Design Document for Project: BiteNow

Green Team

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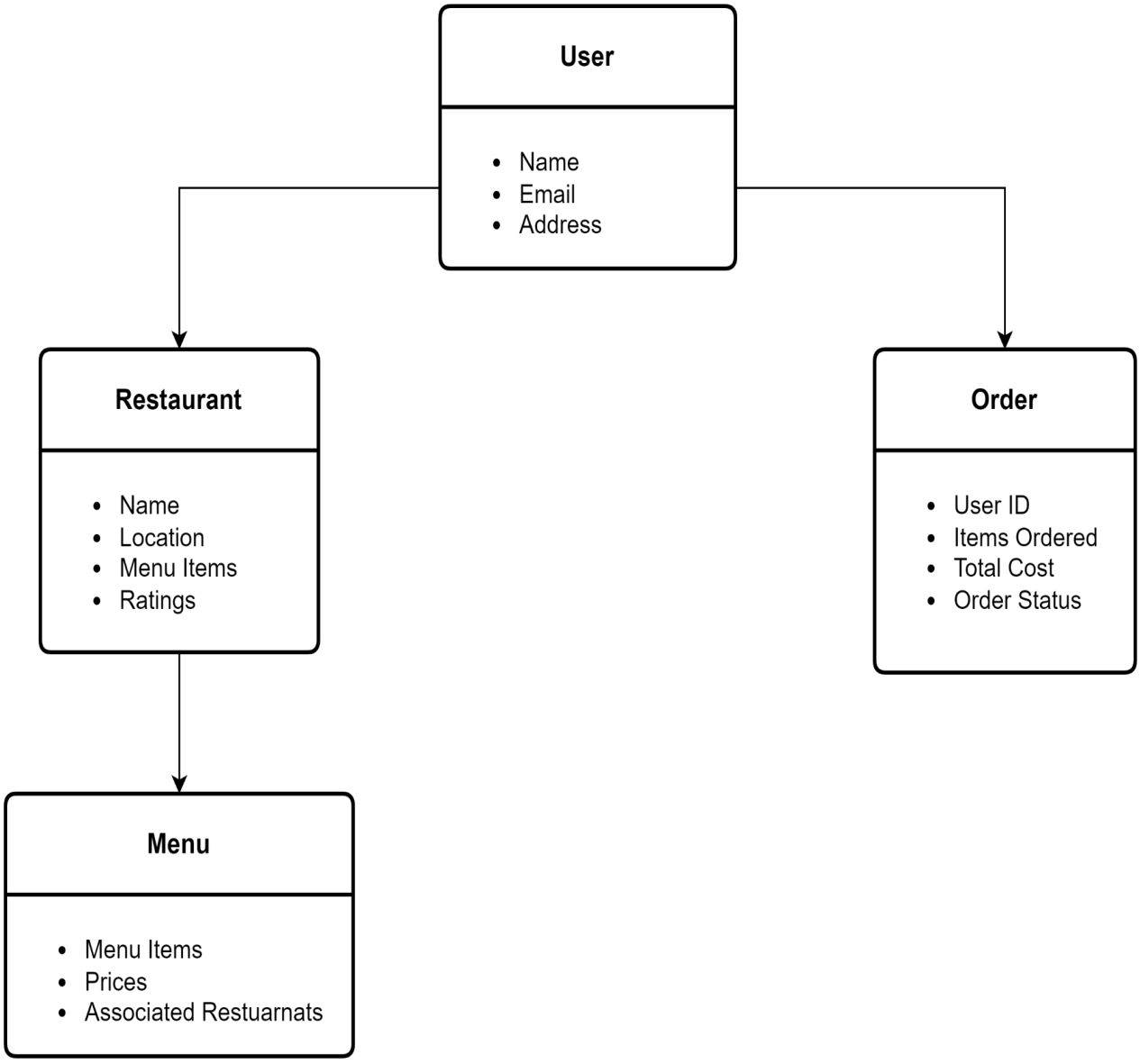
Introduction

The purpose of this design document is to provide a framework for developing a food delivery service website targeted at universities and colleges in Indianapolis. This application will replicate the functionalities of a service like DoorDash, allowing students and faculty members to order food from a variety of local restaurants and have it delivered to their campuses or dormitories. The document details the system's architecture, entity relationships, class diagrams, interface designs, use cases, test cases, and comprehensive database design, ensuring all elements work together for a smooth and efficient user experience.

Regarding hardware requirements, the project will utilize personal computers, including desktops and laptops, to facilitate the completion of assignments and project-related tasks.

