**Project Description:**

### The **Retail Application System** enables users to browse products, add items to a cart, and complete purchases via secure payment APIs. It ensures seamless authentication, data retrieval, and checkout. Future upgrades may include order history and personalized recommendations.

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

At the highest level, we have just one process, which represents the system as a whole.

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| External Entities |

| - User |

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| Retail APP |

| (Process: 1.0) |

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| External API |

| (Payment, Products) |

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**Explanation**:

* **External Entity (User):** The user interacts with the Retail App.
* **Process (Retail App):** The system processes user actions like browsing products, adding to cart, and making purchases.
* **External APIs (Payment, Products):** The application fetches product data and processes payments through external APIs.

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

Now, let's break down the **Retail application system** process (Process 1.0) into more detailed steps.

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| External Entity | | External APIs |

| (User) | | Payment, Products|

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|Process: 1.1-User | | Process: 1.2 -Fetch |

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| Process: 1.3 - Browse|

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| Process: 1.4 - Add to | | Products | | Cart |

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| Process: 1.5 - View |

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| Process: 1.6 - Checkout | | Cart | | and Payment Processing | |

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**Explanation**:

* **Process 1.1 (User Authentication):** Users sign up or log in to access the app.
* **Process 1.2 (Fetch Product Data):** The app retrieves product details from an external API.
* **Process 1.3 (Browse Products):** Users browse available products.
* **Process 1.4 (Add to Cart):** Users select items to add to their cart.
* **Process 1.5 (View Cart):** Users review their selected items before checkout.
* **Process 1.6 (Checkout and Payment Processing):** Users complete their purchase through a payment API.

### **Data Flow**

* The user logs in or registers an account.
* The app fetches product data from an external API.
* The user browses and selects products to add to the cart.
* The user reviews the cart and proceeds to checkout.
* The app processes payment via an external API.
* The order is confirmed, and a success message is displayed.

### **Additional Notes:**

* The system ensures a smooth user experience for shopping and payments.
* The cart data is maintained within the app until checkout.
* External APIs handle product details and payment transactions.
* Future enhancements could include order history tracking, product recommendations, and discount features.