DBMS Project

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AffordiKinG - an online retail store

Project Scope :

Our goal with this application is to create a system for an online retail store that allows customers to browse and buy products from the comfort of their homes with very affordable prices. Given the busy schedules of today's generation, there's often not enough time for them to shop in person. Our application, "AffordiKing!!", will provide a platform where users can take their time to select products after thorough research and get their products within 30 mins with appropriate discount.We also manage a Royal rewards system.The application will utilize a relational database like MySQL to handle and manage data related to customers, products, and transactions. The store will offer a diverse range of unique products such as clothing, electronics, medicines,groceries and more.The staff will adhere to a specific hierarchy, with clear responsibilities assigned to managers, heads, etc. In practical situations, offering diverse payment methods is essential. Additionally, it is imperative to establish a robust verification system that can furnish ample data to populate all tables, facilitating thorough testing of queries.

StakeHolders:

- **Customers: These are the end-users utilizing the application to explore and make purchases.**
- **Employees: This includes the personnel overseeing the online store's operations, encompassing customer service, order fulfillment, and other responsibilities.**
- **Database Administrator: This individual or team is tasked with managing the database systems, ensuring data integrity, security, and optimal performance.**
- **Suppliers: Entities providing the goods sold by the online store, playing a pivotal role in inventory management.**
- **Vendors: External service providers offering various services such as payment processing, shipping, and marketing.**
- **Investors/Shareholders: Individuals or groups who have invested financially in the online retail business.**

Functional requirements:

In the realm of a retail establishment, vendors and stores serve as pivotal stakeholders responsible for overseeing all offline systems and managing data.

- ☐ **A dedicated database is employed to house detailed product information, including attributes such as a unique product ID, product name, type, and price. This information is meticulously categorized and subcategorized to facilitate easy differentiation and identification of products within each category.**
- ☐ **Similarly, a separate database is maintained to store customer details, encompassing attributes such as user ID, phone number, username,**

address and city . Upon each order, a unique user ID is generated, and an OTP is dispatched to the registered mobile number for verification. Customers retain the flexibility to modify their personal details in real-time, reflecting instant updates in our database.

- ☐ We plan to oversee a loyalty program called the Royal Rewards system, where customers earn points corresponding to their expenditures. These accumulated points can then be redeemed within the app to obtain complimentary items.
- ☐ Access to their account information is granted to customers through a login system requiring an email address and password. Exclusive vouchers and coupons are offered to customers based on specific conditions, including first-time user incentives and special discounts for regular customers and also give some extra discount for some non -active users to gain their lost interest and attention here.
- ☐ Additional discounts are applicable for substantial shopping, determined by specified conditions such as a fixed threshold price. Daily and festive offers further enhance the incentive structure. A cart system is implemented to store customer orders, allowing users to save their orders for future purchases.
- ☐ An assumption underlying the cart system is that customers can save orders for future purchase, constituting a seamless cart flow system. Regarding login procedures, the addition of new employees by category heads and branch managers requires physical verification and deliverables before activating employee logins.
- ☐ Stores and vendors meticulously maintain data on daily product sales, returns, faulty products, and overall sales. A comprehensive transaction system caters to both online and cash-on-delivery payments, with each transaction featuring attributes like a unique transaction ID, OTP for security, account details, and delivery charges based on distance.
- ☐ Functional requirements extend to customer order details, order history, wish lists, rewards, gift cards, notifications, and top offers. Important timestamps, including order and delivery dates and times, are diligently recorded.
- ☐ The database serves as a repository for customer information, purchase history, product details, inventory levels, and transaction data, supporting reporting and analytics features. Access to the database is restricted to

authorized users, such as the database administrator, and regular backups are performed to ensure data availability and prevent loss.

- [ ] Feedback data is stored based on statements, remarks, and star ratings for various aspects like timely delivery. Product availability is adjusted based on warehouse proximity to the customer's pin address.

Technical requirement:

The technical specifications necessary for our database design are outlined in the technical requirements. Privacy measures are implemented through the use of the "grant command," allowing users to access specific information or perform designated roles.

- To uphold system atomicity, a mechanism is in place to address technical issues like internet connectivity that may cause a customer-initiated transaction to stall. In such cases, a reverse transaction is available to refund the amount to the customer's account.
- Each table will possess its own schema, and the relationships between them will be clearly defined.
- The backend infrastructure will be supported by MySQL, Flask, and Python, with MySQL employed for the database design.
- To ensure performance, reliability, and availability, customers will be restricted from accessing the financial details of the store and vendors. Similarly, delivery personnel will not be granted access to sensitive customer information such as account numbers and bank details.
- The frontend development will incorporate HTML, CSS, React JS, Python, Django, and Node JS.
- Efforts will be directed toward creating simple and user-friendly navigation pages, facilitating customers in easily identifying and organizing their desired products.