# TECHNICAL DESIGN DOCUMENT (THIRD EYE)

Aparna Santhosh (8899699)
Aswani Balan (8816918)
Chippy Satheesh Beena (8822103)
Sreelekshmi Pulickichiraveli (8901347)

1. **Application Overview**:

E-Commerce application that contains voice recognition feature to assist visually impaired customers to help with the purchase. When a user open application, it will interact with the user to check whether the user require a blind session, if user acknowledge, THIRDEYE will enable the blind session by disabling the touch option and enabling the voice recognition feature. So, if the user is a visually impaired, they can easily complete the shopping using this feature, if the user is not, then this option can be disabled manually in the application itself. THIRDEYE will allow the user to search products by providing them recommendations through voice and if the user is doing a search it will confirm with the user about the products and its features.

## 2. System Architecture:

The THIRDEYE follows a three-tier architecture:

- Frontend: The frontend is built using Flask providing an interactive user interface that support voice assisted browsing and purchasing products. It communicates with the backend via different APIs.
- Backend: The backend is developed using Python. It handles voice recognition, user authentication, product management, order processing, and integration with external payment gateways.
- Database: THIRDEYE uses MySQL to store product information, user data, order details, and other relevant data.

## 3. User Interface Design:

Component checklist

The user interface of the THIRDEYE mainly focuses on visually impaired users and provide simple navigation throughout the purchasing process.

It includes the following key pages:

- Homepage: Displays featured products, promotional offers, and search functionality.
- Product Listing: Shows a list of products with filters and sorting options.
- Cart: Allows users to add products, modify quantities, and proceed to checkout.
- Wishlist: Users can add products to their Wishlist by clicking on an "Add to Wishlist" button or icon. This action saves the selected item to their Wishlist for further reference.

- User Account: Enables user registration, login, and management of personal information and order history.
- User Reviews and Ratings: Include user-generated reviews and ratings for products to build trust and aid in the decision-making process. Display reviews prominently and allow users to filter and sort reviews based on helpfulness, recency, or rating. Provide an option for users to leave their own reviews to encourage engagement.
- Category: Present the main categories or top-level categories on the main page or navigation menu. Users can click on these categories to explore the products within them. Each category listing can include an image or an icon to provide visual cues and make it easier for users to identify the category.

*Fig: Data Mapping diagram of THIRDEYE:*
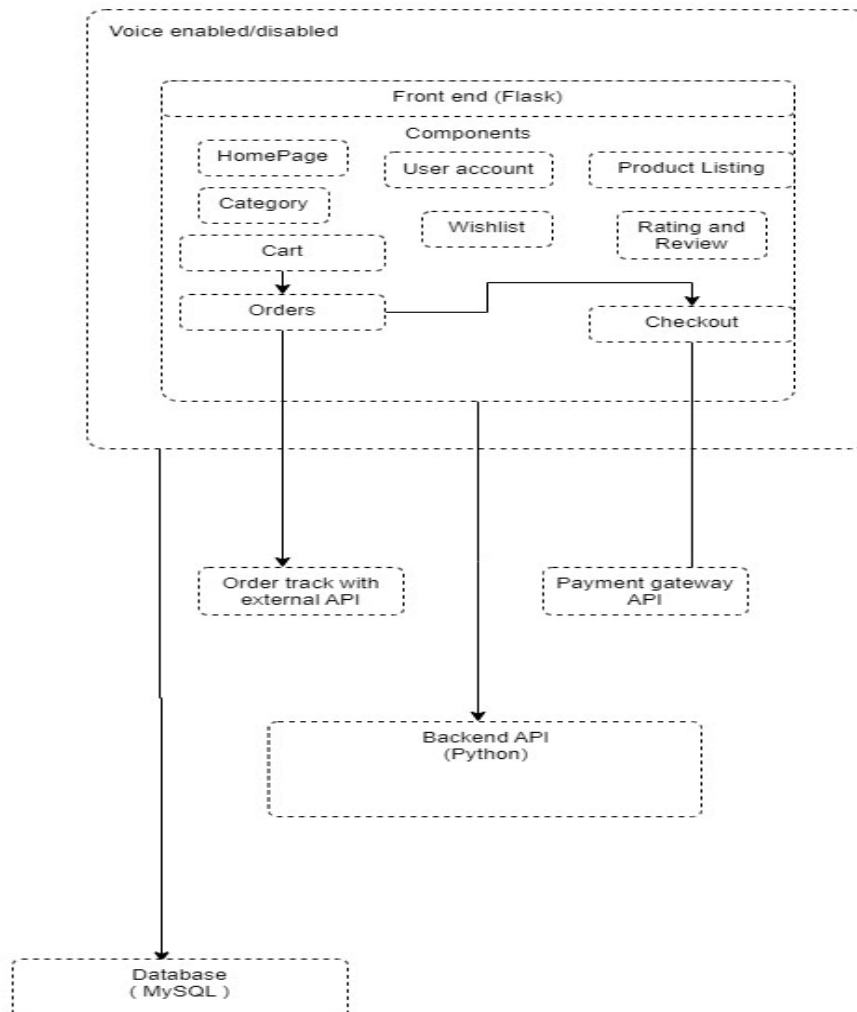


