Assignment

Learner Details

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- **Enrollment Number: SU625MR003**
- **Batch / Class: MERN STACK**
- **Assignment: Toggle Theme using React**
- **Date of Submission: 11/08/2025**

Problem Solving Activity 1.1

1. Program Statement

The program allows a user to switch between **Light** and **Dark** themes in a React application.

- **Input:** A button click to toggle the theme.
- **Output:** The application's background and text colors change based on the current theme (Light or Dark).
  The program uses **React Context API** to share the theme state across multiple components (NavBar and ThemeToggle) without passing props manually.

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2. Algorithm

- Create a ThemeContext using createContext() to store theme data and a toggle function.
- Create a ThemeProvider component to hold:
- theme state (light or dark)
- toggleTheme function to switch between themes.
- Wrap application components inside the ThemeProvider to share theme data.
- In NavBar component:
- Access the current theme from ThemeContext.
- Apply different background and text colors based on theme value.
- In ThemeToggle component:
- Access the toggleTheme function from ThemeContext.

- On button click, call toggleTheme to switch themes.
- Then we render both components and verify that the theme changes dynamically.

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3. Pseudocode

START

CREATE ThemeContext

FUNCTION ThemeProvider(children):

  SET theme = "dark"

  FUNCTION toggleTheme():

    IF theme == "light" THEN

      theme = "dark"

    ELSE

      theme = "light"

  RETURN ThemeContext.Provider(value={theme, toggleTheme}) containing children

FUNCTION NavBar():

  GET theme from ThemeContext

  SET navbarStyle:

    background = light? "#f0f0f0" : "#333"

    color = light? "#000" : "#fff"

  DISPLAY nav bar with current theme name

FUNCTION ThemeToggle():

  GET toggleTheme from ThemeContext

  DISPLAY button "Toggle Theme"

  ON button click CALL toggleTheme

MAIN APP:

WRAP NavBar and ThemeToggle inside ThemeProvider

END

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4. Program Code

```
import React,{useContext} from 'react'
import { ThemeContext } from './Toggle'

const Navbar = () => {
   const {theme}=useContext(ThemeContext)

   const navbarStyle={
      padding:"50px",
      backgroundColor:theme==="light"?"#f9f8f8ff":"#333",
      color:theme==="light"?"#000":"#fff"
   }
  return (
   <div>
      <nav style={navbarStyle}>Current Theme:{theme}</nav>
   </div>
  )
}
export default Navbar
```

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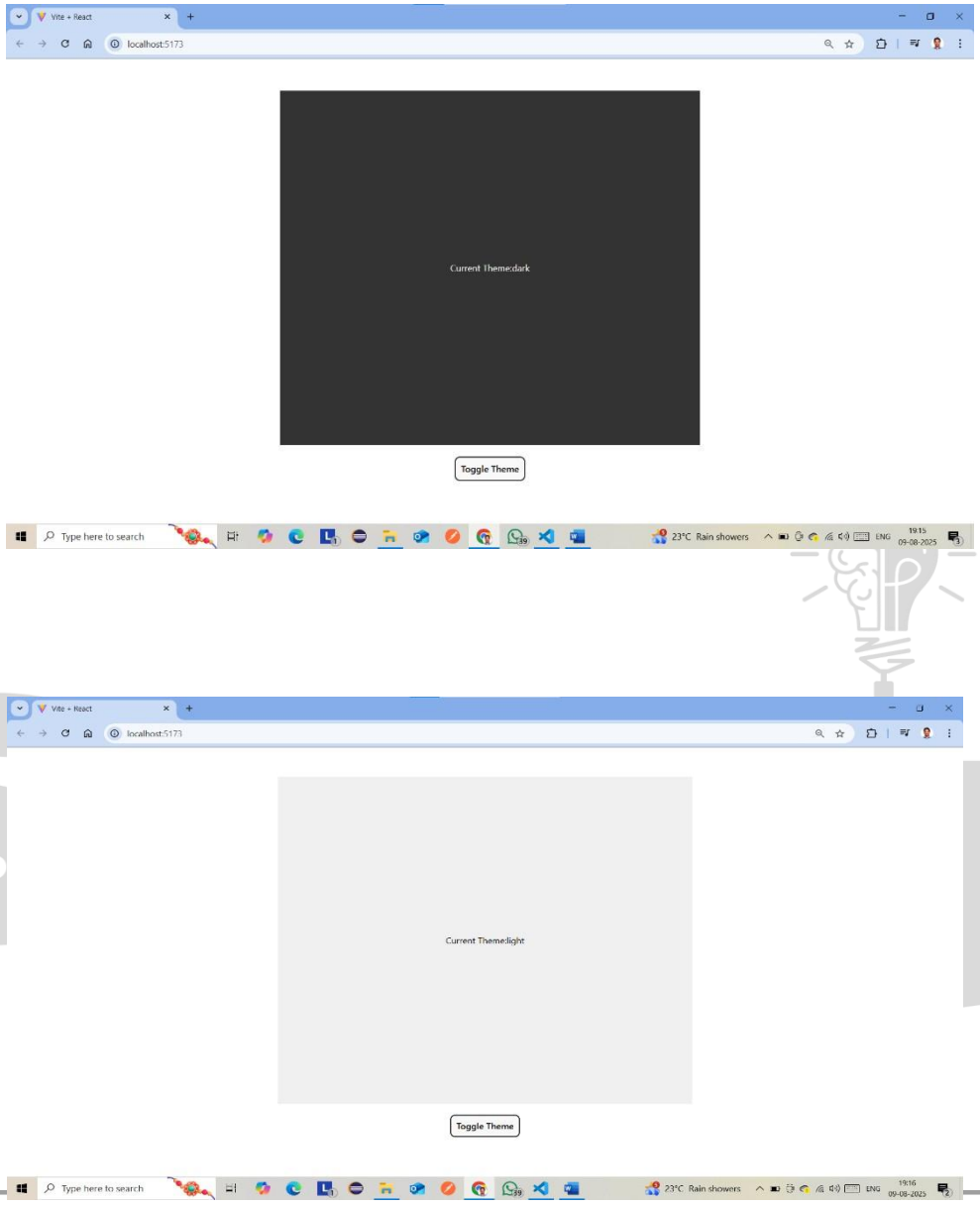
5. Screenshots of Output



7. Observation / Reflection

Implementing a toggle mode in React using useState (or useContext), combined with useEffect and localStorage, provides a seamless, persistent theme switch—enhanced by using CSS variables for clean, scalable styling.