FEDF Assignment 1 – Calculator Using ReactJS

Name: M. Venkata Avinash

Roll Number: 2420030458

Section: 6

Overview

This document presents the detailed explanation, steps, and implementation of a **ReactJS-based Calculator application**.
The project demonstrates the use of **React components, states, and event handling** to build an interactive and fully functional calculator interface.

Project Summary

The calculator was developed using **Create React App**.
Core functionalities such as user input handling, arithmetic operations, and dynamic UI updates were implemented inside the **App.js** file.
The design emphasizes simplicity, usability, and responsiveness.

Implementation Steps

Below are the terminal commands used to set up and execute the project:

npx create-react-app calculator

cd calculator

npm install

npm start

These commands initialize the React environment, install required dependencies, and launch the development server.

Code Implementation

The calculator logic and layout were implemented in the src/App.js file using React's functional components and the useState hook for state management.

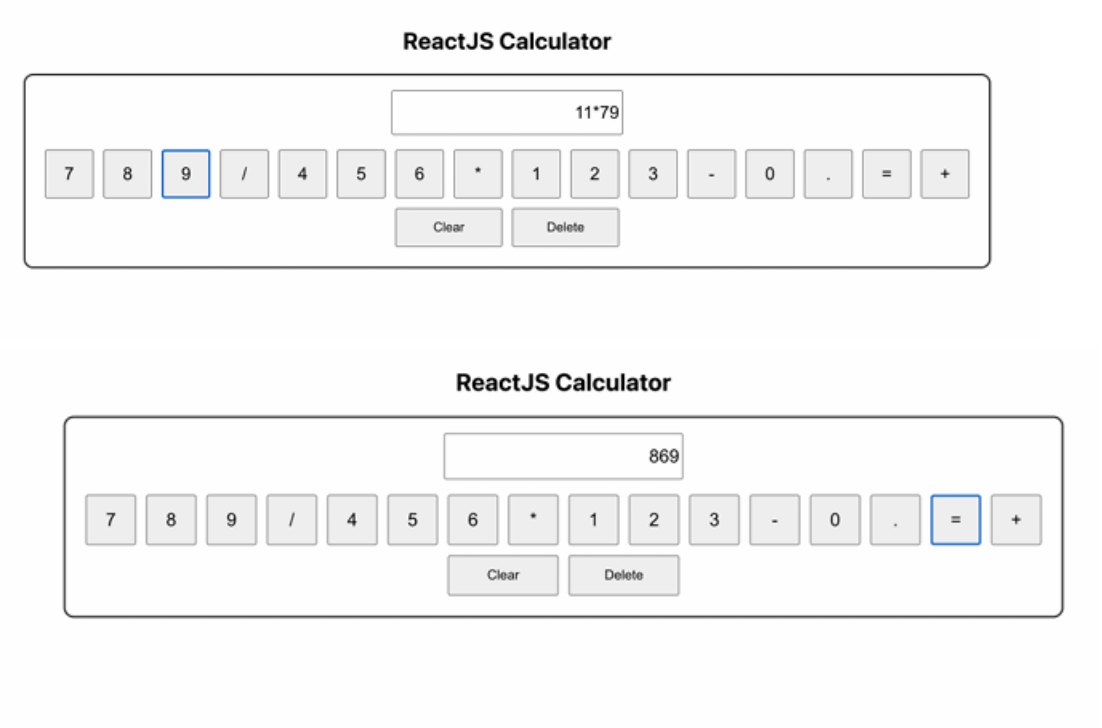
import React, { useState } from "react";

```
function App() {
  const [input, setInput] = useState("");

  const handleClick = (value) => setInput((prev) => prev + value);
  const handleClear = () => setInput("");
  const handleDelete = () => setInput((prev) => prev.slice(0, -1));

  const calculate = () => {
    try {
      setInput(eval(input).toString());
    } catch {
      alert("Invalid Expression");
    }
  };

  const buttons = [
    "7", "8", "9", "/",
    "4", "5", "6", "*",
    "1", "2", "3", "-",
    "0", ".", "=", "+"
  ];

  return (
    <div style={{ textAlign: "center", marginTop: "50px" }}>
      <h2>ReactJS Calculator</h2>
      <div
        style={{
```

```
    display: "inline-block",
    border: "2px solid #333",
    padding: "15px",
    borderRadius: "10px",
  }}
>
  <input
    type="text"
    value={input}
    readOnly
    style={{
      width: "230px",
      height: "40px",
      marginBottom: "10px",
      fontSize: "18px",
      textAlign: "right",
    }}
  />
  <br />
  {buttons.map((btn) => (
    <button
      key={btn}
      onClick={() => (btn === "=" ? calculate() : handleClick(btn))}
      style={{
        width: "50px",
        height: "50px",
        margin: "5px",
        fontSize: "18px",
```

```
            cursor: "pointer",
          }}
        >
          {btn}
        </button>
      ))}
      <br />
      <button
        onClick={handleClear}
        style={{ width: "110px", height: "40px", margin: "5px" }}
      >
        Clear
      </button>
      <button
        onClick={handleDelete}
        style={{ width: "110px", height: "40px", margin: "5px" }}
      >
        Delete
      </button>
    </div>
  </div>
 );
}

export default App;
```

Outputs:



Key Features

- **Dynamic UI:** Updates instantly with every button press.
- **Error Handling:** Alerts users when invalid expressions are entered.
- **State Management:** Efficiently handled using React's useState hook.
- **Minimalist Design:** Focused on clarity and functionality.

GitHub Repository

https://github.com/Avinash-2007-M/FEDF-Assignments