Final Year Project

**Logo, company name

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## FYP Group

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Student 2

Signature: Name:

Student 3

Signature: Name:

Signature:

Food Grid

## Abstract

Food Grid would provide a platform that helps people to order the food according to their exact requirements. The application's main purpose is to help people know the ingredients and calories in their food. Users would create their food according to the required calories and ingredients. Food Grid helps them to create the exact order by telling them that the specific item contains specific Calories.

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# Introduction

Knowledge of ingredients and nutrients is important in food. With this, we can infer whether our food is healthy or unhealthy. The proposed system will provide the user with this information and the ability to customize their food accordingly. This system allows the user to make his/her food and check the details and ingredient information respective to the selected food. It helps people to know what they are consuming and how it affects their health. This system benefits diet conscious people, and people having allergies to some sauces and veggies. They are allowed to add healthy items and remove the allergic items from their food.

# Vision Document

In this section, the project vision is discussed in detail.

## Problem Statement

Table Problem Statement

|  |  |
| --- | --- |
| **Problem** | * No customization options like opting for different ingredients * No details such as the nutritional content * No details on whether the food reacts to certain allergies |
| **Impact** | * Users with some allergies cannot order the food * User cannot get the desired food with exact requirements. * User is unaware of what they are consuming and how some ingredients will affect their health. |
| **Solution** | * Providing customization options. * Users will be able to add and remove ingredients according to the requirements. * Provides the details of ingredients and nutrients provided by the selected food * Help users to see what they are consuming. |

## Business Opportunity

An easy way to capture is food market is by providing customers with the exact thing that they want and telling them what they are getting from the ordered food. It will provide ease for the users with certain allergies to red gid to specific items. It also helps users to know the credibility of food and related items. People with some diet will order accordingly.

## Objectives

A platform for users

* To order food
* To manage details of delivery address, order, shopping cart
* To provide customization of food
* To provide details of nutrients
* Who were conscious about their diet.
* Having certain allergies to order desired, safe food.

## Scope

Food Grid is an android application. The main problem we’re currently facing is that there is no proper single platform to order customized food or details of the ordered food. The impact of this is that people with allergies are restricted from ordering food. Food Grid will provide an environment through which food customization to details of ingredients and nutrients are on board, so users are aware of what they are consuming.

## Constraints

The details of the constraint are following

* If the amount of memory available on phone is low, the system may ask your application to shut down or sacrifice cached data, slowing program execution.
* The system shall not require any hardware development or procurement.
* If there is an internet problem, then the app will not be loaded.

## Stakeholder and User Descriptions

Stakeholder and User Descriptions are defined in detail below.

### Market Demographics

Our target market are those people having the following properties

* People who look for healthy options
* People who check the ingredients of food before use
* Diet-conscious people
* People with allergies
* People buying customized products

### Stakeholder Summary

Table 2 Stake Holder Summary

|  |  |  |
| --- | --- | --- |
| Name | Description | Responsibilities |
| Food Grid- Developers | It includes those who are involved in the design and implementation of this project. | * Should design android application * Proper testing should be applied |
| End-User | End users include all diet conscious people, people with certain allergies, all the people who want to try food, admin, and companies. | * Should have knowledge of using android phones. |
| Supervisors of project | Supervisor will be stakeholders of this product as they are involved in development process of this project with the development team. | * Gives direction to development team * Ensures that the system will be maintainable * Ensures that there will be a market demand for the product’s features * Monitors the project’s progress * Ensures that project follows the documents generated during project planning and that work products are properly delivered |

### User Environment

Any user with an internet connection will be able to access the Application. End-users must have knowledge of using an android mobile and other basic information to install and operate any application. The proper user interface and installation guidelines must be sufficient to educate the users on how to use the application. It is an android application so it must operate on all the specified android phones or related devices.

### Stakeholder Profiles

The Stakeholder Profiles Attributes of the system are listed in this section.