## 4. Database Design:

The database design for THIRDEYE includes the following tables:

- Users: Stores user information such as username, email, password, and address details.
- Products: Contains product details like name, description, price, quantity, and seller information.
- Seller: Stores seller information such as, seller name and company details.
- Coupons: Stores the details of the discount coupons
- Payment: Stores information about payment details
- Inventory: Stores information about seller inventory.
- OrderLine: Stores information about each product in an order.
- Login: Contains details about user login like username and password.
- Category: Stores information about the category of products
- Order: Stores order information, including user details, product details, order status, and payment details.
- Review: Holds user reviews and ratings for products, linked to the respective product and user.
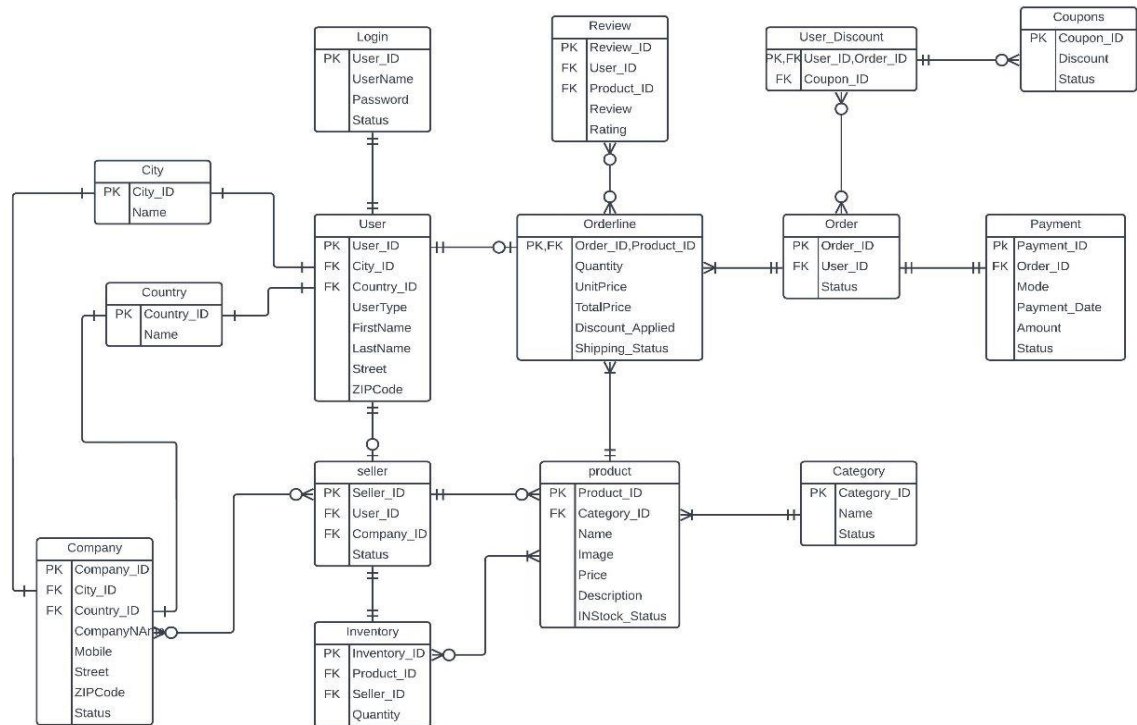


*Fig: ERD of THIRDEYE*

## 5. Implementation Plan

The development process for the THIRDEYE will follow the Agile methodology and include the following milestones:

- **Milestone 1(July 09):** Setting up the development environment, including installing necessary software and configuring the project structure.
- **Milestone 2(July 16):** Implementing the frontend UI components and integrating them with the backend APIs for basic functionality like product listing and details.
- **Milestone 3(July 23):** Implementing user registration, authentication, and cart management features.
- **Milestone 4(July 30):** Adding order processing functionality, including payment integration and order history management.
- **Milestone 5(Aug 06):** Conducting comprehensive testing, bug fixing, and performance optimization.
- **Milestone 6(Aug 13):** Final deployment and production readiness.