Digital Konbini
An Online Retail Store Management System

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1 Scope

The project aims to develop an bussiness-to-consumer (B2C) database application for an online retail store. The primary focus is crafting a robust back-end system that will efficiently manage and optimize the interactions between various data entities. The design will encompass a detailed selection of data entities, establishing relationships, and the imposition of constraints to ensure data integrity. This project addresses data duplication and concurrent access challenges while emphasizing the strong protection of crucial information. Additionally, the application will be demonstrated through a user-friendly front-end interface.

The vendor is responsible for supplying the retail store with products and has the authority to manage product information. They can extend special offers for their products, and their contact details must be stored securely. The vendor also has the ability to monitor their product sales.

Customers are the main patrons of our store. They can log in to their accounts using the credentials they have set. Customers have the ability to add products to their shopping carts and remove items at their convenience by browsing various product available at the store. Additionally, they can review their recent orders and receive product suggestions based on their previous purchases. Access to customer care and support services is also available to them.

The admin serves as the supervisor of the retail store. The admin is responsible for informing vendors about products that are out of stock and for reviewing the details of the products provided by vendors to make informed decisions on purchases. They have the authority to manage and categories products to the database. Additionally, the admin can have access to the profit/loss data at any point of time. For enhanced security, their contact information is stored and utilized during the sign-in process.

2 Objectives

- Define data entities such as Customers, Products, Orders, and Vendors.
- Establish relationships and constraints between these entities to ensure data integrity.
- Implement mechanisms for populating the database with fictional data.
- Develop a user-friendly GUI interface to facilitate seamless navigation, product search, and efficient order management.
- Inventory Management: Track product availability and update inventory levels. Notify vendors and admin when a stock falls below a certain threshold.
- Implement password protection and account recovery mechanisms for all accounts to protect user data and transactions.
- Track sales data, generate sales reports, and provide insights for decision-making.

3 Stakeholder & Functionalities:

- **Customers**
  - Register / Login
  - View Account Details
  - Browse Products
  - Place Orders
  - View Order history
  - Manage their cart
  - Access to Customer Support
- **Vendors**
  - Register / Login
  - View Account Details
  - Allows Offers on the Products
  - Manage Product information
  - Track their product Sales
- **Admin**
  - Access to data of Customers
  - Access to data of Vendors
  - Access to Sales of Products
  - Manage to Stock of Products
  - Apply Discount and Offers
  - Manage Customer Support
  - Add/Remove Products

4 Constraints on Stakeholders:

- **Customers** : A Customer cannot change information of other user, products and vendor
- **Vendors** : A Vendor cannot access information of other Vendors and Customers
- **Admin** : Admin cannot change information of Customers, Vendors

5 Tech Stack:

- **Database** : MySQL
- **FrontEnd** : HTML, CSS, JavaScript
- **Backend** : Java
- **Tools** : Overleaf, VSCode, Latex

6 Contributions:

- **Himang Chandra Garg** : Research and Content Gathering for Initial document.
- **Nishil Agarwal** : Text writing and Drafting
- **Tizil Sharma** : Editing and Proofreading
- **Prince Yadav** : Revision and Finalization