Data Flow Diagram (DFD) for theme-toggler-app
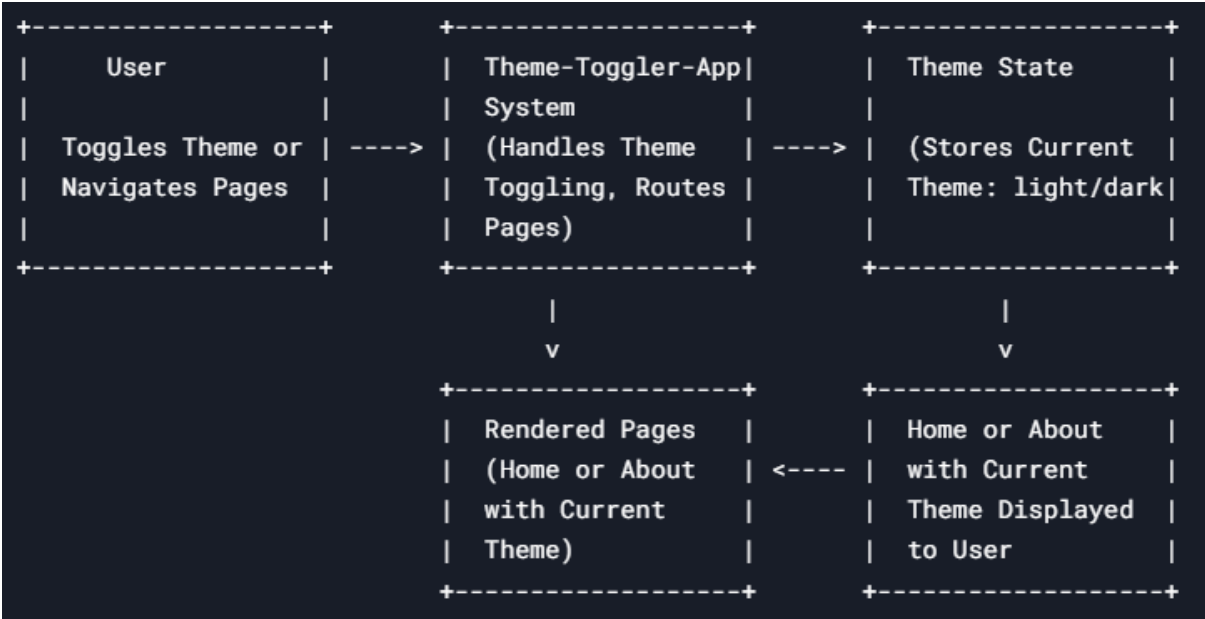
Level 0: Context Diagram

This is the highest-level view of the system, showing the overall flow of data between the system and external entities.

Components

1. **External Entity: User**

   o   Interacts with the system by toggling the theme or navigating between pages.

2. **Process: Theme-Toggler-App System**

   o   Handles theme toggling and routing between pages.

3. **Data Store: Theme State**

   o   Stores the current theme (light or dark).

4. **Output: Rendered Pages**

   o   Displays the appropriate page (Home or About) with the current theme.

