FCIT

Faculty of Computing and Information Technology

Final Documentation

Food Reality

Group ID: BSEF19-518

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Project Supervisor: Dr. Muhammad Shahid Farid

Submitted By

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Verily! In the creation of the heavens and the earth, and in the alternation of night and day, and the ships which sail through the sea with that which is of use to mankind, and the water (rain) which Allah sends down from the sky and makes the earth alive therewith after its death, and the moving (living) creatures of all kinds that He has scattered therein, and in the veering of winds and clouds which are held between the sky and the earth, are indeed Ayat (proofs, evidences, signs, etc.) for people of understanding.

(Al-Baqara, 164)

Al Quran

Statement Of Submission

This is to certify that following students have successfully completed the final project named as: **Food Reality**, at the Faculty of Computing and Information Technology, University of The Punjab, Lahore, to fulfill the partial requirement of the degree of **Bachelors in Software Engineering**.

Roll No.	Names
BSEF19M520	**Talha Munir**
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Project Office Supervisor
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Project Primary Advisor
Name: Dr. Muhammad Shahid Farid
Designation: Assistant Professor FCIT

Proofreading Certificate

It is to certify that I have read the document meticulously and circumspectly. I am convinced that the resultant project does not contain any spelling, punctuation or grammatical mistakes as such. All in all, I find this document well organized and I am in no doubt that its objectives have been successfully met.

_____

Ms Samreen Jawed Shahid,
Lecturer, Business Communication and Technical Writing,
FCIT, University of the Punjab

Acknowledgement

We would like to express our sincere gratitude and appreciation to Dr. Muhammad Shahid Farid, Assistant Professor from the Faculty of Computing and Information Technology, University of the Punjab. His invaluable cooperation and assistance have been instrumental in the successful completion of this project.

Dr. Muhammad Shahid Farid has been a constant source of guidance, providing us with expert knowledge, insightful feedback, and unwavering support throughout the course of this project. His deep understanding of the subject matter and his commitment to excellence have greatly enriched our work.

We are grateful for his dedication and willingness to share his expertise, which has significantly contributed to the development and refinement of our project. His encouragement and motivation have inspired us to push our limits and strive for excellence.

We also extend our appreciation to the entire faculty and staff of the Faculty of Computing and Information Technology for creating an enriching academic environment and providing us with the necessary resources to pursue this project.

Lastly, we would like to thank our friends and family for their unwavering support and encouragement throughout this journey. Their belief in us has been a constant source of motivation.

Once again, we express our heartfelt gratitude to Dr. Muhammad Shahid Farid and all those who have contributed to the success of this project. Their guidance and support have been invaluable, and we are truly grateful for their assistance.

Abstract

This project presents an innovative online restaurant web application designed to enhance the dining experience for customers. The application offers a user-friendly interface where customers can browse and purchase food items from various categories. Additionally, the app incorporates cutting-edge augmented reality (AR) technology, allowing customers to view realistic 3D models of the food items before making a purchase. By leveraging their mobile devices' back camera, customers can visualize the food items in their own environment, facilitating informed decision-making and an immersive ordering experience. In cases where desktop devices are used, customers are provided with a QR code containing a link to access the AR model. The admin panel empowers administrators to effortlessly manage food items, categories, delivery personnel, and order statuses. This project aims to revolutionize the way customers interact with online food platforms, providing an enticing and engaging environment that bridges the gap between virtual and physical dining experiences.

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Part 1

Introduction

1.1 Project/Product Feasibility Report

1.1.1 Technical Feasibility

The project is technically feasible because the technologies that will be used to build it are widely used like React for front-end web development, Flask (Python) for back-end development and Three.js, WebAR, A-Frame for implementing Augmented Reality, Node.js for front end which is a widely used language for frontend development. Postgresql will be used for databases. Moreover, almost all the aspects of the domain are easily implementable.

1.1.2 Operational Feasibility

Food Reality will be very simple to use because it would operate on both mobile and desktop computers which support augmented reality. The application will operate after it is developed, no installation of the application is required. The web-App is free for users so that they can access it easily and benefit from it.

1.1.3 Economic Feasibility

With the feature of Augmented Reality, restaurants may attract more customers, which will increase their revenues. The economic feasibility is essential to know the budget needed for the completion of the application, since the project does not involve any complex construction I.e., all the functional requirements are simple to implement, the development cost will be very much feasible as the technologies needed for this project are free to use. Also in each iteration, the operational cost would be minimum as best development practices would be kept in mind while developing it so that as low as possible revisions are required.

1.1.4 Schedule Feasibility

The team members have expertise in most of the technologies used in Food Reality that is required by the project to meet the specified duration for its completion. The project will be divided into modules and there will be a deadline for every module. This way will allow us to work in an efficient way. Meetings will be conducted on a regular basis to review the individual works.

1.1.5 Specification Feasibility

We have a well-planned web-App project. The requirements of our system are well defined and well understood. There is no ambiguity in it. The functional and nonfunctional requirements will be fulfilled.

1.1.6 Information Feasibility

There is a User-friendly GUI. It will be very easy to use and will have a simple process of ordering food. Any person can use it with some knowledge of mobile and computers.

1.1.7 Motivational Feasibility

The members of the requirements gathering, development, and testing team are highly motivated to develop the application because it would help users or customers to view their food product in 3D view which would make them satisfied by their order.

1.1.8 Legal & Ethical Feasibility

Food delivery application, an eatery can sell food straightforwardly to clients without the contribution of an outside entrance. So, this application is legally and ethically feasible.

1.2 Project/Product Scope

As the food industry is continuously growing and giving the functionality of ordering food online. Giving our share, for making the selection of food items easy we are designing the Food Reality app to help customers in viewing the realistic virtual 3D dishes on their table for selecting food items to be ordered. This way, it helps customers to decide their ideal dish and also place the food order online conveniently.

