**E-COMMERCE-STORE DFD**

**Level 0 DFD (Context Diagram)**

**Description**

At the highest level, the e-commerce store interacts with **external entities** (users) and processes their requests. The system handles user authentication, product browsing, cart management, and payment processing.

**Diagram**

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|  External Entities  |

|                       |

|   - User              |

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| E-Commerce Store   |

| (Process: 1.0)          |

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|Data Store: User DB |

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**Explanation**

1. **External Entity (User)**:
   * The user interacts with the e-commerce store by logging in, browsing products, adding items to the cart, and making payments.
2. **Process (E-Commerce Store)**:
   * The system processes user requests, including authentication, product browsing, cart management, and payment processing.
3. **Data Store (User DB)**:
   * The database stores user credentials, product details, and cart information.

**Level 1 DFD (Decomposition of Process)**

**Description**

The **E-Commerce Store** process (Process 1.0) is broken down into smaller sub-processes:

1. **User Authentication** (Process 1.1)
2. **Product Browsing** (Process 1.2)
3. **Cart Management** (Process 1.3)
4. **Payment Processing** (Process 1.4)

**Diagram**

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| External Entity | | External Entity |

| (User) | | (Admin) |

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| Process: 1.1 – | | Process: 1.2 - |

| User Authentication| | Admin Authentication |

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| Data Store: User DB | |Data Store: Admin DB |

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| Process: 1.3 - |

| Validate User |

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| Data Store: User DB|

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**Explanation of Processes**

1. **Process 1.1 (User Authentication)**:
   * The user inputs their credentials (username and password), which are sent to the system.
   * The system validates the credentials against the **User DB**.
   * If valid, the user is authenticated and granted access to the e-commerce store.
2. **Process 1.2 (Admin Authentication)**:
   * The admin inputs their credentials, which are validated against the **Admin DB**.
   * If valid, the admin is granted access to manage products and view orders.
3. **Process 1.3 (Validate User)**:
   * The system checks whether the entered credentials correspond to a record in the **User DB**.
   * If valid, the user is authenticated; otherwise, an error message is returned.
4. **Process 1.4 (Product Browsing)**:
   * The user browses products stored in the **Product DB**.
   * The system retrieves product details and displays them to the user.
5. **Process 1.5 (Cart Management)**:
   * The user adds or removes products from their cart.
   * The system updates the **Cart DB** with the changes.
6. **Process 1.6 (Payment Processing)**:
   * The user proceeds to payment by entering payment details.
   * The system processes the payment and updates the **Order DB**.

**Data Flow**

1. **User → E-Commerce Store**:
   * The user sends login credentials, product search queries, cart updates, and payment details.
2. **E-Commerce Store → User DB**:
   * The system validates user credentials and retrieves user profile information.
3. **E-Commerce Store → Product DB**:
   * The system retrieves product details for browsing.
4. **E-Commerce Store → Cart DB**:
   * The system updates the cart with added or removed items.
5. **E-Commerce Store → Order DB**:
   * The system stores order details after successful payment.