**Data Flow Diagram (DFD) for Theme Switcher App**

**Project Description**

The Theme Switcher App is a React-based web application that allows users to toggle between light and dark themes. It utilizes React Context API to manage theme state globally, ensuring a seamless user experience. The system processes user interactions, updates the theme state, and dynamically renders UI changes.

**Level 0 DFD (Context Diagram)**

The Level 0 DFD provides a high-level overview of the system, illustrating how users interact with the Theme Switcher App and how data flows between various components.

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| External Entities |  
| |  
| - User |  
+-----------------------+  
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+---------------------------+  
| Theme Switcher App |  
| (Process: 1.0) |  
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+---------------------------+  
| Data Store: Application |  
| State (Theme Context) |  
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**Explanation:**

• **External Entity (User):**The user interacts with the application by clicking the toggle button to switch themes.

• **Process (Theme Switcher App):** The system processes the theme toggle event and updates the application state.

• **Data Store (Application State - Theme Context):** Stores the current theme (light or dark) and provides it to the entire app.

**Level 1 DFD (Detailed Breakdown)**

The Level 1 DFD further decomposes the Theme Switcher App process into sub-processes, showing how user interactions trigger different functionalities.

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| External Entity |  
| (User) |  
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| Process: 1.1 - Click Button |  
| (Toggle Light/Dark Mode) |  
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| Process: 1.2 - Update State |  
| (Modify Theme Context) |  
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| Process: 1.3 - Re-render UI |  
| (Apply New Theme Styles) |  
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| Data Store: Application |  
| State (Theme Context) |  
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**Explanation:**

1**. Process 1.1 (Click Button - Toggle Light/Dark Mode):** The user clicks the theme toggle button.

2. **Process 1.2 (Update State - Modify Theme Context):** The ThemeContext updates the theme state.

3. **Process 1.3 (Re-render UI - Apply New Theme Styles):**The UI updates based on the selected theme.

**Data Flow**

• The User clicks the toggle button to switch themes.

• The System processes the toggle event and updates the Theme Context.

• The UI dynamically updates to reflect the selected theme.

**Additional Notes**

• This system utilizes React Context API for global state management.

• Future enhancements could include saving user preferences to local storage or a database.