

Grocery Store Application Project Report

Introduction

The Grocery Store Application is a web-based platform designed to facilitate grocery shopping for users developed using Flask, Jinja Templates and Bootstrap. The application allows users to browse and purchase products, while also providing store managers with the tools to manage inventory and product information efficiently. This report provides an overview of the project's objectives, implementation details, and key features.

Objectives

The main objectives of the Grocery Store Application project are as follows:

1. **Multi-User Support:** Create a multi-user platform with separate logins for customers and store managers (admin).
2. **Inventory Management:** Enable store managers to add, edit, and remove product categories and products efficiently.
3. **Product Search and Cart:** Allow users to search for products, add them to their shopping cart, and view cart contents.
4. **Purchase Functionality:** Implement a purchase mechanism that calculates the total amount to be paid by users.
5. **APIs and Validation:** Develop APIs for CRUD operations on sections and products, and ensure proper validation for all user inputs.

Technologies Used

The following technologies and frameworks were utilized in the development of the Grocery Store Application:

- **Flask:** Used for application code.
- **Jinja2 Templates:** Employed for HTML generation.
- **Bootstrap:** Applied for styling the user interface.
- **SQLite:** Utilized as the database management system.
- **Python:** The primary programming language for backend development.

Implementation Details

User Authentication

The application features a user authentication system with separate logins for customers and store managers. While security measures have been implemented, it's essential to note that the focus of this project is on functionality rather than security.

Inventory Management

Store managers have the capability to manage product categories and products. They can create, edit, and remove sections/categories and products, including allocating products to specific sections.

User Management

Store managers have the capability to manage customer. They can remove users when required.

Product Search and Cart

Customers can search for products based on categories or specific criteria like price and purchase products, adding them to their shopping cart. The application also displays the availability status of products.

Purchase Functionality

A key feature of the application is the ability to calculate the total amount to be paid by customers based on the products in their cart. This total is calculated dynamically, not stored in the database.

APIs and Validation

The project includes APIs for CRUD operations on sections and products, providing a structured interface for interacting with the application. Additionally, all user input fields undergo validation to ensure data integrity.

Additional Features

While not part of the core requirements, the following optional features have been considered for future development:

- Styling and Aesthetics: Enhancing the user interface with additional styling.
- Proper Login System: Implementing a proper designed Login System.

Conclusion

The Grocery Store Application project successfully fulfills the core requirements, providing a functional platform for users to shop for groceries and store managers to manage inventory efficiently. The use of Flask, SQLite, and other technologies ensures a responsive and interactive user experience.