Following are the modules of our project:

Customer Module:

- Login
- Create account
- View food items
- Add items to cart
- Place orders
- Specify order to be delivered or picked up
- Track order status
- Review delivered orders
- Update account settings

Admin Module:

- Login
- Manage users
- Manage food items
- Manage food items' categories
- View and manage orders
- Manage delivery boys
- Update ordered item's status

1.3 Project/Product Costing

1.3.1 Project Cost Estimation by Function Point Analysis

Type of Component	Count	Weighing Factor			Total
		Low	Average	High	
No of user Inputs	11	3	4	6	44
No of user Outputs	15	4	5	7	75
No of user Inquires	7	4	5	6	35
No of Files	4	7	9	11	36
No of external Interfaces	6	5	6	7	36
Count					226

	Value of adjustment factors	Values

1	Data communications	5
2	Distributed data processing	0
3	Performance	4
4	Heavily used configuration	3
5	Transaction rate	3
6	On-Line data entry	4
7	End-user efficiency	3
8	On-Line update	4
9	Complex processing	4
10	Reusability	3
11	Installation ease	0
12	Operational ease	5
13	Multiple sites	2
14	Facilitate change	3
Total	**∑(Fi)**	**43**

Fi = Sum of these values = 43

Function Point est. = Count Total * [0.65 + 0.01 * (Fi)]

=226*[0.65+0.01*43]

= 244.08

Total Cost

Cost / FP = labor rate / productivity parameter

= 4000 / 10

= 400

Total Project Cost = FP est. * (cost / FP)

= 244.08*400

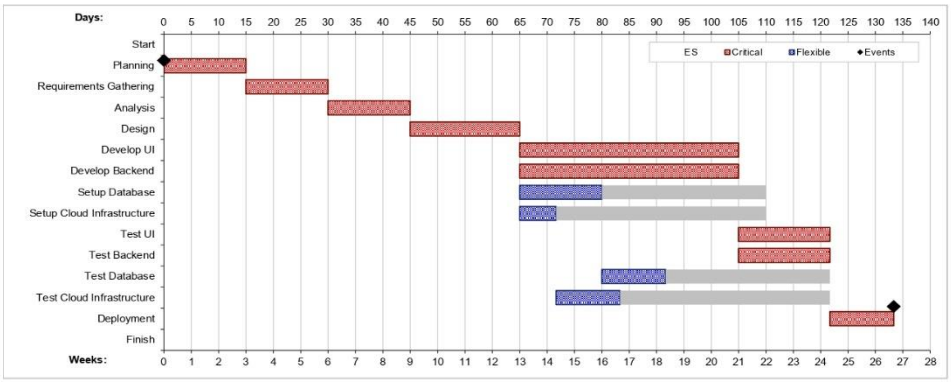
= 97,632

1.4 CPM - Critical Path Method

Start Date: 24/10/2022
Finish Date: 01/06/2023
Days to Completion: 140.00

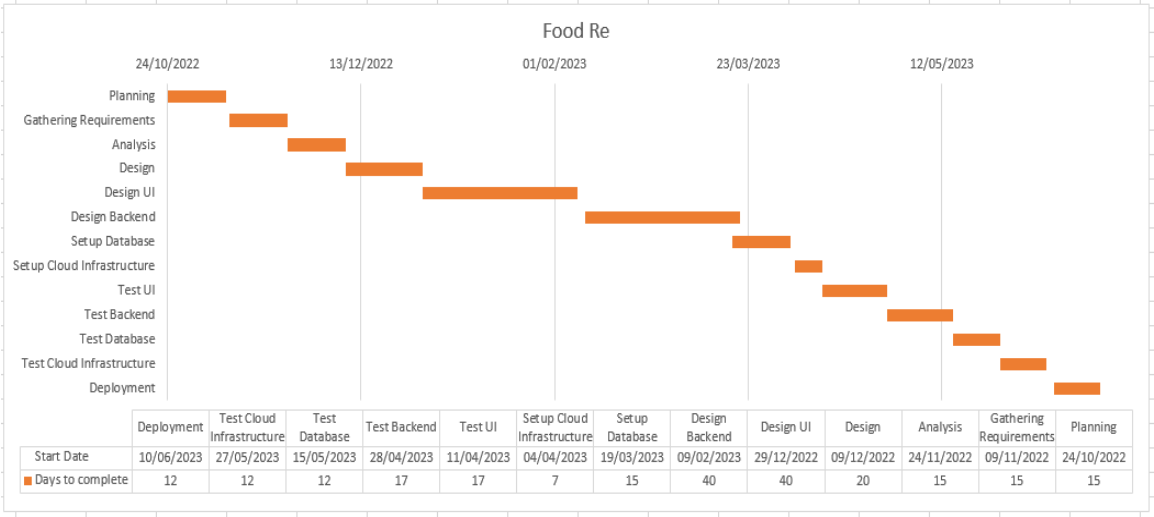
Times (in Days)
Time Distribution: Triangular

ID	Task Name	Predecessors (Enter one ID per cell)					O (min)	M (most likely)	P (max)	Duration (exp. time)	ES	EF	LS	LF	Slack
1	Start									0.00	0.00	0.00	0.00	0.00	0.00
2	Planning	1					10	15	20	15.00	0.00	15.00	0.00	15.00	0.00
3	Requirements Gathering	2					10	15	20	15.00	15.00	30.00	15.00	30.00	0.00
4	Analysis	3					10	15	20	15.00	30.00	45.00	30.00	45.00	0.00
5	Design	4					15	20	25	20.00	45.00	65.00	45.00	65.00	0.00
6	Develop UI	5					35	40	45	40.00	65.00	105.00	65.00	105.00	0.00
7	Develop Backend	5					35	40	45	40.00	65.00	105.00	65.00	105.00	0.00
8	Setup Database	5					15	20	10	15.00	65.00	80.00	95.00	110.00	30.00
9	Setup Cloud Infrastructure	5					5	5	10	6.67	65.00	71.67	103.33	110.00	38.33
10	Test UI	6					15	15	20	16.67	105.00	121.67	105.00	121.67	0.00
11	Test Backend	7					15	15	20	16.67	105.00	121.67	105.00	121.67	0.00
12	Test Database	8					10	10	15	11.67	80.00	91.67	110.00	121.67	30.00
13	Test Cloud Infrastructure	9					10	10	15	11.67	71.67	83.33	110.00	121.67	38.33
14	Deployment	10	11	12	13		10	10	15	11.67	121.67	133.33	121.67	133.33	0.00
15	Finish	14								0.00	133.33	133.33	133.33	133.33	0.00



http://www.vertex42.com/ExcelTemplates/critical-path-method.html

1.5 Gantt chart



	Deployment	Test Cloud Infrastructure	Test Database	Test Backend	Test UI	Setup Cloud Infrastructure	Setup Database	Design Backend	Design UI	Design	Analysis	Gathering Requirements	Planning
Start Date	10/06/2023	27/05/2023	15/05/2023	28/04/2023	11/04/2023	04/04/2023	19/03/2023	09/02/2023	29/12/2022	09/12/2022	24/11/2022	09/11/2022	24/10/2022
Days to complete	12	12	12	17	17	7	15	40	40	20	15	15	15