#### Supervisors of the Project

Table 3 Supervisors of the Project

|  |  |
| --- | --- |
| Representatives | Supervisor: Ms. Faryal Saud  Co-supervisor: Mr. Tahir Farooq |
| Description | They are involved in supervising activities of the development process |
| Type | They are technical stakeholders. They have expertise in domains that are being applied to this project i.e., android development, machine learning, and data mining. |
| Responsibilities | * Gives direction to the development team * Ensures that the system will be maintainable * Ensures that there will be a market demand for the product’s features * Monitors the project’s progress * Ensures that the project follows the documents generated during project planning and that work products are properly delivered * They will facilitate the development team to complete this project within specified resources. |
| Success Criteria | The completion of features that are being committed by the development team at the start of the project. |
| Involvement | * Requirement reviewer * Senior managers * Reviews implementation |
| Comments/Issues | None |

#### Development Team of the Project

Table 4 Development Team of the Project

|  |  |
| --- | --- |
| Representatives | Mr. Wahab Ijaz  Mr. Waseem Akram Mr. Usama Faisal |
| Description | They are involved in designing an app. |
| Type | They are technical stakeholders. |
| Responsibilities | * Should design this app considering user’s needs * Proper testing should be applied to make it as effective as possible * Proper data is required for better recommendations |
| Success Criteria | The completion of features that are being committed by the development team at the start of the project. |
| Involvement | * Designers * Testers |
| Deliverable | * Documentation * Completed Project |
| Comments/Issues | None |

# System Requirement Specification

In this section, the features and requirements of the system are explained.

## System Features

System features are as follows

* Easy Registration and Signup
* Easy Order Placement
* Easy Payment Option
* Real Time GPS-Tracking
* Navigate the restaurant’s menu
* Vouchers/Rewards, Cashback
* Order customized food
* Reviews and Feedback
* Order Scheduling and Pickup
* Search Filters
* Order History
* In-app messages
* Favorites
* Manage User Profile
* User Friendly GUI
* Managing cart
* Displaying ingredients details.
* Displaying nutrients details.
* Notify allergic items

## Functional Requirements

The functional requirements of the system are listed below:

### Application Portal

Users will be able to

* Create his/her account.
* Manage their account.
* Logged in to the system to order the customized food.
* Add /remove the item from the selected order.
* Chat with the restaurant staff about the order or take information about the menu.
* Locate their order.
* Check their order details in the form of a cart.
* Give feedback about their current order provided by the details of nutrients and ingredients present in their food, delivery, and confirmation in the form or order number.

### Restaurant Portal

Restaurant staff will be able to

* Add/update/delete the food category from the menu.
* Add/update/delete food items from the menu.
* Update the price for a given food item.
* Update additional information for the given item.
* Retrieve orders from the database.
* Make an order processed and remove it from the list of active orders.

## Non-Functional Requirements

The Non-functional requirements of the system are listed below.

### Performance Requirements

* The overall performance of the software will be reliable.
* The application would support one user against the database on the server.
* The application would access the server Database within no time when the user logs in.
* Very less response time is expected.
* The application would compute results effectively and quickly.

### Safety Requirements

This is an android application to be used by End-users, Diet conscious people, and registered restaurants only. As only one user can use the application at a time on an android phone, in this case, no safety requirements would be required. We will take standardized input from the user. We will prevent our database Injection attacks. Therefore, our system always will be in a safe state.

### Security Requirements

There will be user authentication in the android application. User Authentication, users’ order history, and communication between Users and restaurants would be secured. Food Grid will provide security to protect sensitive data.

### Software Quality Attributes

The Software quality attributes of the system are listed below.

* Availability: The application would be available 24 hours a day, 7 days a week.
* Usability: To perform any operations and understand the functioning of the system is very easy
* Adaptability This software is adaptable by any organization.

