Quantum Basket

Project Scope and Business Requirements

Brief Intro of our Project:

The DBMS project aims to enhance our online store's efficiency by focusing on customers, single-warehouse managers, delivery partners, and the main head office. The primary goals involve refining customer interactions, optimizing order and feedback management, and ensuring precise oversight at the warehouse level.

Customer Management:

The project is focused on enhancing the customer experience by ensuring efficient order processing and personalized interactions. A key emphasis is building a solid customer database to elevate satisfaction and encourage loyalty.

Managerial Oversight:

Warehouse managers operating on a single-warehouse basis benefit from real-time insights into inventory, orders, and transactions specific to their designated location. This approach streamlines decision-making processes, creating a more efficient and responsive warehouse environment.

Product Management:

The project focuses on maintaining accurate stock levels, facilitating smooth order fulfillment at the individual warehouse level. This comprehensive approach aims to enhance the overall efficiency of managing the product catalog.

Delivery Partner Coordination:

The project involves a strategic focus on delivery partners, aiming to monitor and optimize their activities for improved delivery logistics. This ensures that orders are efficiently and promptly delivered to customers.

Main Head Office:

The principal head office assumes a central role with consolidated control over discounts, access to warehouse transaction reports, and critical insights. This data-driven methodology ensures consistency and contributes significantly to the overall success and growth of the online retail store.

Tech Stack:

Backend - MySQL, Python,
Frontend - HTML, CSS, Javascript

For our project scope, we have divided it into four sections that will be the major stakeholders in our project:

1. User
2. Product
3. Manager/Office
4. Delivery

User Working

User Flow

Users log in using their phone number →They choose their current location or saved address to where they want their order delivered →They search for the items they want to order and add them to their cart →They check for discounts →They move to place an order→ The store accepts their order and a delivery partner is assigned to them → They have the option to contact the delivery partner → They receive their order → They can leave feedback for product or delivery.

Other user features

- A user can have multiple saved addresses if they order groceries for someone else.
- Users can access their order history and repeat past orders.
- Users can leave feedback for delivery partners and products.
- They can also contact the delivery partner and store manager.

Product Requirements:

- Products have a category, pricing, product name, etc., which both the manager and the customer can access.
- Products can be added to the cart associated with the customer's account.
- Some items have a cap on the number of purchases per customer; hence, this should also be maintained product-wise.
- Customers can see how many carts the particular product is in.
- If the product count reaches below a particular value in inventory, customers can see a relevant warning message.
- If the product is out of stock, the customer might either get notified before or in the middle of their transaction that the product is out of stock.
- The product details and FAQ sections are visible to the customer and the manager.
- Product reviews are accessible to the store manager.

Office/Manager Requirements

Manager Flow:

Customers place orders → Order is received at the head office → Head Office checks for the warehouse nearest to the address → Warehouse/Manager is informed → Checks Inventory → Creates the cart → Checks the transaction → Gives order to Delivery Partner

In-Depth Details:

- The customer places an order, triggering the central order fulfillment process at the main head office.
- The head office selects the branch based on minimal pincode difference between the warehouse and customer addresses. In case of equal proximity, the choice is randomized using the warehouse ID, favoring the one with the lowest ID.
- The selected branch's manager checks real-time stock availability and, if sufficient, creates a cart for the order.
- After a thorough review, the order is assigned to the delivery partner. The manager monitors delivery progress until completion.

- The manager tracks all transactions and maintains a comprehensive history of customer orders, delivery partners, and item attributes.
- The historical data supports recurring orders and facilitates discount management, approved either singularly for a warehouse or collectively by the main head office.
- The manager oversees the creation of a reliable database for delivery partners, providing access to their history.
- Feedback and complaints are recorded at the warehouse level.
- In case of unavailable stock with completed payment, the system redirects the payment to the customer.
- The manager has the authority to employ and maintain a database of staff members to streamline operations.

Delivery Partner Flow

- Order is directed to a random delivery person.
- The delivery person could accept/decline.
- When accepted, a delivery person gets information about the customer (name, contact)
- The customer and manager get information about the delivery person (name, contact)
- This delivery information is stored in a database, and history is maintained.
- The delivery person updates the order status after the delivery
- Customers could leave reviews/complaints for the delivery partner
- This will be highlighted in the managers' records
- This history can be used to track the efficiency of delivery partners, and managers could incentivize them.

Contributions:

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Delivery Requirements, Brief Intro to Project - Vedika Agarwal (2022566)