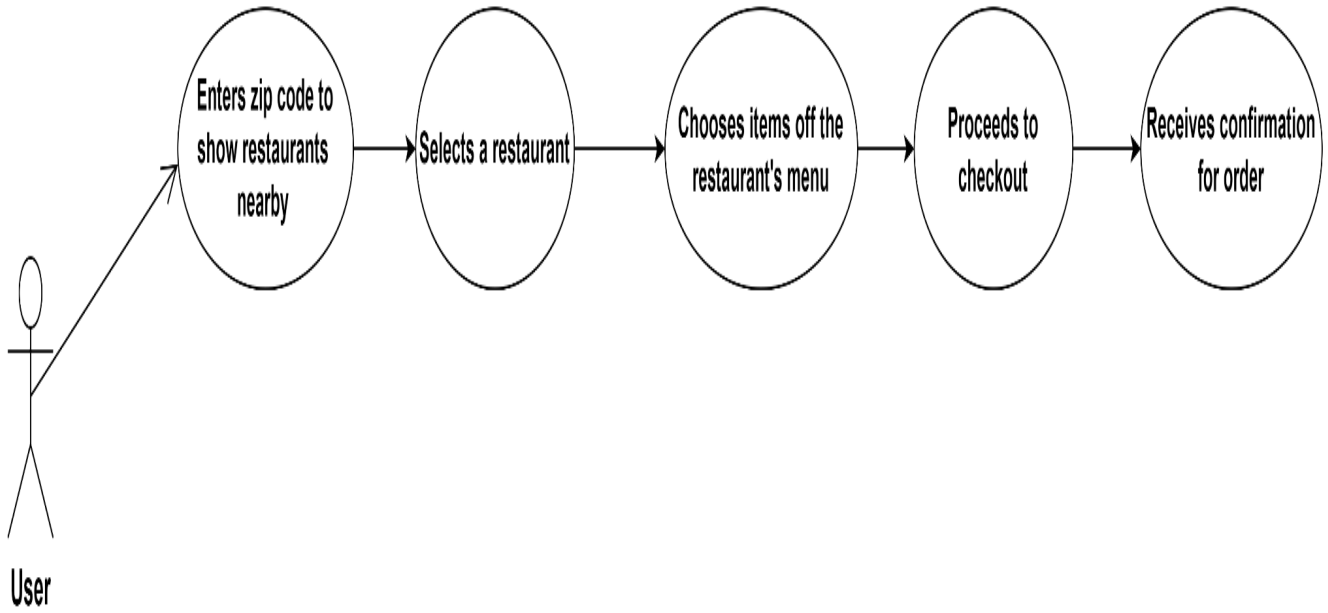
In terms of software requirements, Visual Studio Code will serve as the primary integrated development environment for Python programming. The frontend will be developed using HTML, CSS, and JavaScript, while the backend will be built on a robust framework such as Django. SQLite will be employed for database management to store user information, restaurant menus, and order histories. Furthermore, APIs will be integrated to incorporate third-party services, including mapping functionalities for location tracking.

Entity Relationship Diagram (ERD)