Diagram:

```
+------------------+         +------------------+         +------------------+
|      User        |         | Theme-Toggler-App|         |   Theme State    |
|                  |         | System           |         |                  |
| Toggles Theme or | ----> | (Handles Theme   | ----> | (Stores Current  |
| Navigates Pages  |         | Toggling, Routes |         | Theme: light/dark|
|                  |         | Pages)           |         |                  |
+------------------+         +------------------+         +------------------+
                                      |                            |
                                      v                            v
                             +------------------+         +------------------+
                             | Rendered Pages   |         | Home or About    |
                             | (Home or About   | <---- | with Current     |
                             | with Current     |         | Theme Displayed  |
                             | Theme)           |         | to User          |
                             +------------------+         +------------------+
```
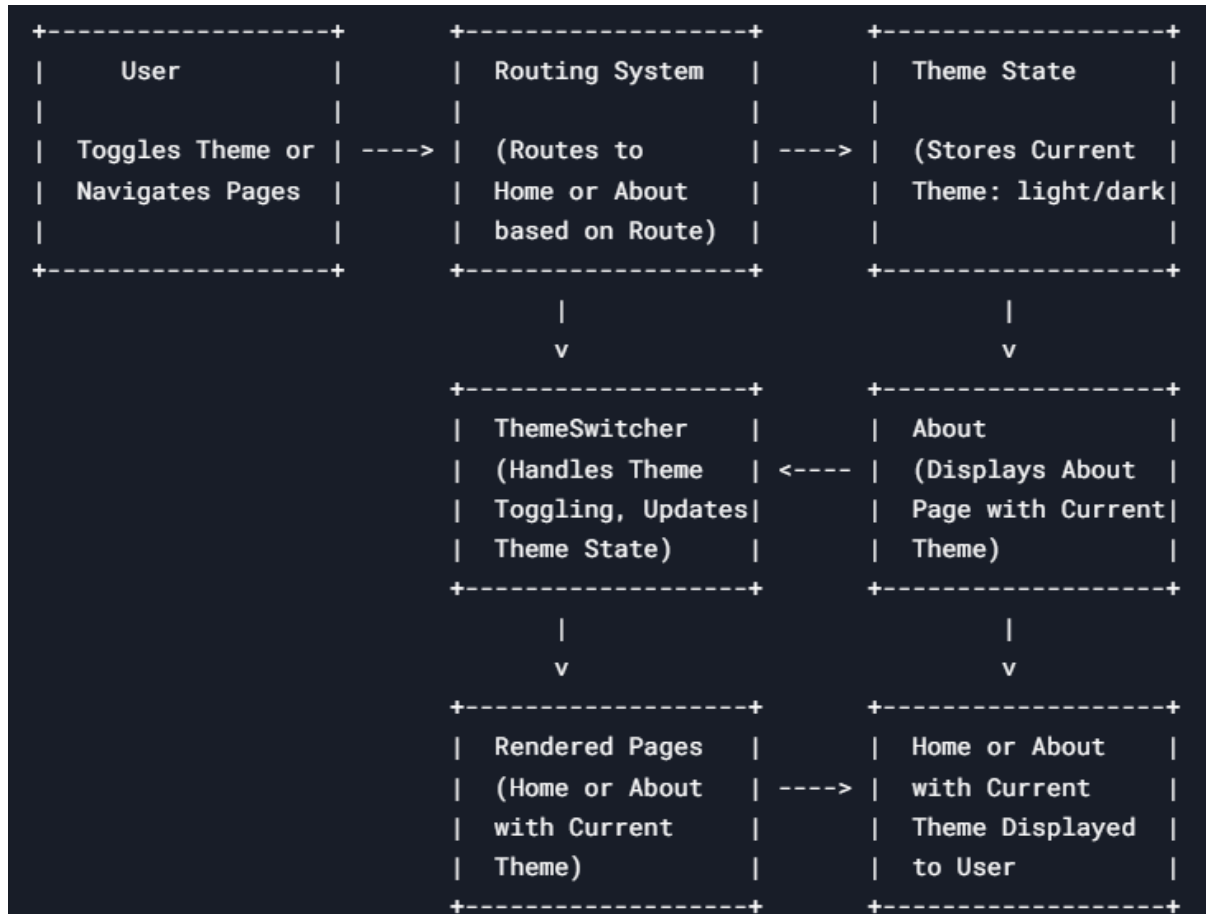
Level 1: Detailed DFD

This breaks down the Theme-Toggler-App System into its sub-processes and shows how data flows between them.

Components

1. **User: Toggles the theme or navigates between pages.**

2. **Routing System: Determines which page to render based on the route.**

3. ThemeSwitcher: Handles theme toggling and interacts with the Theme State.

4. About: Displays the "About" page with the current theme.

5. Theme State: Stores the current theme (light or dark).

Diagram:

```
+------------------+      +------------------+      +------------------+
|     User         |      | Routing System   |      | Theme State      |
|                  |      |                  |      |                  |
| Toggles Theme or | ---> | (Routes to       | ---> | (Stores Current  |
| Navigates Pages  |      | Home or About    |      | Theme: light/dark|
|                  |      | based on Route)  |      |                  |
+------------------+      +------------------+      +------------------+
                                  |                          |
                                  v                          v
                          +------------------+      +------------------+
                          | ThemeSwitcher    |      | About            |
                          | (Handles Theme   | <--- | (Displays About  |
                          | Toggling, Updates|      | Page with Current|
                          | Theme State)     |      | Theme)           |
                          +------------------+      +------------------+
                                  |                          |
                                  v                          v
                          +------------------+      +------------------+
                          | Rendered Pages   |      | Home or About    |
                          | (Home or About   | ---> | with Current     |
                          | with Current     |      | Theme Displayed  |
                          | Theme)           |      | to User          |
                          +------------------+      +------------------+
```

Explanation of Data Flow

1. User → Routing System: The user navigates to a specific route (/ or /about).

2. Routing System → ThemeSwitcher: If the route is /, the ThemeSwitcher component is rendered.

3. ThemeSwitcher → Theme State: The ThemeSwitcher toggles the theme and updates the Theme State.

4. Routing System → About: If the route is /about, the About component is rendered.

5. Routing System → Rendered Pages: The appropriate page (ThemeSwitcher or About) is displayed to the user with the current theme.