1.6 Introduction to Team member and their skill set

Roll No.	**Names**	**Skills**
BSEF19M520	Talha Munir (**Leader**)	● Team management ● DevOps ● Frontend (HTML, CSS, JS, React, Vue) ● Backend (.Net, Java, Python) ● Cloud (Amazon Web Services Google Cloud Platform) ● Database (SQL: PostgreSQL, Oracle, MySQL, MariaDB, SQLite and NoSQL: DynamoDB)
BSEF19M502	Azka Noreen	● Problem Solver ● Frontend (HTML, CSS, JS, Angular) ● Backend (Python, Java) ● Graphic Designer

BSEF19M534	Barira	● UI Designer ● Frontend (HTML, CSS, JS, React) ● Backend (Php, Java, Net) ● Database (MySQL, SQLite)
BSEF19M538	Zainab Bibi	● Frontend (HTML, CSS, JS) ● Backend (Java, Net) ● Database (MySQL) ● SQA

1.7 Tools and Technology with reasoning

- **Chrome Browser:**

Chrome Browser helps us to test and debug web applications.

- **Git:**

Git is a Version Control System, used to keep changes in file records. In addition, it is an easy way to share remote repository with other group members, so that they can clone the current working repository

- **VS code:**

VS code helps for Web Development and Back-end Development.

- **Star UML:**

Star UML helps us to make UML diagrams.

- **Microsoft Word:**

Microsoft Word helps us to make documentation easy. It is a user-friendly tool.

- **Microsoft Excel:**

Microsoft Excel helps us to design Gantt Charts.

- **HTML 5:**

HTML is a markup language, helps to structure our web pages

- **CSS 3:**

CSS helps us to add styling to our HTML.

- **ReactJS:**

ReactJS is a JavaScript library, helps us to build User Interfaces or UI Components.

- **Figma:**

Figma helps us to make UI design for our project.

- **Three.js, WebAR, A-Frame**:

These are used to implement Augmented reality.

- **Flask:**

For the backend development, we have used Flask for our project.

- **Postgresql:**

For storing all the data, we have used Postgresql as a backend Database.

- **S3+cloud:**

S3+cloud helps us to deploy the Static pages of our project.

- **EC2:**

EC2 helps us for Backend deployment.

- **RDS:**

EC2 helps us for Postgresql deployment.

1.8 Vision Document

Our vision for Food Reality is to provide a unique and convenient way for consumers to buy and eat food from our restaurant. The app will use the camera on the customer's smartphone to display the food items in front of them. Customers will be able to view the food in augmented reality if their device supports it. If the device does not support augmented reality, they can scan a QR code in a supported device and it will open the augmented reality view in their browser.

The app would allow customers to see what a dish looks like. This would be especially useful for customers who are picky eaters. The app would also allow customers to leave reviews and ratings for dishes they have tried. This would help other customers make informed decisions about what to order.

Additionally, the app provides following features:

- A user-friendly interface
- Menu selection and ordering
- A detailed order history
- View ratings and reviews for menu items

1.9 Risk List

- Unauthorized database attack
- Excessive loading time of models
- Server down
- AR not supported

Requirements Engineering

2.1 Systems Specifications

2.1.1 Introduction

Food Reality app is designed for making the process of selecting food items and placing the order conveniently for the customers. Customers can register themselves and view available food items as virtual realistic 3D models. Customers can also place orders online.

2.1.2 Existing System

Food Reality will mainly deal with following areas:

- Account Management

Customers can sign up using their name, phone number, delivery address and password. And they have to be logged in to make the order.

- View Food items

Customers can view food item details and their pricing. They can also view them in 3D.

- Order Placement

There will be the option for selecting food items and adding them to cart. Then they can checkout after confirming their address and selecting whether they want pick-up or delivery.

- Track Order Status

Customers can also see if their order has been placed and delivered

- Order Review

Customers can also give their review after successful order delivery.

- Manage Food Items

Admin can add/delete/edit food item details.

- Manage Customers, orders and Delivery Boys

Admin can also manage customer accounts and orders. System will also help to maintain the data of delivery boys.

2.1.3 Scope of the System

Following are the modules of our system:

Customer Module:

- Login
- Create account
- View food items
- Add items to cart
- Place orders
- Specify order to be delivered or picked up
- Track order status
- Review delivered orders
- Update account settings

Admin Module:

- Login
- Manage users
- Manage food items
- Manage food items' categories
- View and manage orders
- Manage delivery boys
- Update ordered item's status

2.1.4 Summary of Requirements (Initial Requirements)

Food Reality App must meet the following specific requirements standards:

1. Customers can visit the Food Reality App without having to sign up, but for placing orders there should be login and signup(in case there is no previous account). Customers can view all the available food item details and can also view the 3D models of the items too if the device is AR supported. Otherwise, he/she can scan the QR code to view the 3D models in AR supported devices. Then , customers can add selected food items to their cart. And upon checkout, they can review their order details , delivery address and specify whether they want pick-up or delivery option for their order. In this way , they can place their order. Upon successful delivery, Customer can share his/her valuable feedback about the order. Customers can also track the status of the order, whether it is placed or delivered etc.

2. Customers can also update his/her account details.

3. Admin of Food Reality can login with provided credentials. Admin can also view all the ongoing or previous orders. Admin will receive order details when customers place an order. He can also update the status of order, whether it is placed or delivered successfully. Admin can also manage users accounts.He can also add, delete or modify any food item details and can also manage their categories too. He can also maintain a record of the delivery boys.

2.2 Identifying External Entities

a. Over Specify Entities from Abstract

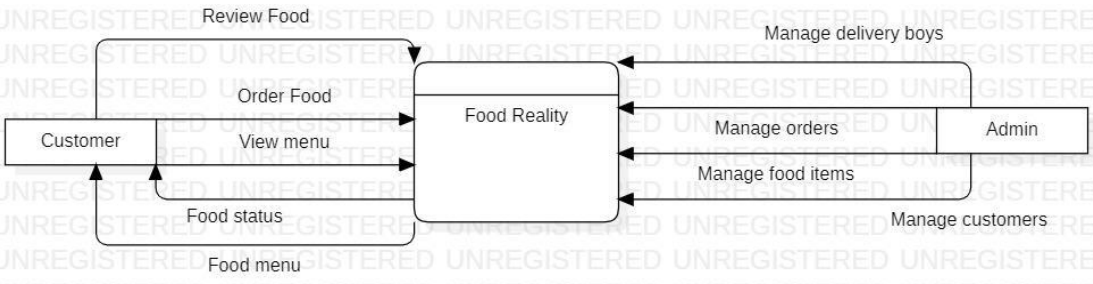
On the basis of abstract, following are the entities of Food Reality:

- Customer
- Admin
- Delivery Boy
- Food Item
- Payment methods
- Order status
- Website
- Restaurant
- GPS tracking

b. Perform Refinement

- Customer
- Admin

2.3 Context Level Data Flow Diagram



2.4 Capture "shall" Statements

Para #	External Entities	Initial Requirements
1.0	Customer	Customer “Shall” register himself to the system.
1.0	Customer	Customer “Shall” login to the system.
1.0	Customer	Customer “Shall” view all the available food items details
1.0	Customer	Customer “Shall” view the 3D models of the food items
1.0	Customer	Customer “Shall” scan QR code to view model in AR supported device.
1.0	Customer	Customer “Shall” add selected food items to their cart.
1.0	Customer	Customers “Shall” review their order details, delivery address and specify whether they want pick-up or delivery option for their order.
1.0	Customer	Customer “Shall” place their order
1.0	Customer	Customer “Shall” share his/her valuable feedback
1.0	Customer	Customer “Shall” track the status of the order
2.0	Customer	Customer “Shall” update his/her account details (name, delivery address,phone number, password)
3.0	Admin	Admin “Shall” login to the system.
3.0	Admin	Admin “Shall” view all the order details.
3.0	Admin	Admin “Shall” receive order details when customer place the order

3.0	Admin	Admin “Shall” update the status of order
3.0	Admin	Admin “Shall” manage users accounts
3.0	Admin	Admin “Shall” add, delete or modify any food item details
3.0	Admin	Admin “Shall” manage food item categories
3.0	Admin	Admin “Shall” maintain a record of the delivery boys.

2.5 Allocate Requirements

Para #	**Initial Requirements**	**Use Case Name**
1.0	Customer “Shall” register himself to the system.	UC_Register
1.0	Customer “Shall” login to the system.	UC_Login
1.0	Customer “Shall” view all the available food items details	UC_View_Food_Items
1.0	Customer “Shall” view the 3D models of the food items	UC_View_3D_Food_Items
1.0	Customer “Shall” scan QR code to view model in AR supported device.	UC_Scan_QR
1.0	Customer “Shall” add selected food items to their cart.	UC_Add_Items_To_Cart
1.0	Customers “Shall” review their order details, delivery address and specify whether they want pick-up or delivery option for their order.	UC_Specify_Delivery_or_Pickup
1.0	Customer “Shall” place their order	UC_Place_Order

1.0	Customer “Shall” share his/her valuable feedback	UC_Review_Delivered_Orders
1.0	Customer “Shall” track the status of the order	UC_Track_Order_Status
2.0	Customer “Shall” update his/her account details (name, delivery address,phone number, password)	UC_Update_Account_Settings
3.0	Admin “Shall” login to the system.	UC_Login
3.0	Admin “Shall” view all the order details.	UC_View_And_Manage_Orders
3.0	Admin “Shall” update the status of order	UC_Update_Ordered_Items_Status
3.0	Admin “Shall” manage users accounts	UC_Manage_Users
3.0	Admin “Shall” add, delete or modify any food item details	UC_Manage_Food_Items
3.0	Admin “Shall” manage food item categories	UC_Manage_Food_Items_Categories
3.0	Admin “Shall” maintain a record of the delivery boys.	UC_Manage_Delivery_Boys

2.6 Prioritize Requirements

Para #	Rank	Initial Requirements	Use Case ID	Use Case Name
1.0	Highest	Customer “Shall” register himself to	UC_1	UC_Register

		the system.		
1.0	Highest	Customer “Shall” login to the system.	UC_2	UC_Login
1.0	Highest	Customer “Shall” view the 3D models of the food items	UC_3	UC_View_3D_Food_Items
1.0	Highest	Customer “Shall” place their order	UC_4	UC_Place_Order
3.0	Highest	Admin “Shall” login to the system.	UC_5	UC_Login
1.0	Medium	Customer “Shall” scan QR code to view model in AR supported device.	UC_6	UC_Scan_QR
1.0	Medium	Customer “Shall” view all the available food items details	UC_7	UC_View_Food_Items
1.0	Medium	Customer “Shall” add selected food items to their cart.	UC_8	UC_Add_Items_To_Cart
3.0	Medium	Admin “Shall” view all the order details.	UC_9	UC_View_And_Manage_Orders
3.0	Medium	Admin “Shall” add, delete or modify any food item details	UC_10	UC_Manage_Food_Items
3.0	Medium	Admin “Shall” update the status of order	UC_11	UC_Update_Ordered_Items_Status
1.0	Medium	Customer “Shall” share his/her valuable feedback	UC_12	UC_Review_Delivered_Orders
1.0	Medium	Customer “Shall” track the status of the order	UC_13	UC_Track_Order_Status
1.0	Low	Customers “Shall” review their order details , delivery address and specify	UC_14	UC_Specify_Delivery_or_Pickup

		whether they want pick-up or delivery option for their order.		
3.0	Low	Admin “Shall” manage users accounts	UC_15	UC_Manage_Users
3.0	Low	Admin “Shall” manage food item categories	UC_16	UC_Manage_Food_Items_Categories
2.0	Low	Customer “Shall” update his/her account details (name, delivery address,phone number, password)	UC_17	UC_Update_Account_Settings
3.0	Low	Admin “Shall” maintain a record of the delivery boys.	UC_18	UC_Manage_Delivery_Boys