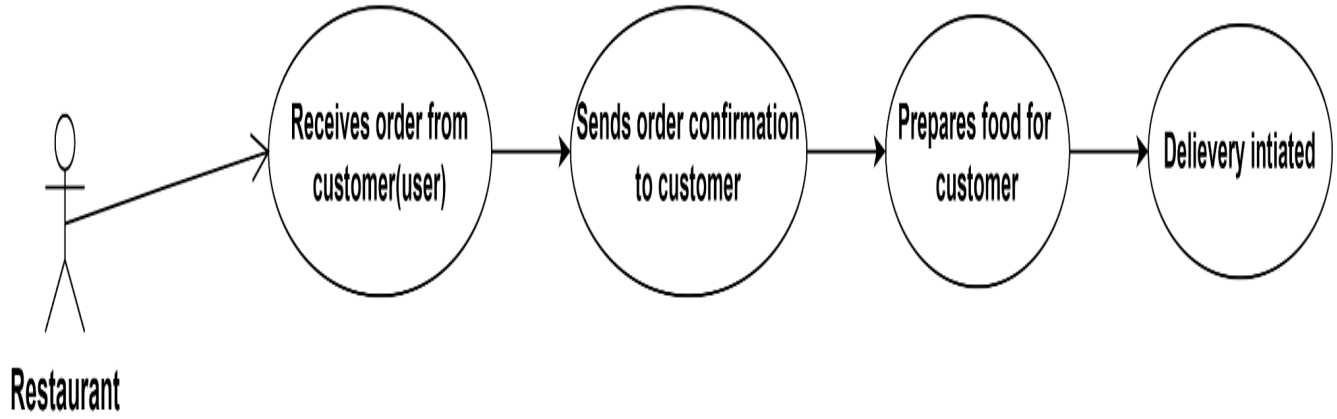


Sequence Diagrams

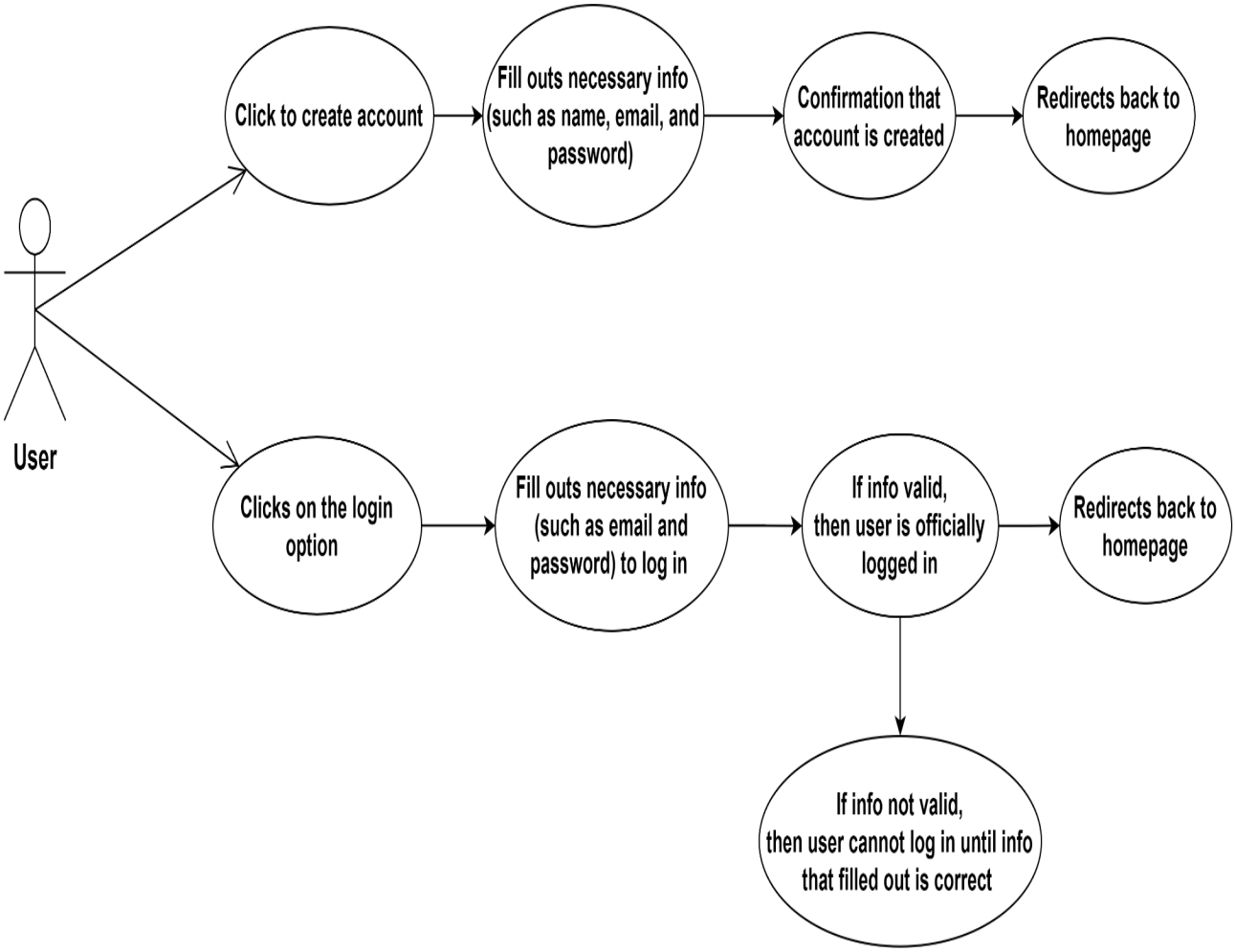
- **Placing an Order Diagram:**



