**Level 0 (Context Diagram)**

At the highest level, the system consists of a single process that represents the E-commerce Cart App.

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| External Entity |

| (User) |

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| E-commerce App |

| (Process: 1.0) |

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| Data Store: Cart |

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**Explanation:**

* **External Entity (User):** The user interacts with the E-commerce Cart App by logging in, browsing products, adding/removing items, and proceeding to payment.
* **Process (E-commerce App):** The system processes user actions such as authentication, product selection, cart updates, and order placement.
* **Data Store (Cart):** Stores the user's selected products.

**Level 1 DFD (Decomposition of Process 1.0 - E-commerce App)**

Now, let’s break down the **E-commerce App** process into more detailed steps.

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| External Entity |

| (User) |

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| Process: 1.1 - Login |

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| Data Store: Session |

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| Process: 1.2 - Browse Products |

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| Data Store: Products |

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| Process: 1.3 - Add to Cart |

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| Data Store: Cart |

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| Process: 1.4 - View Cart |

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| Data Store: Cart |

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| Process: 1.5 - Remove from Cart |

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| Data Store: Cart |

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| Process: 1.6 - Proceed to Payment |

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| Data Store: Order |

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**Explanation:**

1. **Process 1.1 (Login Page):**
   * The user enters their email and password.
   * If credentials are valid, the user is navigated to the **Products Page**.
2. **Process 1.2 (Browse Products Page):**
   * The user views available products.
   * Products are displayed dynamically with images, names, and prices.
3. **Process 1.3 (Add to Cart):**
   * When a user clicks **"Add to Cart"**, the product is added to the **Cart Context**.
   * The cart state updates, reflecting the new item count.
4. **Process 1.4 (View Cart Page):**
   * The user can view the products added to the cart.
   * Each product displays its name, price, and a **"Remove"** button.
5. **Process 1.5 (Remove from Cart):**
   * If the user clicks **"Remove"**, the selected product is removed from the cart.
   * The cart updates dynamically to reflect the changes.
6. **Process 1.6 (Proceed to Payment Page):**
   * The user clicks **"Proceed to Payment"** to navigate to the **Payment Page**.
   * Displays a message: "Payment Gateway Coming Soon!".

**Data Flow**

* The **User** interacts with the application through navigation and button clicks.
* The system processes authentication, product selection, and cart updates.
* The cart state is updated dynamically using React Context API.
* The application handles route changes using React Router.

**Additional Notes:**

* This DFD represents a client-side shopping cart with React Router and Context API.
* If backend integration is added (e.g., authentication, orders, product API), additional data stores such as a database or API calls can be introduced.
* Future improvements could include user authentication persistence, order history, and a real payment gateway integration.