# 4.Use Case Diagram

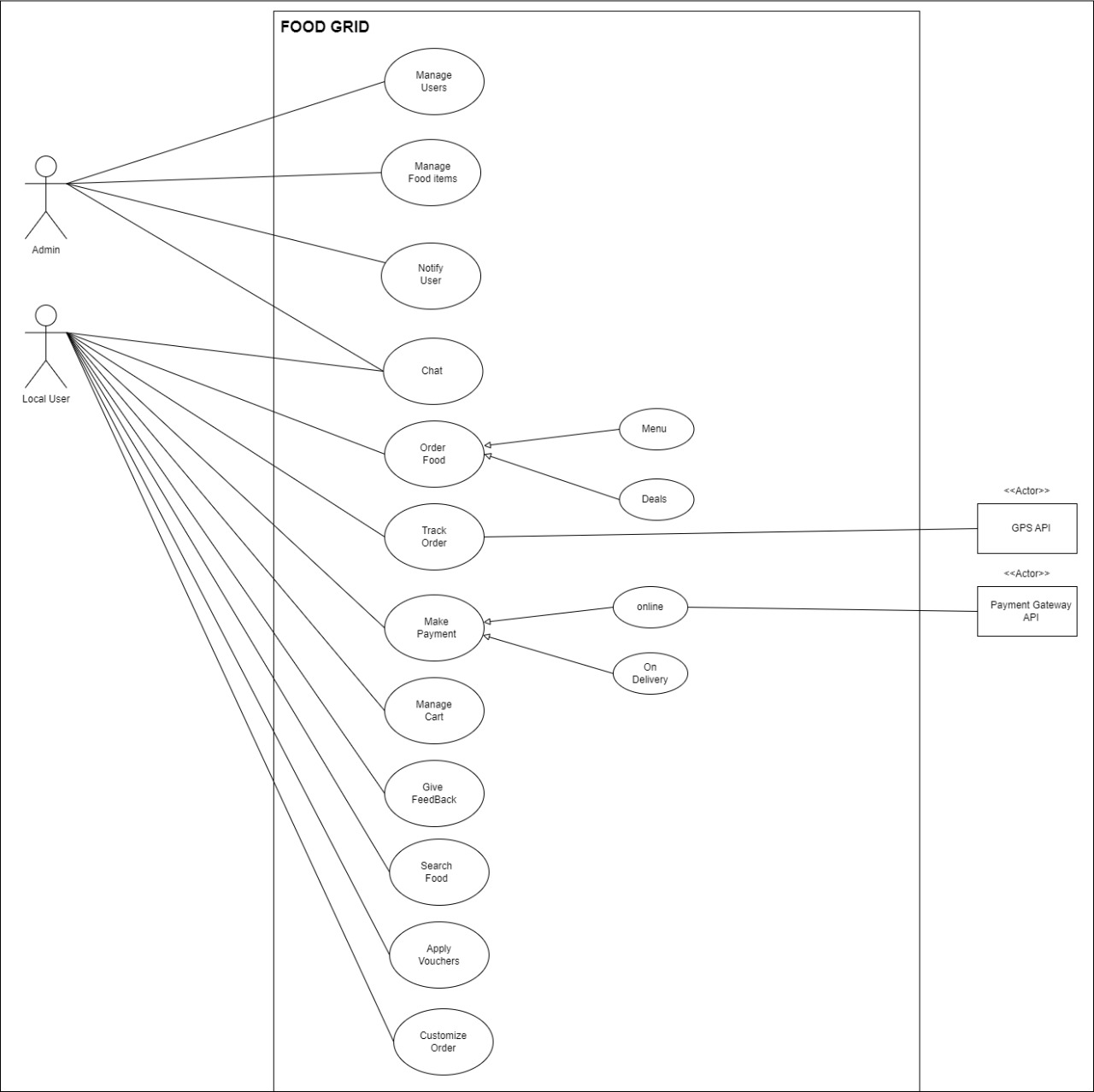


Figure Use case Diagram

# High Level Use Case Diagram

## 5.1. Manage Users

Table Manage Users

|  |  |
| --- | --- |
| **Use case ID** | 01 |
| **Use case Name** | Manage Users |
| **Actor** | Admin |
| **Type** | Primary |
| **Description** | The admin would be able to add, delete and view record of users interacting with the system. |

## 5.2. Manage Food Items

Table Manage Food items

|  |  |
| --- | --- |
| **Use case ID** | 02 |
| **Use case Name** | Manage Food items |
| **Actor** | Restaurant Staff |
| **Type** | Primary |
| **Description** | The restaurant staff would be able to update, delete and add food items in menu. |

## 5.3. Notify User

Table Notify User

|  |  |
| --- | --- |
| **Use case ID** | 03 |
| **Use case Name** | Notify User |
| **Actor** | Restaurant Staff |
| **Type** | Primary |
| **Description** | The restaurant staff would be able to notify user as food is ready or required timeline |

## 5.4. Chat

Table Chat Handling

|  |  |
| --- | --- |
| **Use case ID** | 04 |
| **Use case Name** | Chat |
| **Actor** | Local user, Restaurant Staff |
| **Type** | Primary |
| **Description** | The user would be able to chat with restaurant in case of any query. |

## 5.5. Order Food

Table Order Food

|  |  |
| --- | --- |
| **Use case ID** | 05 |
| **Use case Name** | Order Food |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to order food according to his/her exact requirement. |

