**DEBOUNCED SEARCH**

This React-based project implements a simple **user authentication system** with a **debounced search functionality**. The application consists of a **login page** where users can enter their credentials, a **welcome page** displayed after successful login, and a **debounced search feature** that processes user input efficiently.

LEVEL 00: CONTEXT DIAGRAM

* User : Enters search query and logs in.
* System(React App) : Processes search and navigates user to the login page.
* **External Entity (User):** The user interacts with the Login System.
* **Process (Login System):** The system handles login and debounced search.
* **Data Store (User DB):** Stores user credentials and authentication details.

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| User |

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| React Application | (Process: 0)

| - Handles search input |

| - Manages authentication|

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| Debounced Search Query |

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LEVEL 01 : DECOMPOSING THE SYSTEM

* Search Management(1.1) : Handles user input and debounced search.
* User Authentication(1.2) : Manages Login navigation.

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| User |

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| Process 1.1: Search |

| - Takes user input |

| - Applies debounce |

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| Process 1.2: Login |

| - Validates login |

| - Navigates to Welcome |

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| Welcome Page (Success) |

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**Process 1.1 (User Authentication):**

* The user inputs credentials (username and password).
* The system captures and processes the credentials.

**Process 1.2 (Validate User):**

* The system checks credentials against the **User DB**.
* If valid, the system proceeds; otherwise, an error is shown.

**Process 1.3 (Redirect to Welcome Page):**

* If authentication is successful, the user is redirected to the **Welcome Page**.

**Data Flow**

* **Login:** The user provides credentials → the system validates them → redirects to Welcome Page.
* **Search Query:** The user types input → debounce logic processes it → UI updates with results