**Data Flow Diagram (DFD) for Dynamic Page**

**Project Description**

This React-based dynamic web application implements lazy loading and routing to manage multiple pages such as Home, About, Contact, and Post pages. It uses React Router for navigation and dynamically loads components using React.lazy(). Additionally, it handles 404 errors for undefined routes.

**Level 0 DFD (Context Diagram)**

The Level 0 DFD provides a high-level overview of the system, illustrating how the User interacts with the Dynamic React App and how data flows between the system and its routing mechanism.

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 | External Entities |   
 | |   
 | - User |   
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 | Dynamic React App |   
 | (Process: 1.0) |   
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 | Data Store: Routing & UI State |   
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**Explanation:**

• **External Entity (User):** The user interacts with the Dynamic React App by navigating between pages.

• **Process (Dynamic React App):** The system processes user requests and dynamically loads components.

• **Data Store (Routing & UI State):** Stores routing paths and component states, updating as navigation occurs.

**Level 1 DFD (Detailed Breakdown)**

The Level 1 DFD further decomposes the Dynamic React App process into sub-processes, showing how user interactions trigger navigation, lazy loading, and UI updates.

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 | External Entity |   
 | (User) |   
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 | Process: 1.1 - Navigate |   
 | (Click on Route Link) |   
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 | Process: 1.2 - Load Component |   
 | (Lazy Loading with Suspense) |   
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 | Process: 1.3 - Render Page |   
 | (Display UI) |   
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 | Data Store: Routing & UI State |   
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**Explanation:**

1. **Process 1.1 (Navigate - Click on Route Link):** The user clicks on a navigation link (e.g., Home, About, Contact).

2. **Process 1.2 (Load Component - Lazy Loading):** The system loads the corresponding component dynamically using React.lazy().

3. **Process 1.3 (Render Page - Display UI):** The UI updates to show the requested page.

**Data Flow**

• The User selects a page via navigation links.

• The React Router processes the request and dynamically loads the component.

• The UI updates with the requested page.

**Additional Notes**

• This DFD follows the lazy loading mechanism of React to optimize performance.

• The routing system dynamically loads components and renders the UI accordingly.