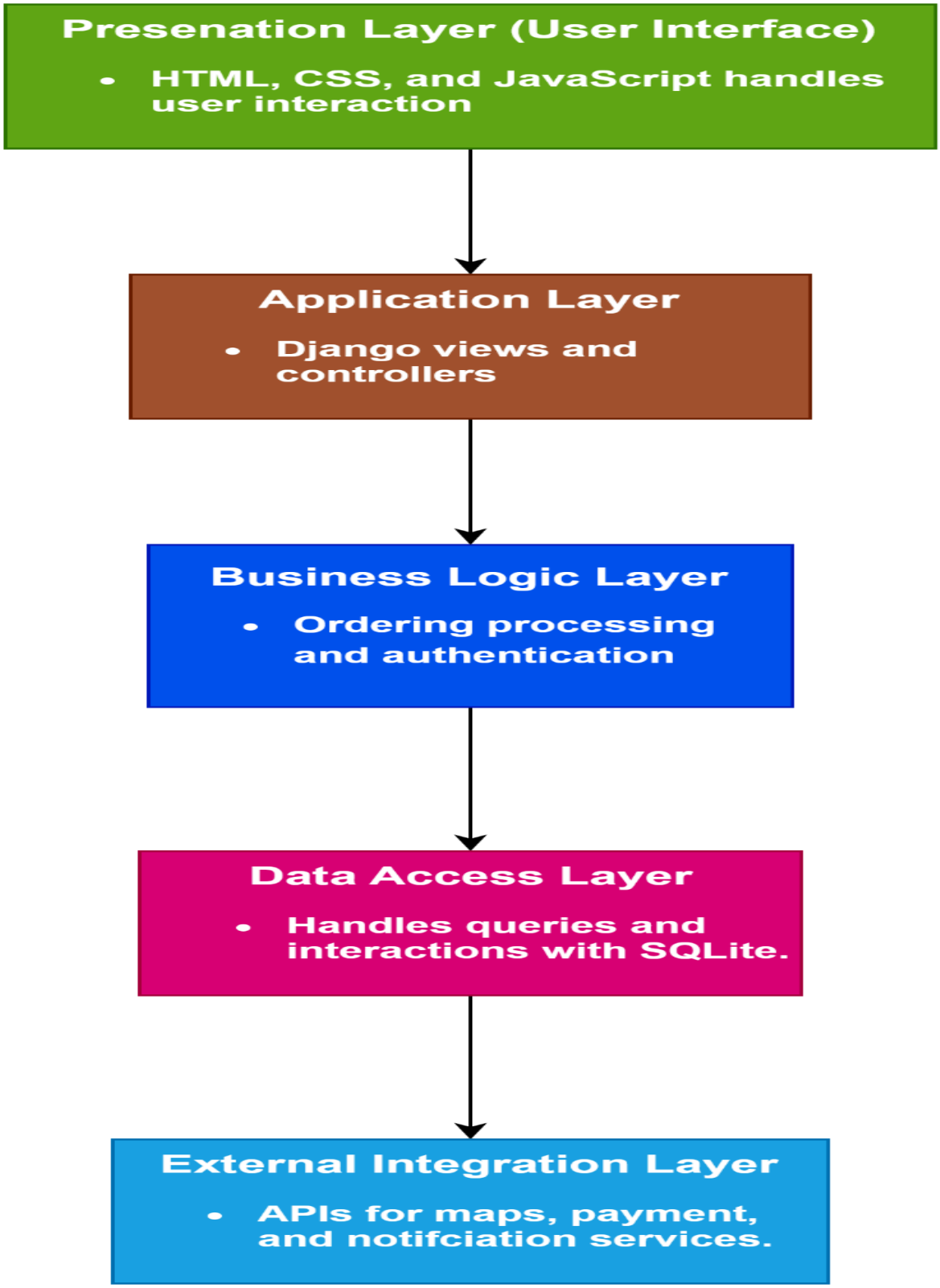
- **Restaurant Confirmation Diagram:**



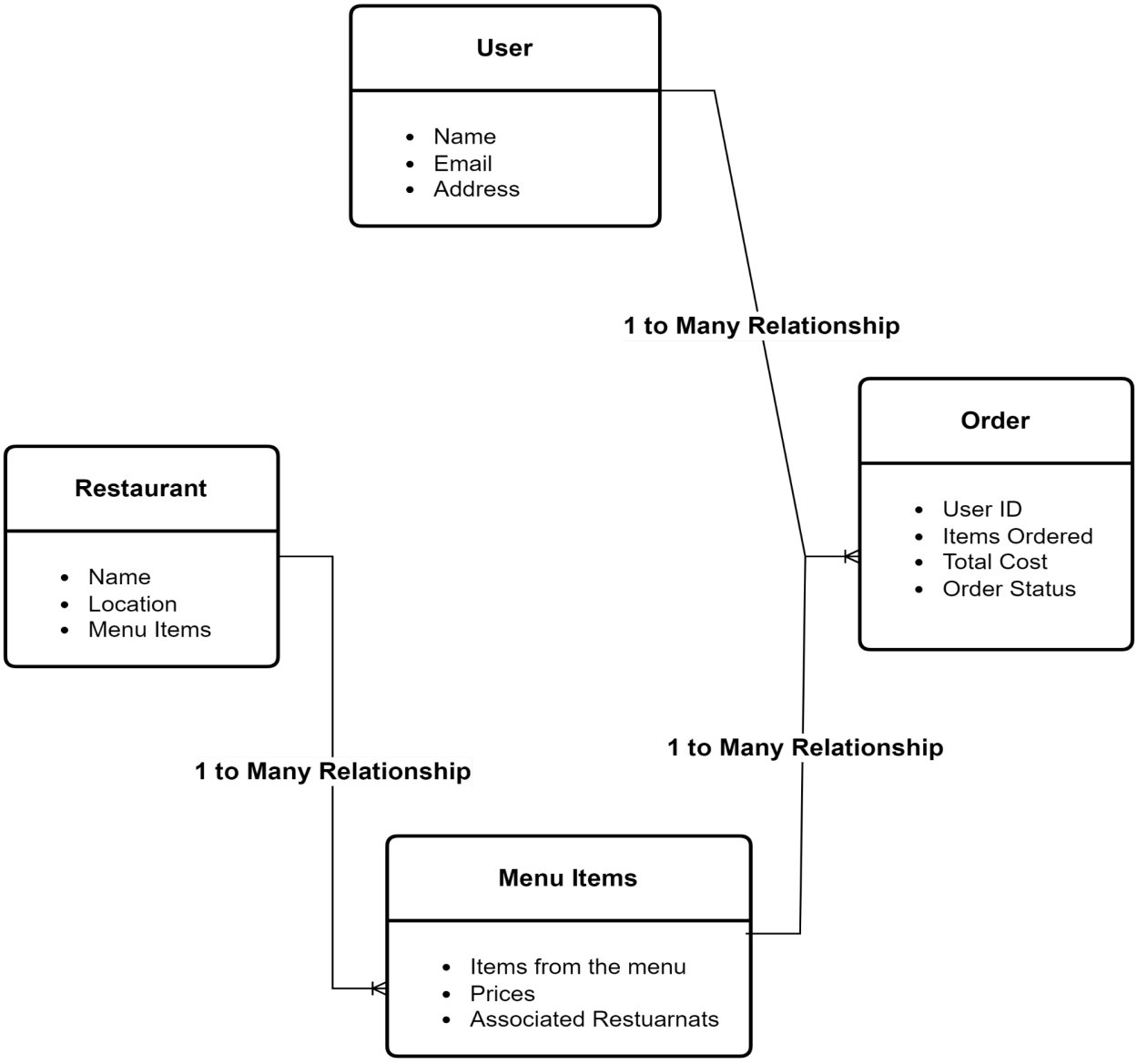