## 5.6. Track Order

Table Track Order

|  |  |
| --- | --- |
| **Use case ID** | 06 |
| **Use case Name** | Track Order |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to track the ordered food and get informed with the latest delivery time. |

## 5.7. Make Payment

Table Make Payment

|  |  |
| --- | --- |
| **Use case ID** | 07 |
| **Use case Name** | Make Payment |
| **Actor** | Local user, Restaurant Staff |
| **Type** | Primary |
| **Description** | The user would be able to make payment online or on delivery. |

## 5.8. Manage Cart

Table Manage Cart

|  |  |
| --- | --- |
| **Use case ID** | 08 |
| **Use case Name** | Manage Cart |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to manage cart. Cart contains the details of ordered food with specific nutrients and ingredients. |

## 5.9. Give Feedback

Table Give Feedback

|  |  |
| --- | --- |
| **Use case ID** | 09 |
| **Use case Name** | Give Feedback |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to submit the feedback so Restaurant would be able to cope up with the services. |

## 5.10. Search Food

Table Search Food

|  |  |
| --- | --- |
| **Use case ID** | 10 |
| **Use case Name** | Search Food |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to search the required food |

## 5.11. Apply Vouchers

Table Apply Vouchers

|  |  |
| --- | --- |
| **Use case ID** | 11 |
| **Use case Name** | Apply Vouchers |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to apply for vouchers |

## 5.12. Customize Order

Table Customize Food

|  |  |
| --- | --- |
| **Use case ID** | 12 |
| **Use case Name** | Customize Order |
| **Actor** | Local user |
| **Type** | Primary |
| **Description** | The user would be able to order customize food to get rid of any allergic items |

# Expended Use Case Diagram

## Manage Users

Table EUC-Manage Users

|  |  |
| --- | --- |
| **Use case ID** | 01 |
| **Use case Name** | Manage Users |
| **Actor** | Admin |
| **Description** | The admin would be able to view, add, update or delete user details. |
| **Trigger** | Admin clicked on manage users |
| **Pre-Condition** | Admin logged in to the system |
| **Post Condition** | Admin managed the user |
| **Normal Flow** | Admin will   * Add users. * Remove users. * Update user’s information * View user details   ­ |
| **Alternative Flow** | NA |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Order Food

Table EUC-Order Food

|  |  |
| --- | --- |
| **Use case ID** | 02 |
| **Use case Name** | Order Food |
| **Actor** | Local User |
| **Description** | The user logged in to the system and would be able to order desired food from the given menu and deals. |
| **Trigger** | User clicked on order food button. |
| **Pre-Condition** | User must be login. |
| **Post Condition** | User’s order is successfully placed |
| **Normal Flow** | * User orders food from menu. * User orders food from deals |
| **Alternative Flow** | NA |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Make Payment

Table EUC-Make Payment

|  |  |
| --- | --- |
| **Use case ID** | 03 |
| **Use case Name** | Make Payment |
| **Actor** | Local user, Restaurant staff |
| **Description** | The user would be able to make payment of his/her ordered food. Payment can be done online or cash on delivery. |
| **Trigger** | User clicked on Make payment option |
| **Pre-Condition** | User has ordered the food. |
| **Post Condition** | User made the payment. |
| **Normal Flow** | Make online payment of ordered food. |
| **Alternative Flow** | Make Payment on Delivery |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Manage Cart

Table EUC-Manage Cart

|  |  |
| --- | --- |
| **Use case ID** | 04 |
| **Use case Name** | Manage Cart |
| **Actor** | Local user |
| **Description** | The user would be able to view the cart to see the details of contained ingredients and nutrients in his/her ordered food. Also, able to view his/her payment details. |
| **Trigger** | User clicked on manage cart option |
| **Pre-Condition** | User has ordered the food |
| **Post Condition** | User managed the cart successfully. |
| **Normal Flow** | * Add items to the cart * Remove items from the cart * View the details from cart. |
| **Alternative Flow** | * Select items from the menu. * Select items from deals. |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Search Food

Table EUC-Search Food

|  |  |
| --- | --- |
| **Use case ID** | 05 |
| **Use case Name** | Search Food |
| **Actor** | Local User |
| **Description** | The user would be able to search food by name, calories or by name of specific ingredients. |
| **Trigger** | User clicked on search bar. |
| **Pre-Condition** | User must be logged in. |
| **Post Condition** | User gets the list of searched food. |
| **Normal Flow** | User searches for food and finds it. |
| **Alternative Flow** | NA |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Customize Order