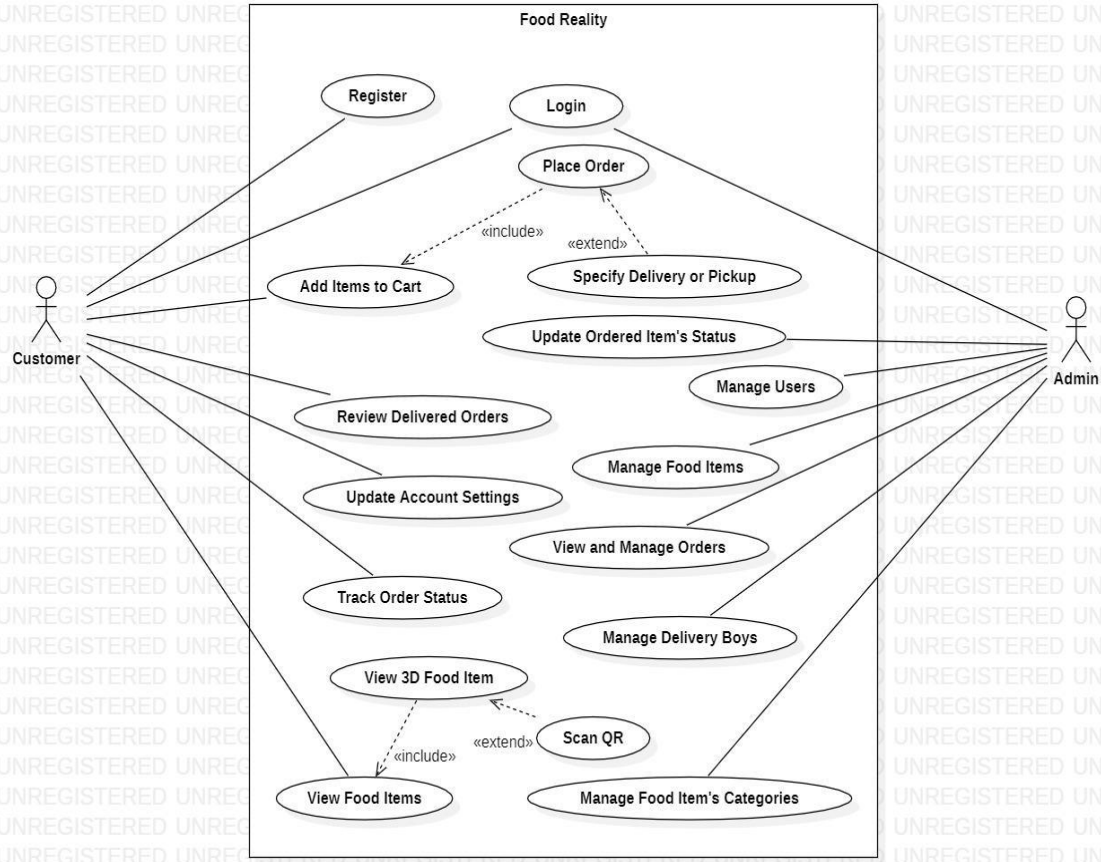
2.7 Requirements Trace-ability Matrix

Sr#	Para#	Initial Requirements	Build	Use Case Name	Category
1	1.0	Customer “Shall” register himself to the system.	B1	UC_Register	Business
2	1.0	Customer “Shall” login to the system.	B1	UC_Login	Business
3	1.0	Customer “Shall” view all the available food items details	B1	UC_View_Food_Items	Business
4	1.0	Customer “Shall” view the 3D models of the food items	B1	UC_View_3D_Food_Items	Business
5	1.0	Customer “Shall” scan QR code to view model in AR	B1	UC_Scan_QR	Business

		supported device.			
6	1.0	Customer “Shall” add selected food items to their cart.	B1	UC_Add_Items_To_Cart	Business
7	1.0	Customers “Shall” review their order details, delivery address and specify whether they want pick-up or delivery option for their order.	B1	UC_Specify_Delivery_or_Pickup	Business
8	1.0	Customer “Shall” place their order	B1	UC_Place_Order	Business
9	1.0	Customer “Shall” share his/her valuable feedback	B1	UC_Review_Delivered_Orders	Business
10	1.0	Customer “Shall” track the status of the order	B1	UC_Track_Order_Status	Business
11	2.0	Customer “Shall” update his/her account details (name, delivery address,phone number, password)	B1	UC_Update_Account_Settings	Business
12	3.0	Admin “Shall” login to the system.	B1	UC_Login	Business
13	3.0	Admin “Shall” view all the order details.	B1	UC_View_And_Manage_Orders	Business
14	3.0	Admin “Shall” update the status of order	B1	UC_Update_Ordered_Items_Status	Business
15	3.0	Admin “Shall” manage users accounts	B1	UC_Manage_Users	Business

16	3.0	Admin “Shall” add, delete or modify any food item details	B1	UC_Manage_Food_Items	Business
17	3.0	Admin “Shall” manage food item categories	B1	UC_Manage_Food_Items_Categories	Business
18	3.0	Admin “Shall” maintain a record of the delivery boys.	B1	UC_Manage_Delivery_Boys	Business

2.8 High level use case diagram



Part 2

1. Use case Description

1.1. Add food item:

Brief description

Admin will add food item model, enter food item details.

Preconditions

Admin is authenticated and identified.

Basic flow

Admins can enter food item including both the details and model of it.

Post conditions

The item should be added with a proper pop-up message.

1.2. Update food item:

Brief description

Admin can update food item details like model, price, name etc.

Preconditions

Item must already exist.

Basic flow

Admin alters the details of previously entered food item and system put static content on storage.

Post conditions

The item should be updated with a proper pop-up message.

1.3. Delete food item:

Brief description

Admin will delete food item model, delete static content from storage

Preconditions

Item must already exist.

Basic flow

Admin deletes the details of previously entered food item and system will remove static content from storage.

Post conditions

The item should be deleted with a proper pop-up message.

1.4. View food item:

Brief description

Customer and Admin can view the available food item.

Basic flow

Customer opens the web application and clicks on an item to view it.

Alternate flows

Customer can search food items and then view them.

Post conditions

Customer can select the item and can place order by signing into the application.

1.5. Scan QR code:

Brief description

Customer can scan the QR code and view the 3D model of food item on AR supported device.

Preconditions

Customer must be on a device that supports AR.

Basic flow

Customer open application, wants to view 3D model, if device does not support AR, scan the QR code on desired device.

Alternate flows

If QR code scanning does not work restart the application or check the internet connection.

Post conditions

The item must be open in 3D view on AR supported device.

1.6. Enter Food Item Details:

Brief description

Admin will add food item details such as name, price, categories etc.

Preconditions

Admin is authenticated and identified.

Basic flow

Admin will add food item details such as name, price, categories etc.

Alternate flows

If item addition does not work restart the application.

Post conditions

The item should be added with a proper pop-up message.

1.7. Put Static Content on Storage:

Brief description

If admin selects static content (model or images), then system will put it on storage.

Preconditions

Food item details to be put on storage are already entered.

Basic flow

System will put the entered static content on storage.

Post conditions

The item static content is uploaded with proper pop-up message.

1.8. Delete Static Content from Storage:

Brief description

If admin asks to delete the static content, then the system will delete it from storage.

Preconditions

Food item to be deleted is there or exists.

Basic flow

System will delete the entered static content from storage.

Alternate flows

If an item to be deleted does not exist, then display proper pop-up message.

Post conditions

The item static content is deleted with proper pop-up message.