- **User Account Creation/Logging In:**



Architecture Design Diagram



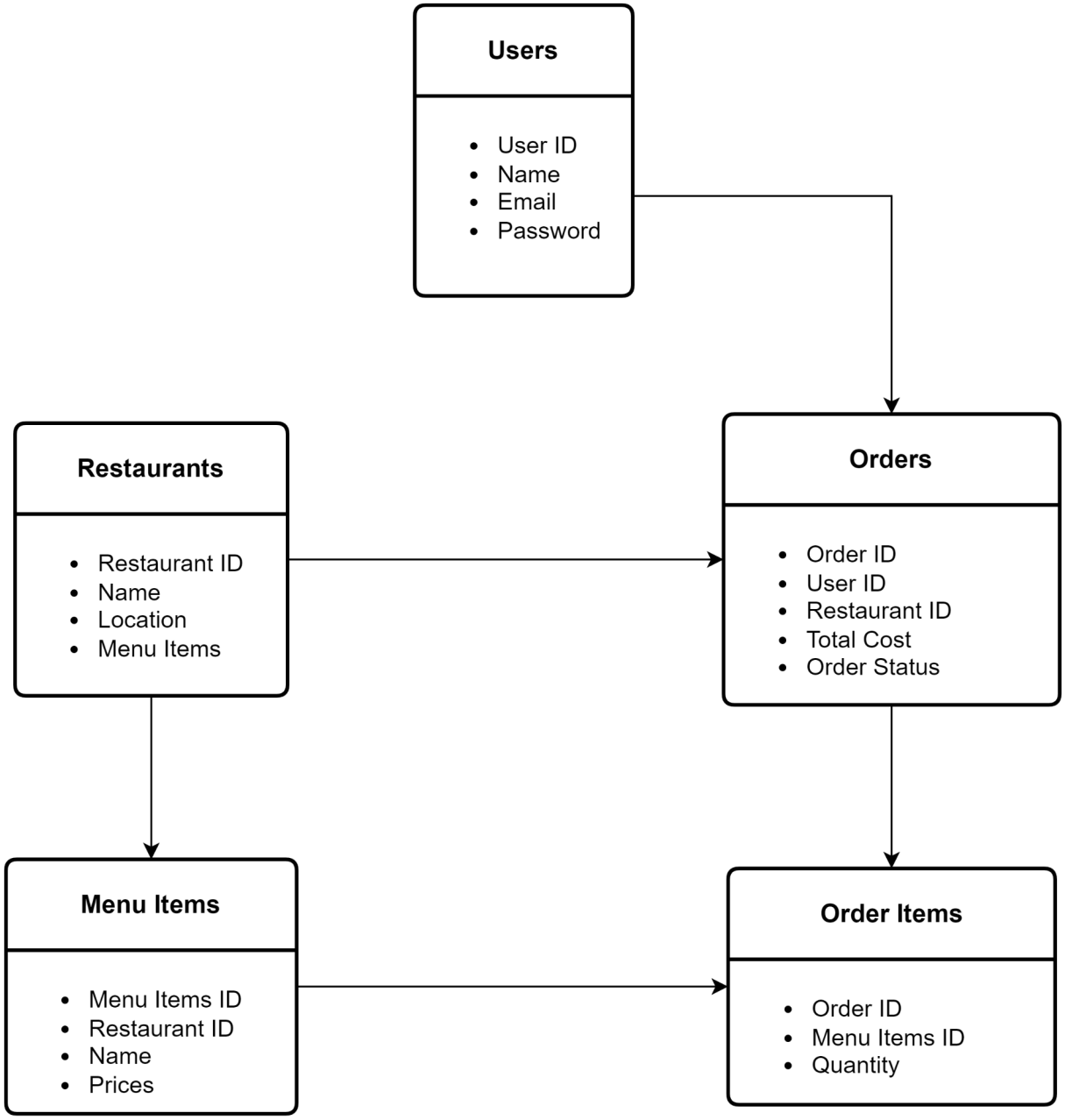
Class Diagram



Relationships Description:

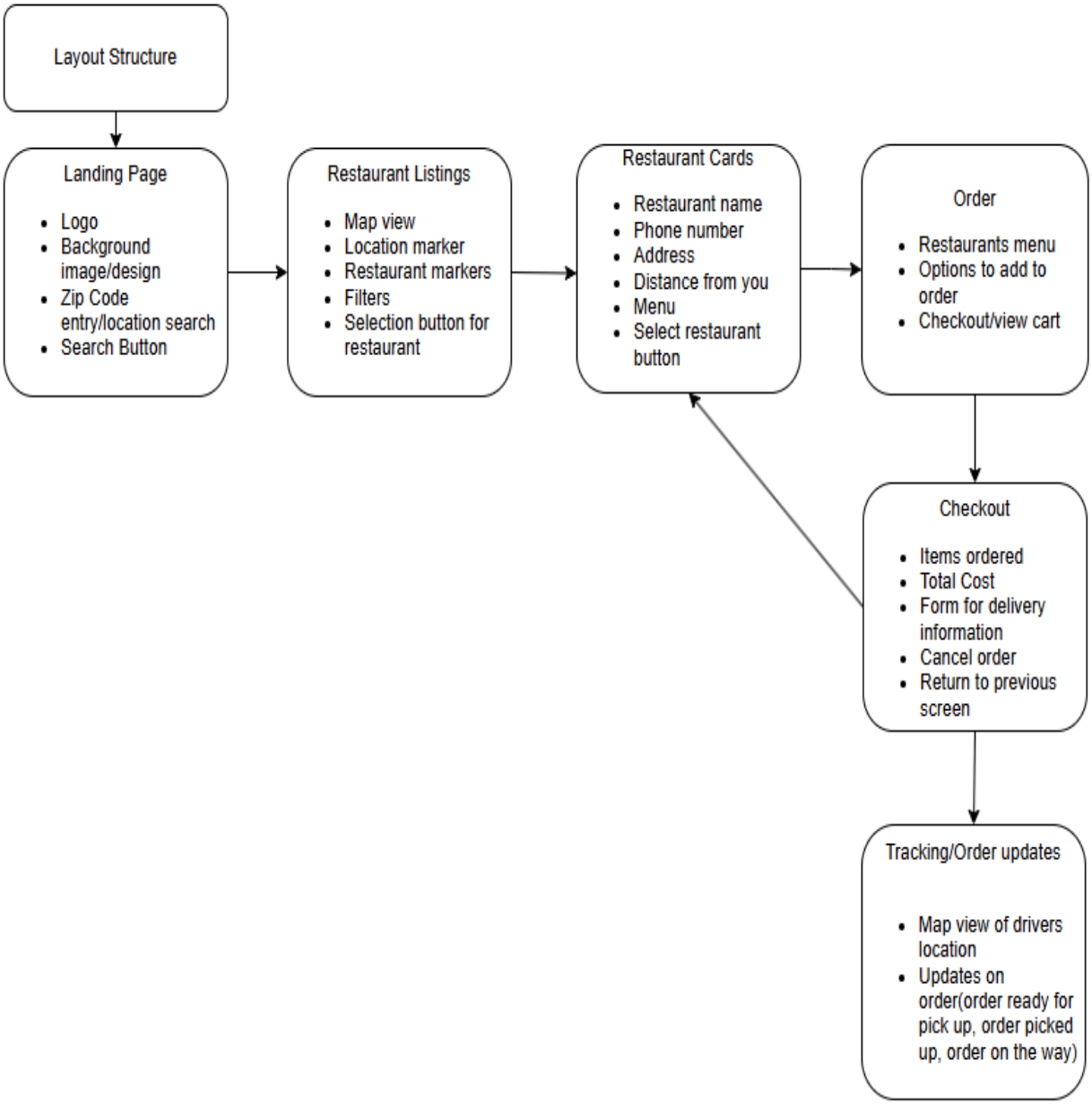
- A user is capable of placing multiple orders, which defines a one-to-many relationship.
- A restaurant offers numerous items on its menu, illustrating a one-to-many relationship.
- An order can consist of several menu items, representing a one-to-many relationship.

Database Design

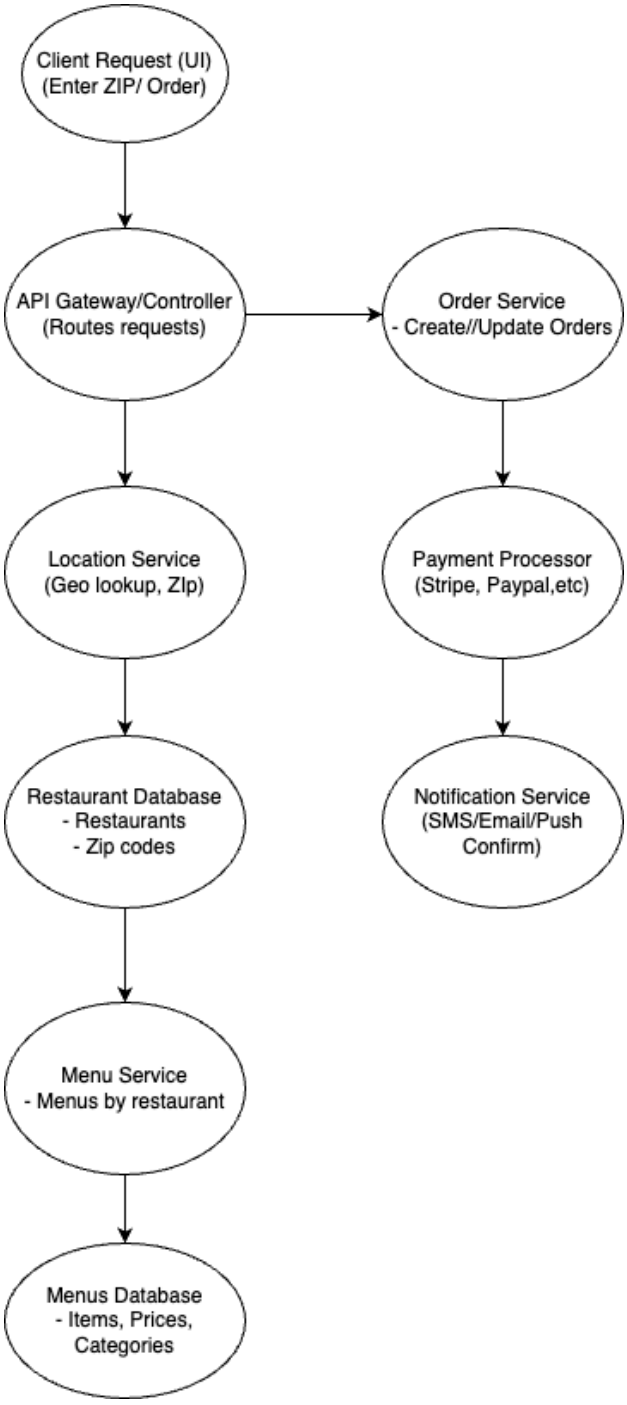


Interface Design

Front End:

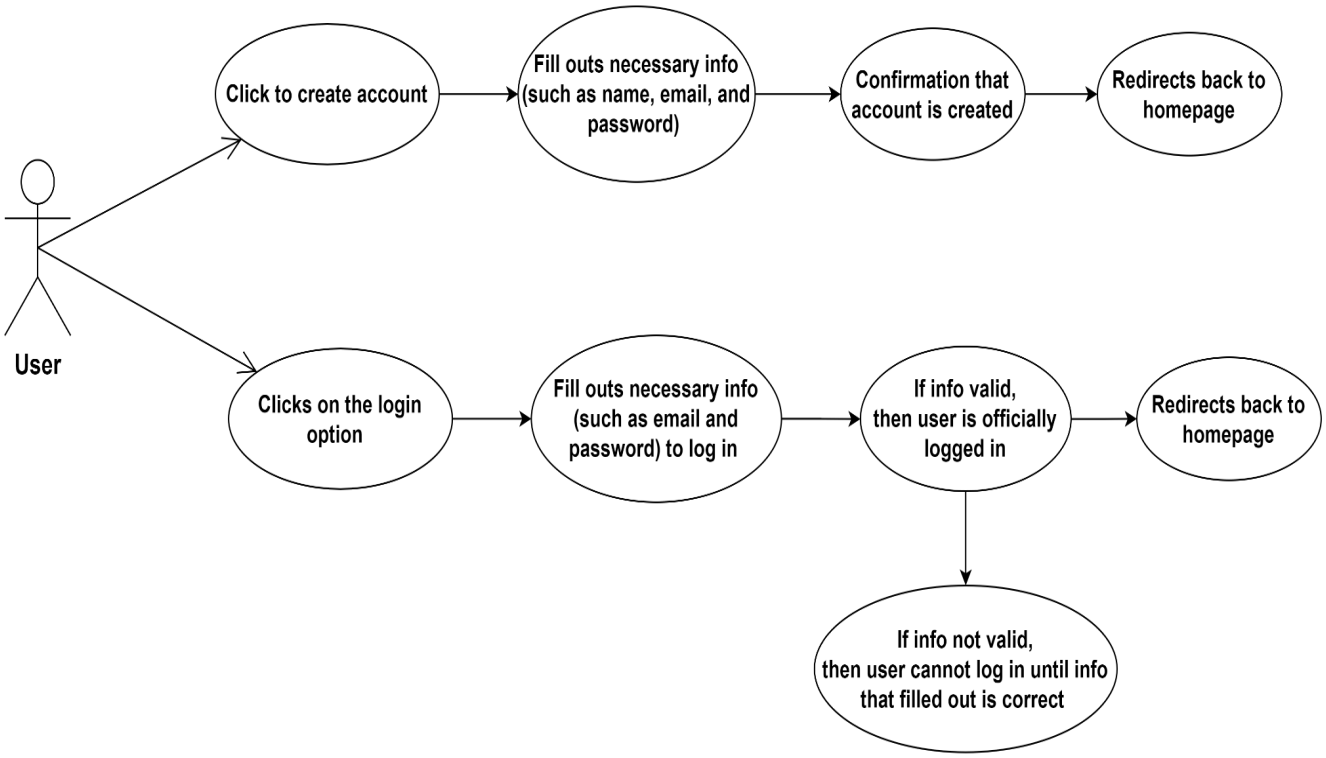


Backend:

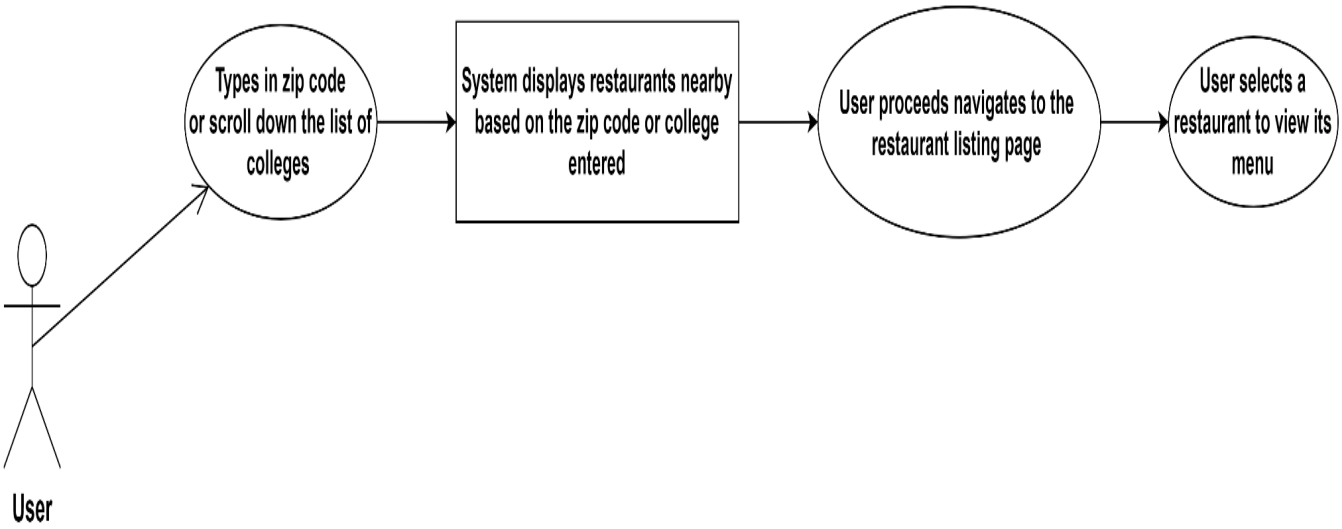

Client Request (UI)
(Enter ZIP/ Order)
API Gateway/Controller
(Routes requests)
Order Service
- Create//Update Orders
Location Service
(Geo lookup, Zip)
Payment Processor
(Stripe, Paypal,etc)
Restaurant Database
- Restaurants
- Zip codes
Notification Service
(SMS/Email/Push
Confirm)
Menu Service
- Menus by restaurant
Menus Database
- Items, Prices,
Categories

