

# Routing E-Commerce Data Flow

## 1. Introduction

This document provides a detailed Data Flow Diagram (DFD) representation of the Routing E-Commerce React application.

It explains how navigation, routing, and component rendering are managed dynamically using React Router.

## 2. System Overview

The React application consists of the following key components:

- App.js: The main file that initializes React Router and defines routes for an e-commerce platform.
- Home Component: Displays the homepage.
- Products Component: Displays the available products.
- Cart Component: Displays the user's shopping cart.
- Checkout Component: Displays the checkout page.
- React Router: Manages navigation between different pages.

## 3. Data Flow Diagram (DFD)

### ### Level 0 (Context Diagram)

At the highest level, the system consists of external users navigating between e-commerce pages.

External Entities:

- User: Clicks navigation links to browse products, view cart, and proceed to checkout.

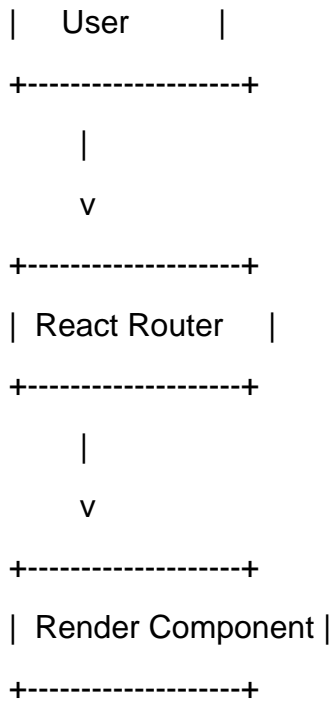
Processes:

- React Application: Handles routing and renders the corresponding components.

Data Stores:

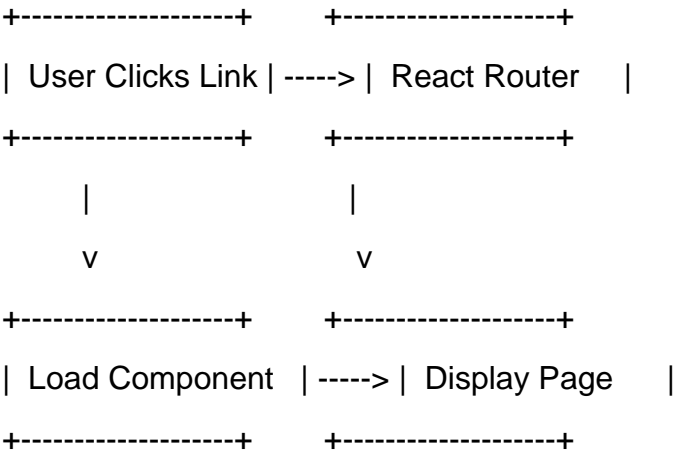
- None (Routes dynamically render components without persistent storage).

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### Level 1 DFD (Navigation and Component Rendering)

This level breaks down the routing process.

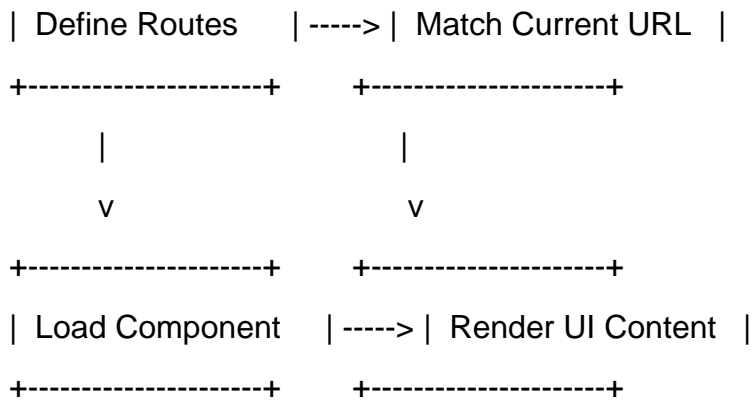


Process Explanation:

1. The user clicks on a navigation link (Home, Products, Cart, Checkout).
2. React Router updates the URL and loads the corresponding component.
3. The application renders the selected page dynamically.

### Level 2 DFD (Route Handling Process)





#### Process Explanation:

1. Routes are defined in the application using ``<Routes>`` and ``<Route>`` components.
2. When the user visits a URL, React Router matches it to a defined route.
3. The corresponding component is loaded and displayed.

#### 4. Explanation of Data Flow

1. The user interacts with navigation links to switch between different pages.
2. React Router dynamically updates the view based on the selected route.
3. The application loads and displays the corresponding component.
4. The navigation is seamless without full-page reloads.

#### 5. Conclusion

This document outlines the detailed data flow in a React-based e-commerce routing system. The application efficiently handles navigation and component rendering using React Router.