Table EUC-Customize Order

|  |  |
| --- | --- |
| **Use case ID** | 06 |
| **Use case Name** | Customize Order |
| **Actor** | Local User |
| **Description** | The user would be able to order food by selecting items like bread, flavors, spices, vegies, sauces, and slices. |
| **Trigger** | User clicked on custom order button. |
| **Pre-Condition** | Users must be logged in and required ingredients are available for order. |
| **Post Condition** | User order is successfully placed |
| **Normal Flow** | User orders the food by   * Selecting Ingredients * Removing Ingredients |
| **Alternative Flow** | * Select food from the menu. * Select food from deal. |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

## Manage Food Items

Table EUC-Manage Food Items

|  |  |
| --- | --- |
| **Use case ID** | 07 |
| **Use case Name** | Manage Food items |
| **Actor** | Admin |
| **Description** | The admin would be able to view, add, update or delete items. |
| **Trigger** | Admin clicked on manage food items |
| **Pre-Condition** | Admin logged in to the system |
| **Post Condition** | Admin managed food items |
| **Normal Flow** | Admin will   * Add items * Remove items * Update items * View items |
| **Alternative Flow** | NA |
| **Special Requirement** | Availability of Internet |
| **Frequency of Use** | High |

# System Sequence Diagram

## Manage Users

Diagram

Description automatically generated

Figure SSD-Manage Users

## Order Food

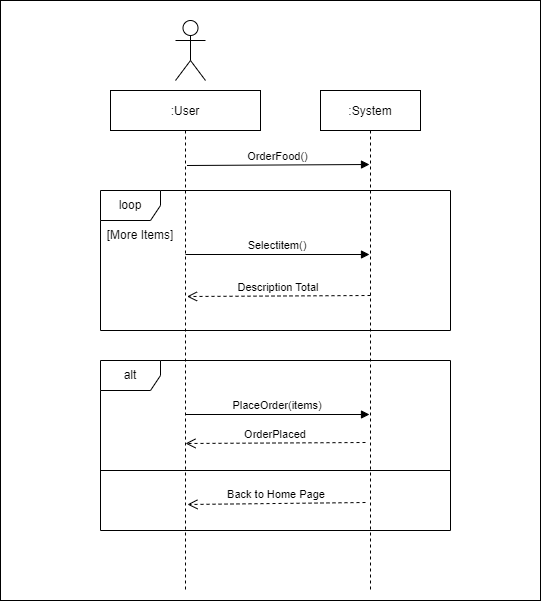


Figure SSD-Order Food

## Make Payment

Diagram

Description automatically generated

Figure SSD-Make Payment

## Manage Cart

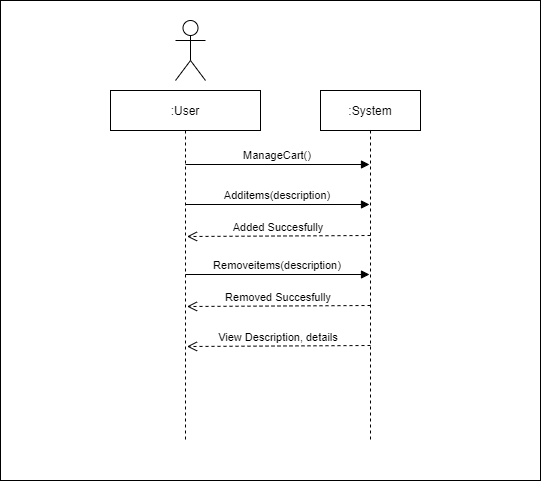


Figure SSD-Manage Cart