Use Cases

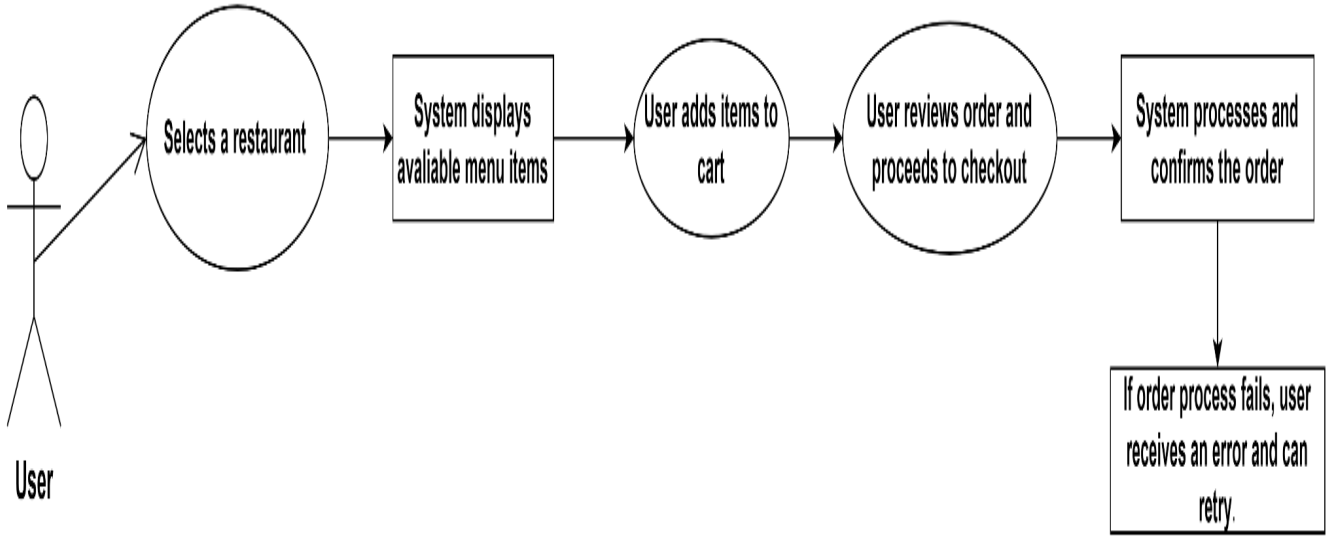
- **Account Creation and Login:**



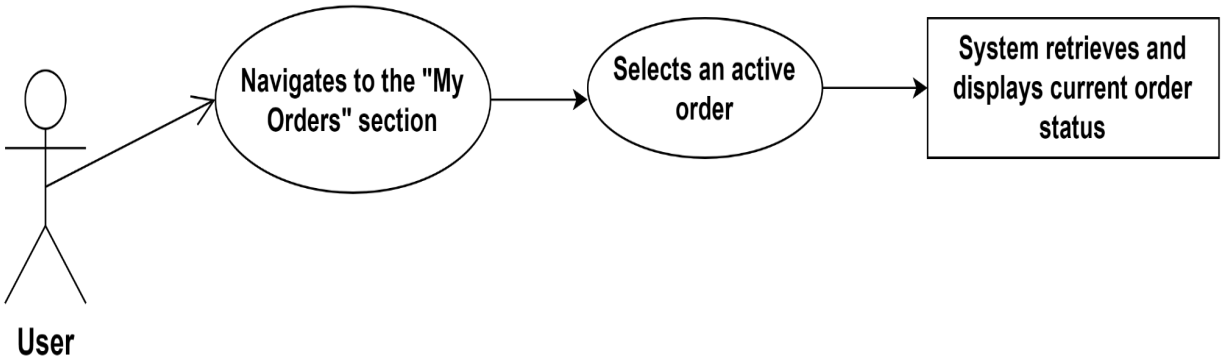
- **Restaurant Listings and Search:**



- **Menu Browsing and Order Placement:**



- **Order Tracking:**



Test Cases

Test Case ID	Description	Input	Expected Output
TC001	Register new user	Valid user data	Account is created
TC002	Login existing user	Correct email & password	Redirect to homepage
TC003	Place order	Menu items + checkout	Order confirmation screen
TC004	View order history	Logged in user	List of past orders
TC005	Update menu (admin)	Updated menu info	Menu is saved successfully

Summary

This design document presents the framework, architecture, and workflow of the food delivery service application tailored for universities and colleges in Indianapolis. It provides descriptive details about the database, user interfaces, use cases, and test cases, ensuring the application fulfills all necessary functions and performance criteria. This document will assist the development team in executing the project and will also serve as a basis for future enhancements and maintenance.