className='form-container'>  
 <h2>Student Score Calculator</h2>  
 <input value={name} onChange={e => setName(e.target.value)} placeholder='Name' />  
 <input value={school} onChange={e => setSchool(e.target.value)} placeholder='School' />  
 <input value={total} onChange={e => setTotal(e.target.value)} placeholder='Total' />  
 <input value={goal} onChange={e => setGoal(e.target.value)} placeholder='Goal' />  
 <button onClick={handleClick}>Calculate Average</button>  
 {average !== null && (  
 <div className='result'>  
 <p><strong>Name:</strong> {name}</p>  
 <p><strong>School:</strong> {school}</p>  
 <p><strong>Average Score:</strong> {average.toFixed(2)}</p>  
 </div>  
 )}  
 </div>  
 );  
}  
  
export default CalculateScore;

4. Create a folder named 'Stylesheets' and add a file named 'mystyle.css' to style the components.

5. Edit App.js to import and use the CalculateScore component:  
  
import React from 'react';  
import CalculateScore from './Components/CalculateScore';  
  
function App() {  
 return (  
 <div>  
 <CalculateScore />  
 </div>  
 );  
}  
  
export default App;

6. In command prompt, navigate to the scorecalculatorapp folder and run:  
  
npm start

7. Open browser and go to:  
  
http://localhost:3000

# Screenshot of Output

