

# Grocery Store (Web Application)

## Author

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Hello, I'm a working professional and a student of the BS Degree in Data Science and Applications. I work as a Technical SEO analyst at Growisto and am passionate about using data science to solve real-world problems and create positive impact. I am always eager to learn new tools and techniques, and to collaborate with diverse and talented teams.

## Description

The project aimed to develop a web application for a grocery store, addressing the diverse needs of both customers and store managers. The focus was on creating a seamless and user-friendly experience in an online grocery shopping environment.

## Technologies used

**Flask:** v2.2.3

**Python:** v3.10.12

**Flask Extensions:** Flask-SQLAlchemy, Flask-RESTful, Flask-Security

**Frontend:** HTML, CSS, Bootstrap

**JavaScript and Vue.js** (Frontend Framework)

## Purpose of Technologies:

**Python:** Python is used as the primary programming language for its readability, extensive libraries, and compatibility with Flask

**Flask:** Flask is a lightweight web application framework, which we are using in our project.

**Flask-RESTful:** It is an extension of the flask framework which allows implementing REST ('Representational State Transfer'), we are using it to implement our Post API implementation.

**Flask-SQLAlchemy:** It is a wrapper over SQLAlchemy that deals with SQLite3 Database.

**Flask-Mail:** An extension for Flask to support sending emails, used for notification and communication features in our application.

**flask\_caching:** An extension for caching in Flask applications, enhancing performance by storing frequently accessed data.

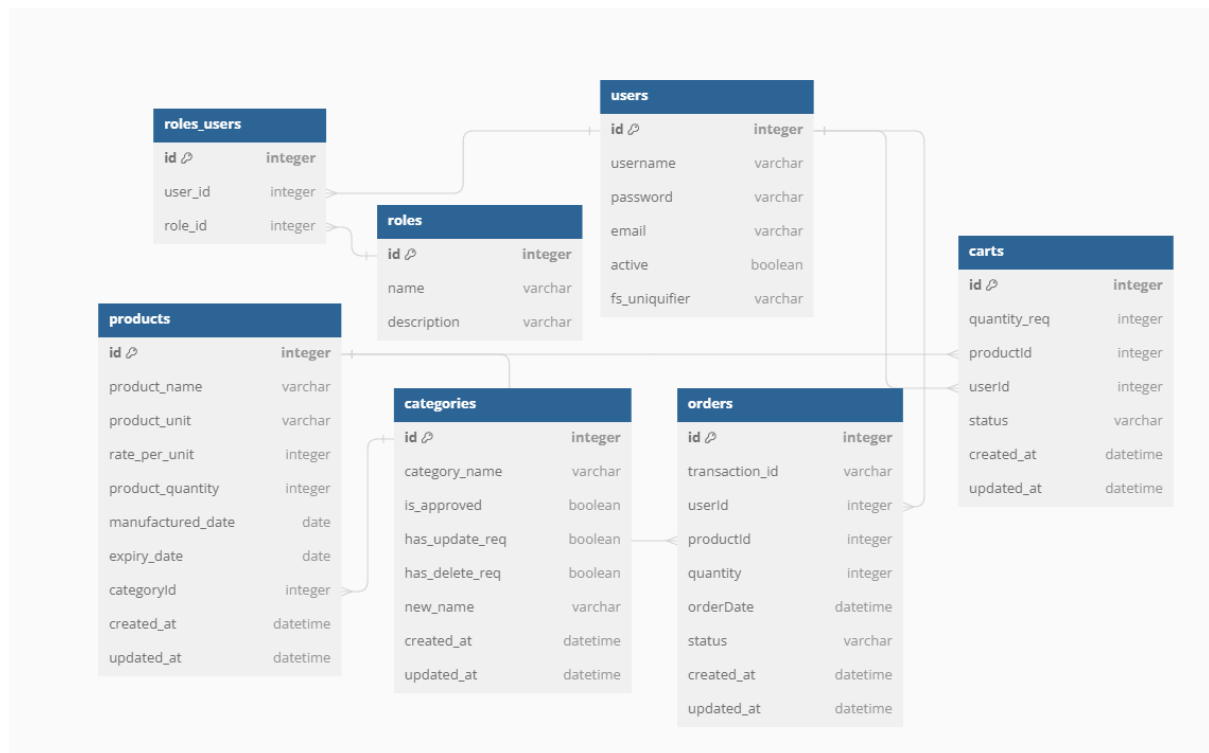
**Flask-Security-Too:** An extension for Flask that adds security features like user authentication and authorization to your application.

**Flask-Security:** Similar to Flask-Security-Too, an extension for adding security features to Flask applications.

**Frontend Technologies:** HTML, CSS, and Bootstrap have been used for creating a responsive and visually appealing user interface.

**JavaScript:** A versatile scripting language for creating dynamic and interactive web content, used extensively in our web application's frontend development.

**Vue.js:** A progressive JavaScript framework for building user interfaces, utilised in our project for its reactive components and efficient data handling capabilities.



## DB Schema Design

The User table manages user authentication with unique usernames and email addresses. Category and Product tables establish relationships for organised product categorization. The Cart table allows users to add multiple products for convenient shopping. The Order table captures user transactions, linking to specific products and users. The database design ensures a scalable and efficient structure for the grocery store application.

## API Design

The design of the API centres around essential capabilities, providing endpoints for processes like user registration and authentication (/user-register, /user-login), along with dynamic management of products (/manager-category, /manager-product/{category\_id}). It employs role-based access control to guarantee secure transactions, differentiating between the roles of customers and managers. Such a modular strategy lays the groundwork for scalability and the possibility of adding new features in the future.

## Architecture and Features

This project adopts a modular framework, segregating controllers, models, and templates to ensure clarity and easy maintenance. Controllers are tasked with managing user interactions, models oversee data handling, and templates are responsible for generating views. Fundamental functionalities encompass user authentication, navigating through products, and executing orders. Moreover, supplementary features such as live inventory updates are integrated to elevate the user experience.

## Video link

<https://drive.google.com/file/d/1mL-ZxHyiCpuBTQ5RHpcroavCzExB5DcG/view?usp=sharing>