1.9. View food item in AR:

Brief description

Customer can view food item model in AR by clicking on a button.

Preconditions

Customer has selected a food item of which he/she wants to see the model.

Basic flow

Customer will click on a button to see food item in AR. If the device is AR supported, Food item model will be displayed.

Alternate flows

If the customer's device does not support AR, scan QR code will appear to see model on AR supported device.

Post conditions

Food Item model will be displayed.

1.10. Check AR Supported:

Brief description

The system will check if the device is AR supported.

Preconditions

Customer has requested to see food item model in AR.

Basic flow

The system will check if the device is AR supported.

Alternate flows

If the customer's device does not support AR, scan QR code will appear to see model on AR supported device.

Post conditions

Static content will be fetched from storage.

1.11. Get Static Content from Storage:

Brief description

The system will get the static content of the food item selected from the storage.

Preconditions

Customer has requested to see food item model in AR and the device in AR supported.

Basic flow

The system will get the static content from the storage.

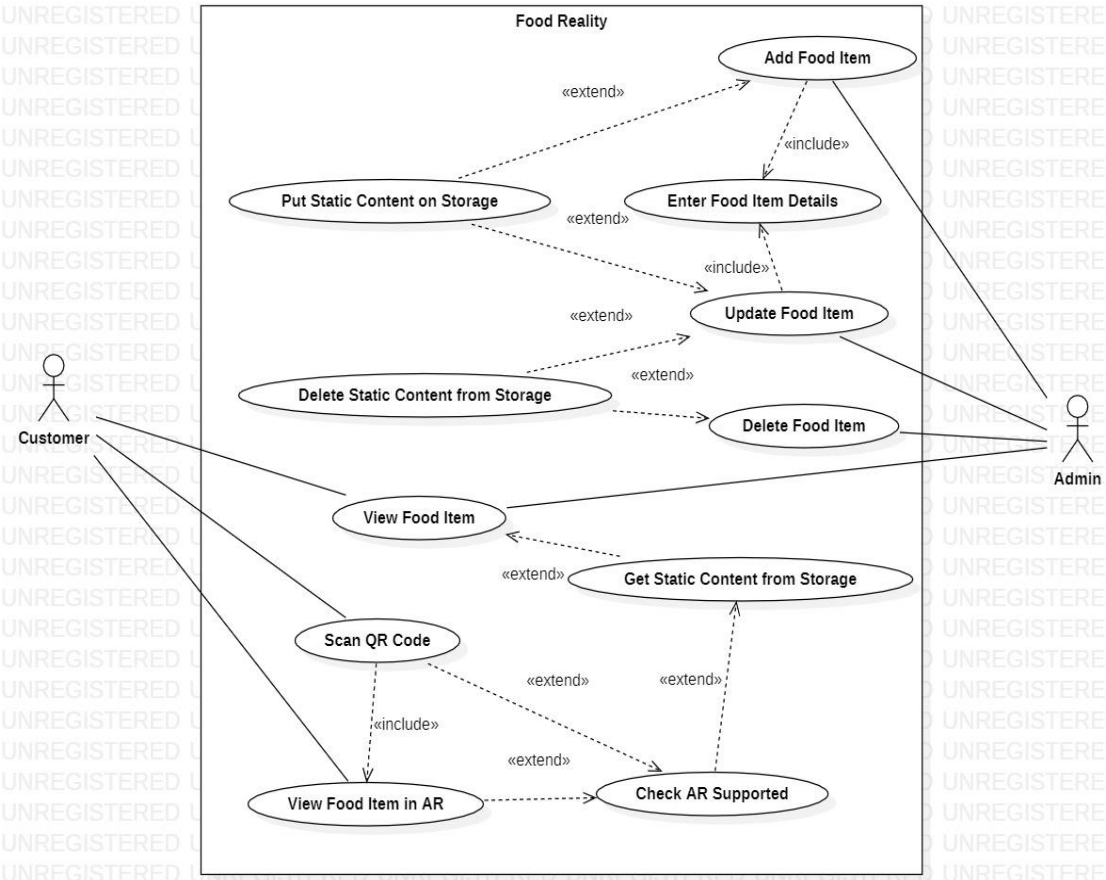
Alternate flows

If contents are not being fetched, reload to get it again.

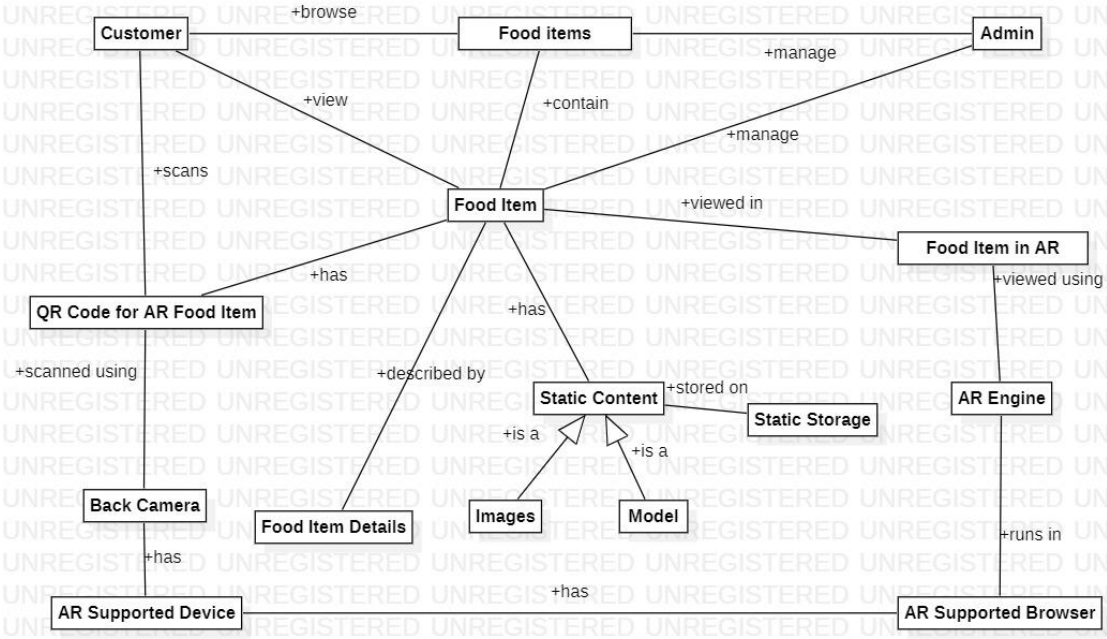
Post conditions

The fetched static content is displayed.

