**# Data Flow Diagram (DFD) for EcomStore**

## **Level 0: Context Diagram**

### **Overview:**

The **EcomStore System** is an online shopping platform that allows users to register, browse products, add items to their cart, make payments, and complete checkout. The system integrates authentication, cart management, product details, and order processing.

**Entities & Processes:**

* **User:** Registers, logs in, browses products, adds items to the cart, and completes checkout.
* **EcomStore System (Process 1.0):** Manages authentication, cart operations, payments, and order handling.
* **Database (Data Store):** Stores user data, product inventory, cart items, and order details.

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| User |

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| EcomStore System |

| (Process: 1.0) |

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| Database |

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## **Level 1: Detailed Breakdown**

### **Processes Breakdown:**

1. **Process 1.1 - User Login/Register (LoginPage):** The user signs up or logs into the system.
2. **Process 1.2 - Browse Products (ProductCatalogue):** The system fetches and displays available products.
3. **Process 1.3 - View Product Details (ProductDetails):** The user can see detailed product information.
4. **Process 1.4 - Add to Cart (CartContext & CartPage):** The user adds items to their cart, and the cart data updates.
5. **Process 1.5 - Manage Cart (CartPage):** The user can update item quantities or remove products.
6. **Process 1.6 - Proceed to Checkout (CheckoutPage):** The user initiates the checkout process.
7. **Process 1.7 - Payment Processing (PaymentPage):** The system handles payment transactions securely.
8. **Process 1.8 - Order Confirmation (EcomRoutes):** The system stores the order details and sends confirmation.

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| Process 1.1 - Login/Register |

| (LoginPage) |

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| Process 1.2 - Browse Products |

| (ProductCatalogue) |

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| Process 1.3 - View Product Details |

| (ProductDetails) |

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| Process 1.4 - Add to Cart |

| (CartContext & CartPage) |

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| Process 1.5 - Manage Cart |

| (CartPage) |

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| Process 1.6 - Checkout |

| (CheckoutPage) |

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| Process 1.7 - Payment Processing |

| (PaymentPage) |

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| Process 1.8 - Order Confirmation |

| (EcomRoutes) |

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### **Data Flow:**

1. The **User** registers or logs into the system via **LoginPage**.
2. The **EcomStore System** fetches product data from the **Database** and displays it in **ProductCatalogue**.
3. The user **views product details** via **ProductDetails**.
4. The user **adds items to the cart**, updating the **CartContext & CartPage**.
5. The user **modifies cart items** (update quantity, remove products) via **CartPage**.
6. The user **proceeds to checkout**, and the system processes the request in **CheckoutPage**.
7. The **PaymentPage** handles transactions securely and updates order details.
8. The system **confirms the order** via **EcomRoutes** and updates the database.

**Benefits:** Provides a structured shopping experience. Manages authentication, cart, and payment processes efficiently. Ensures secure handling of user and transaction data.