## Search Food

Diagram

Description automatically generated

Figure SSD-Search Food

## Customize Order

Diagram

Description automatically generated

Figure SSD-Customize Order

## Manage Food Items

Diagram

Description automatically generated

Figure SSD-Manage Food items

# Activity Diagram

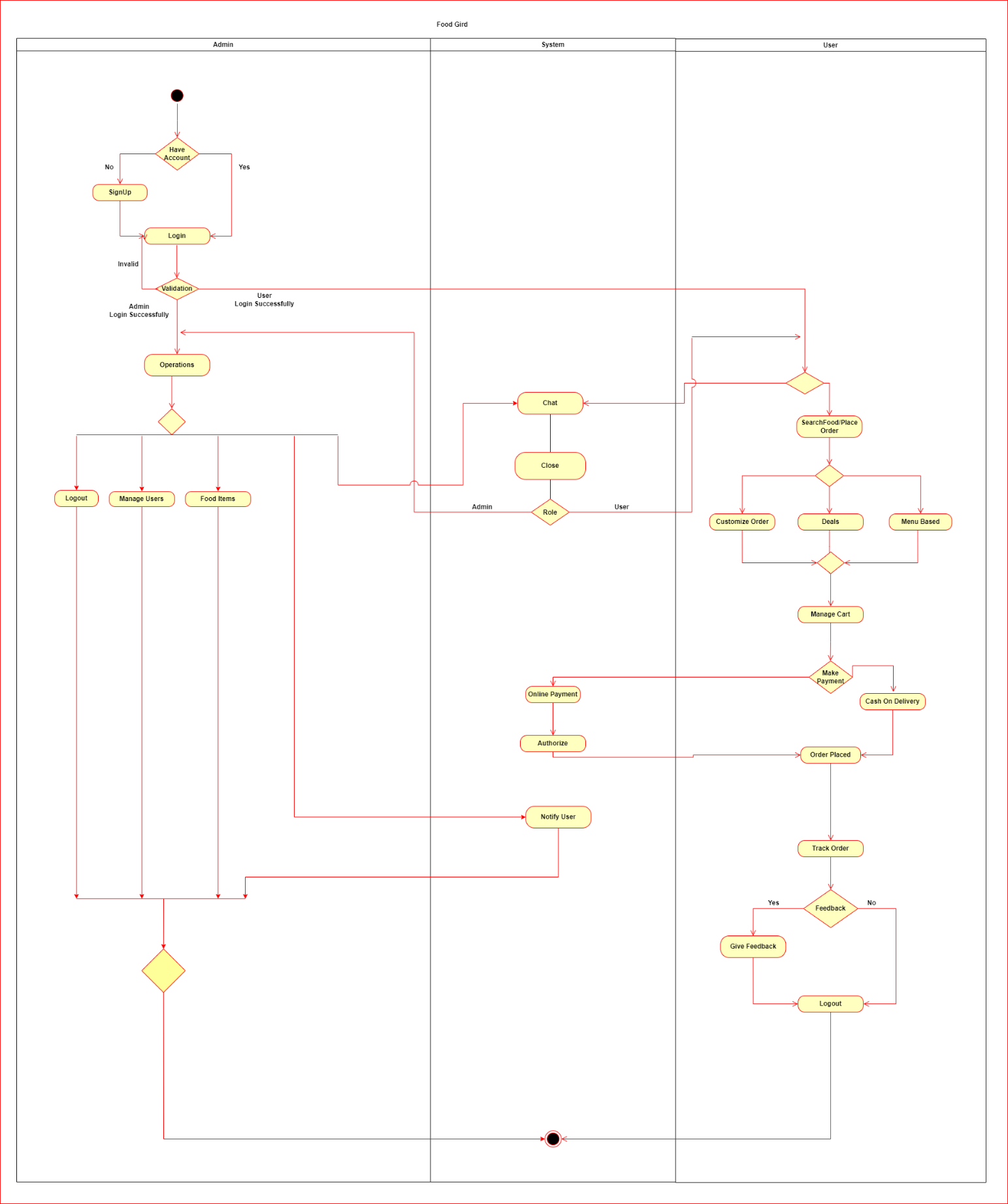


Figure Activity Diagram

# Data Flow Diagram

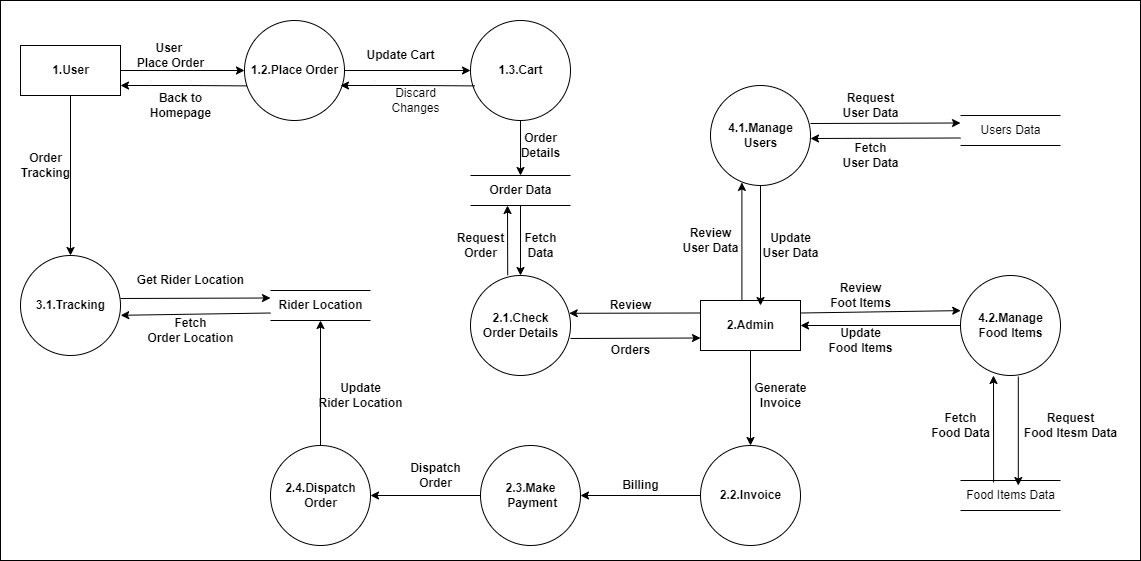


Figure Data Flow Diagram

# State Machine Diagram

Diagram

Description automatically generated

Figure State Machine Diagram

# Schema

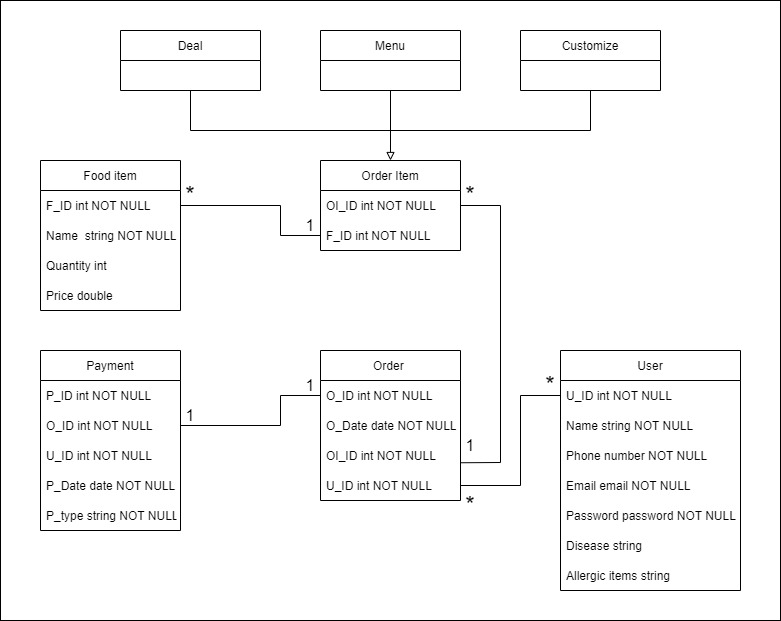


Figure Schema

# Package Diagram

Diagram, engineering drawing, schematic

Description automatically generated

Figure Package Diagram

# Architecture Diagram

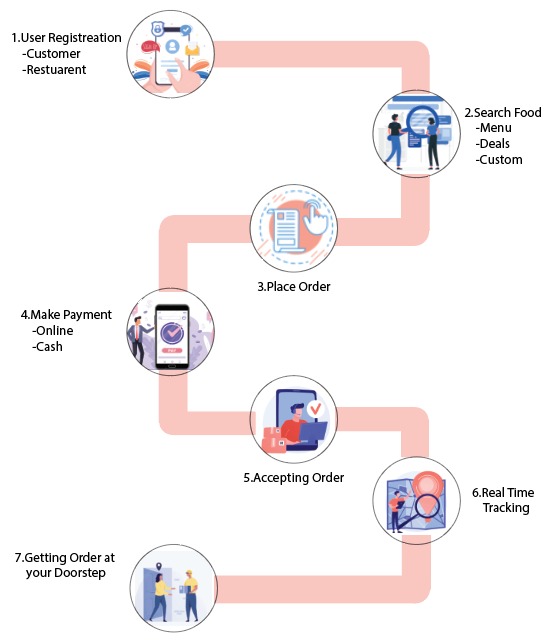


Figure Architecture Diagram