2. Usecase Diagram (refined and updated)

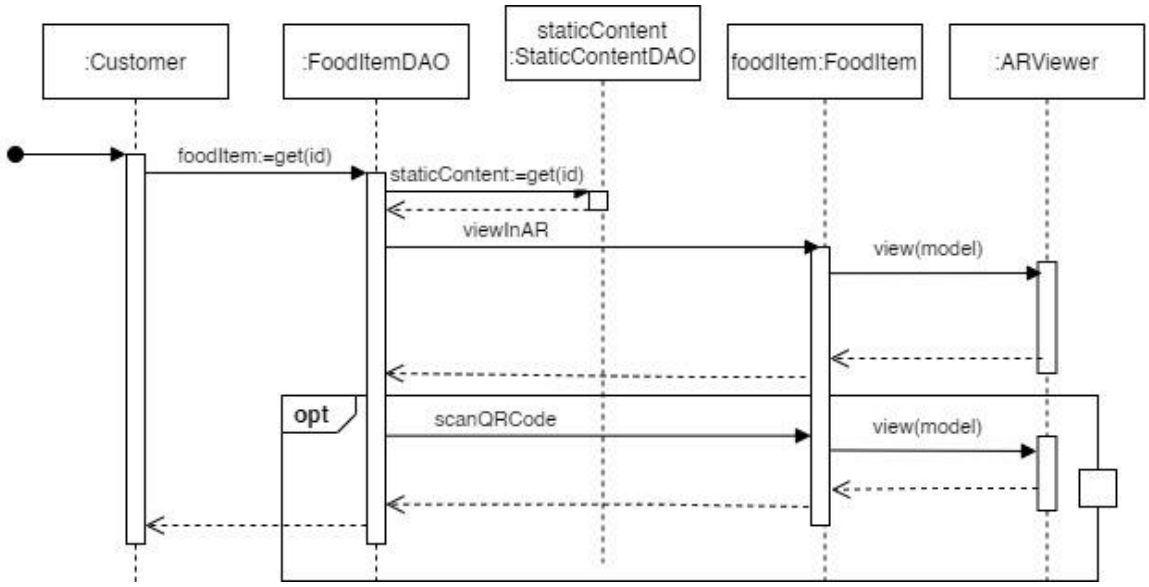


3. Domain Model

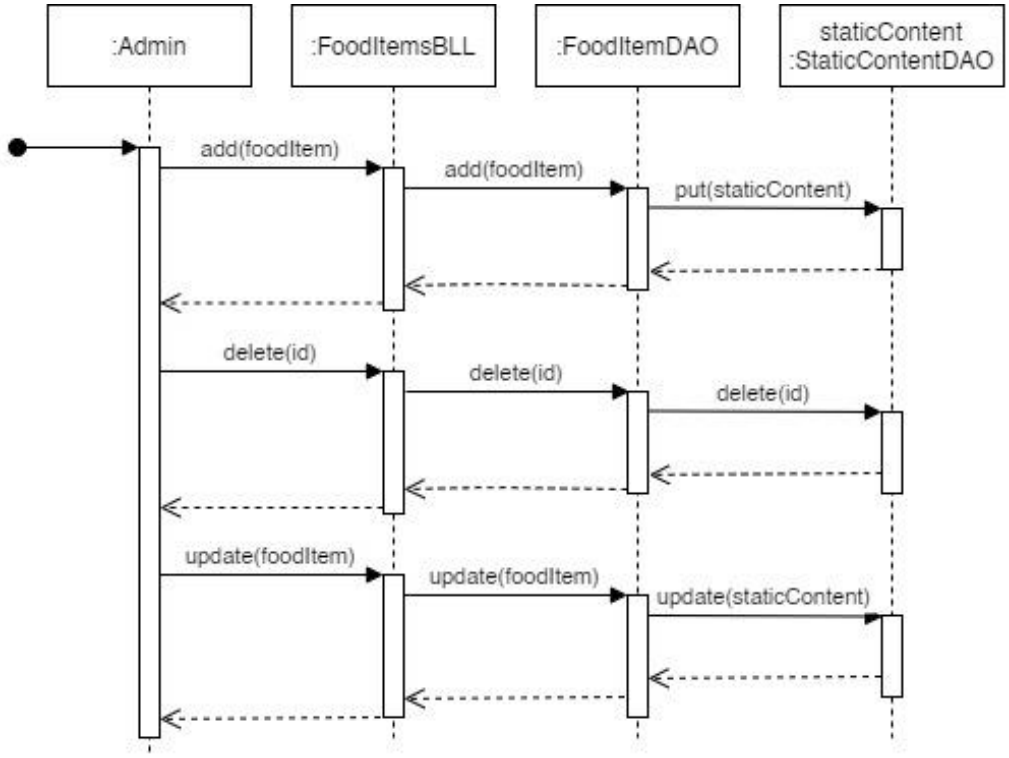


4. Sequence Diagram

View Food Item In AR:

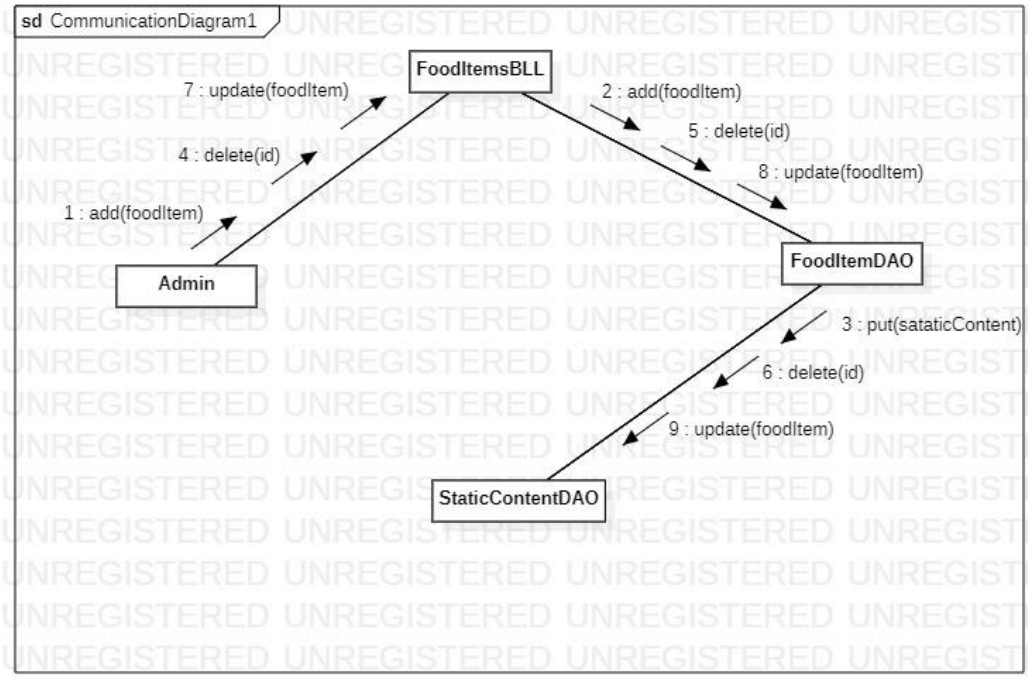


Manage food items:

