Project :

The Hawwk Store

~Shop till you Drop

An Online Retail Store

Assignment-1

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Objective

To develop an online retail store that allows customers to browse and purchase products from a plethora of categories, including personal goodies, electronics, home appliances, and more.

#Important Note

The project's scope is limited to the following features(below), and any additional requirements will be evaluated and considered for inclusion in future phases of development.

Project Scope

Our project deals with making and managing an online retail store. In this project, we have primarily focused on creating an end-to-end database management system using MySQL. With the rise of e-commerce, it has become essential for businesses to have an online presence. An online retail store is a robust platform that allows customers to browse and purchase products from the comfort of their own homes. Our project aims to bridge the gap between sellers and consumers and make the process of shopping hassle-free and convenient.

The store will allow customers to browse and purchase products online. Customers can create an account, view their order history, and track the status of their current orders.

Products will be organized into categories and subcategories for easy browsing. Customers can search for products by keywords and filter their results by various criteria such as price and brand. A shopping cart feature will allow customers to add multiple items to their orders before checking out.

A secure checkout process will ensure that customers' sensitive information is protected. Upon successful completion of their order, an order confirmation will be shown to customers. A back-end admin panel will allow store staff to manage products, orders, customers, and other website content.

It would have all the added features to make the process more efficient and smooth. We have also included Git for version control to ensure all team members have the latest version of the database with them.

Stakeholders

- Admin-> Development team responsible for creating and managing the online store and its database.
- Customers-> The users of the platform who will buy products from the store.
- Sellers-> Manufactures/Distributors who will list their products on the platform and sell the products to consumers as per the demand.
- Logistics Agency-> Company/Group of people responsible for delivering the ordered products to the shipping address.
- Warehouse Owners-> People responsible for providing a storage facility for the ordered product to be delivered by the logistics agency.

Functional Requirements

- Customer account-> Customers should be able to create a new account, log in to their existing ones, view their order history, and track the status of their current orders.
- Product Browsing and Search-> Customers should be able to browse products by category and subcategory and search for products by keywords. Products should contain relevant information such as name, description, price, and image.
- Shopping cart-> Customers should be able to manage their Shopping carts, like adding products to their shopping cart, viewing the contents of their cart, and updating the quantity of items in the cart. It must also support product deletion & checking for its availability before its addition to the cart.

- Checkout-> The Checkout process for the Shopping cart should be as seamless as possible. Customers should be able to proceed to checkout and modify/enter their shipping and billing information. It must be noted that the checkout process should be secure and must protect customer-sensitive information.
- Payment-> The Transaction process should follow the basic principles of atomicity & concurrency.
- Order confirmation-> Customers should receive a confirmation of their order.
- Order Tracking-> Customers should be able to track the status of their order and should be notified of the expected delivery date.

- Promotions and Offers->The website should have a feature to apply offers & discounts on products or orders.
- Back-end Admin Portal-> Admin should be able to manage products, orders, customers, and other website content through a back-end admin portal.

#Important Note

This is just an exhaustive list, capturing the basic requirements of the online retail store. The actual functional requirements will depend on the need and features of the store.

Tech Stack

- Database-> MySQL will be used as the primary database management system to store and manage customer information, product information, and order information.
- Programming language-> A server-side programming language, Python, will handle the application logic and interact with the database.
- Front-end framework-> React JS will be used as a front-end framework to create the user interface and handle client-side interactions.
- Web Framework-> Flask framework with Python will be used to handle the web framework and send the content to the front-end framework.

#Important Note

Note: This is just a general list of technical requirements; the actual requirements will depend on the need and features of the store.

Technical Requirements

- Access Constraints ->
  - The Admin shall have complete control over the database, including all the relations in it, except the user's sensitive information, like the login credentials or bank account details, to ensure the complete privacy of the user.
  - Customers can only access and modify their records, not anyone else's data.
  - Customers shall be able to view and buy products currently listed by the Admin, not those removed or put on standby.
  - We intend to keep the product categories mutually exclusive. Therefore, each product shall be present in only one category.
  - The Admin shall only access and manage the database of sellers and logistics.
  - If multiple coupons are available to the customer, only one may be applied to an order. However, offers on individual products may be allowed along with coupons.

Additional Technical Requirements

- Concurrency -> The database should allow simultaneous access to the users, i.e., more than one user (concurrent access) can access the database at any given time, keeping track of the available stock of the products.
- Query Optimization -> The database must ensure that a response to a query does not take a considerable amount of time, i.e., the database should allow users to get the content of their interest at the click of their fingertips without making them wait for a response from the system. This can be done using the methods like indexing, applying filters on data, sorting etc.
- Consistency -> The database should provide the latest content to a user for their perusal, i.e., the database must ensure that the latest/updated/modified version of data is displayed to the user when a query is performed.

- Security -> The database must ensure that the user's privacy is maintained at all times & should be foolproof of any leak of personal information. There are various methods to achieve this, namely User Authentication, Encryption, etc.
- Durability & Atomicity -> The database must be designed in such a way that it shows perseverance against system crashes & failures.
- Scalability -> The database should be able to handle large chunks of data without performance lag & system failures.

THANK YOU

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