Team-80
Vidur Goel - 2021364

Online Retail Store

Project Scope :

With the advancement seen in the past decade, online shopping is most recent phenomenon in online space. Men and women of all age groups visit ecommerce websites To buy daily necessities of life.
In this project, we are planning to design one of those e-commerce websites, an online end-to-end database application for an online retail store. Our main aim here would be to allow customers to browse and purchase products from various categories. The application should have a user-friendly interface and a fast and seamless searching and checkout process. For that, our database should be able to effectively retrieve, store and manage vast piles of data to support these operations.

Stakeholders:

- Customers (People who are buying through the application of ours)
- Sellers (wholesalers / retailers that are selling the products)
- Admin
- Delivery Agents

Technical requirements and Teck Stack:

- There are some constraints regarding the database in application.
  Some of those are:
  - Quantity for a single item belonging to any category would be limited i.e, no product would be having infinite quantity in the database.
  - Every category, product, customer, seller would have a unique id associated with them.
- Also different details of different stakeholders will have different privileges allotted to them.

Back end:

- We will be using:
  - MySQL
  - Flask
  - Python

Functional Requirements:

As we know in order to make a good fully functional e2e database application we need to design a good back-end database management system that would be managing all the data, and as we know according to the textbook definition:

A good database management system provides efficient, reliable, convenient and safe multi-user storage of and access to massive amounts of persistent data.

Therefore, our e2e database application will be having following functionalities:

- Data Integration (massive data management) :
  As the name suggests our application should be able to integrate the data from various sources such as customer data, seller's data, inventory data, sales data, and many more into our database in a systematic manner.

- Data Security and Compliance (secure data):
  A security measure must always there be ready to be implemented to protect the valuable data of customers and dealers/sellers from unauthorized access and manipulation. It should also be in compliance with all relevant rules and regulations.

- Payments:
  Application should also have ability to integrate various payment gateways as well as able to handle massive transactions.

- Backup and recovery :
  A backup of the database must always be there maintained so that in case of any emergency we would be able to recover the data.

- Order and Inventory management:
  Application should be able to keep track of orders, shipping, delivery as well as stock level of products.

- Product Catalog Management:
  Application should be able to store, delete as well as modify products belonging to different categories and able to modify their attributes on time.

- A smooth login/sign in, sign up, log out/sign out must be there for new/old users in our application.

- The ability to search and navigate within our application should be as efficient and fast as it possibly could be.

- There should be various sorting/filtering methods available within our app in order to sort products based on the user needs

- Application should be able to track, update different promotions/discounts that would be available on the product by sellers/admin on timely manner. And customers should be able to browse and apply them easily.

- Data modeling, data warehousing principles should be applied to the database of our application.

- Application should be able to analyze the customer data, their sales data and predicts some trends and make decisions and marketing campaigns based on that data.