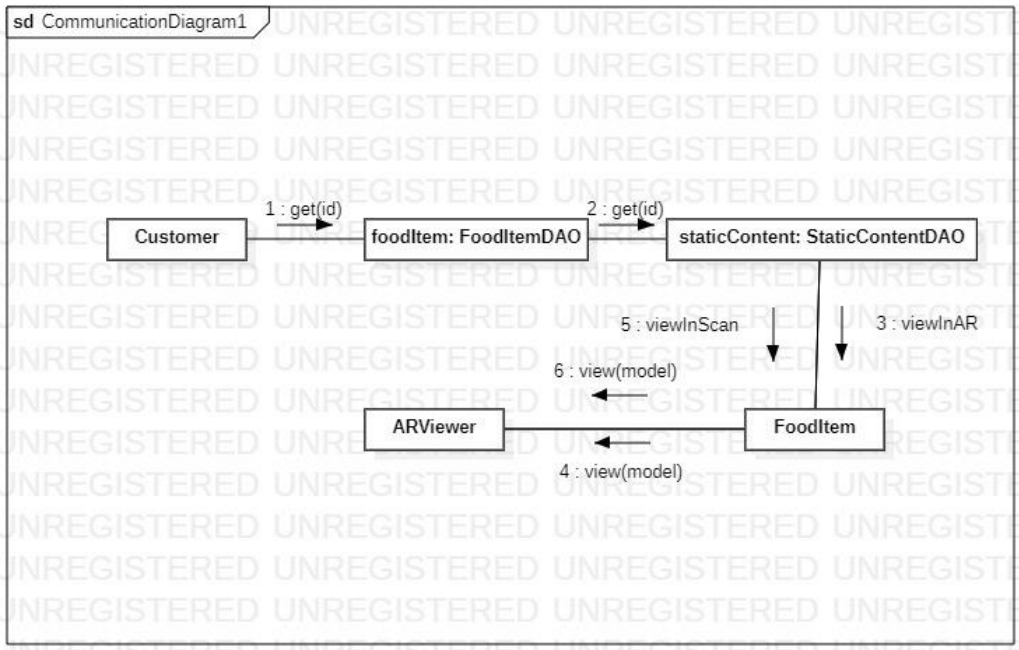


5. Collaboration Diagram

Manage food items:



View Food Item In AR:



6. Operation Contracts

Name: View Food Items Model

Responsibilities: Provide an interface to view 3d food model

Cross references: Use case UC_View_3D_Food_Items

Exceptions: Food model must exist for AR view.

Preconditions: Customer should have account and logged in properly.

Post conditions: Customer can view all the 3d food model properly.

Name: Manage Food Items Model

Responsibilities: Provide an interface to the admin to add, delete or modify any food item details.

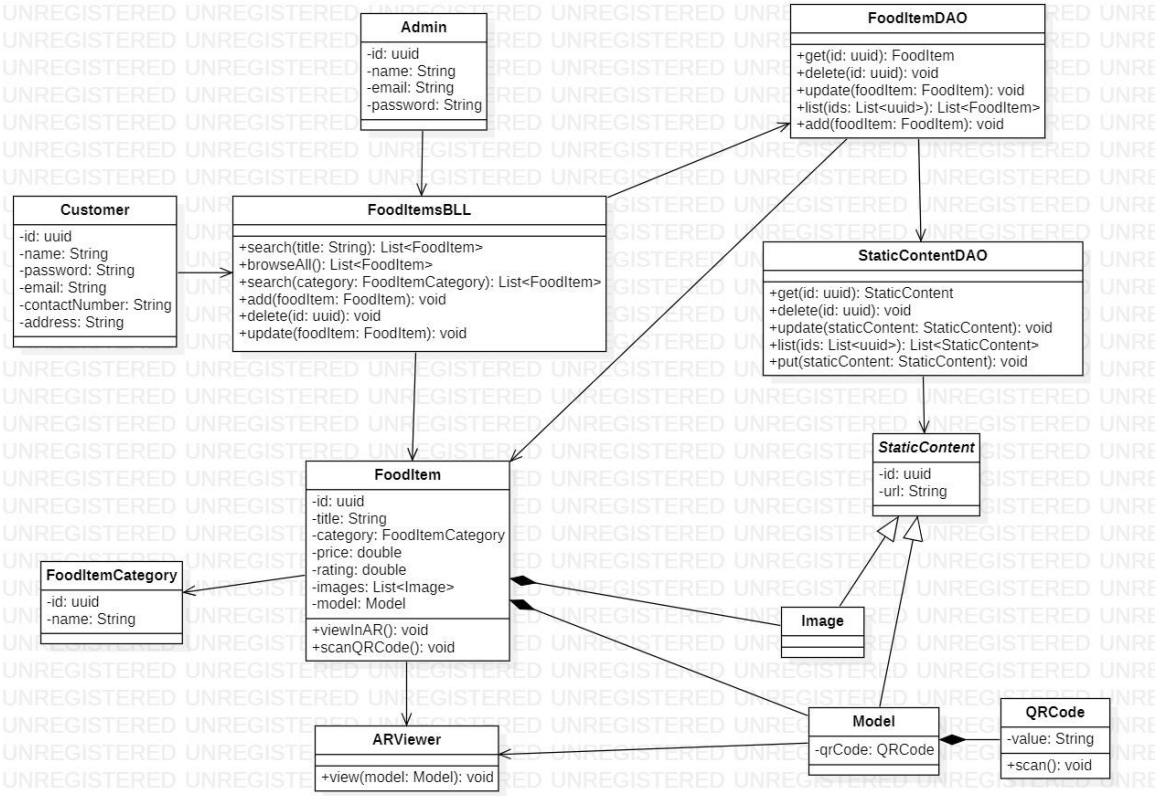
Cross references: Use case UC_Manage_Food_Items

Exceptions: None

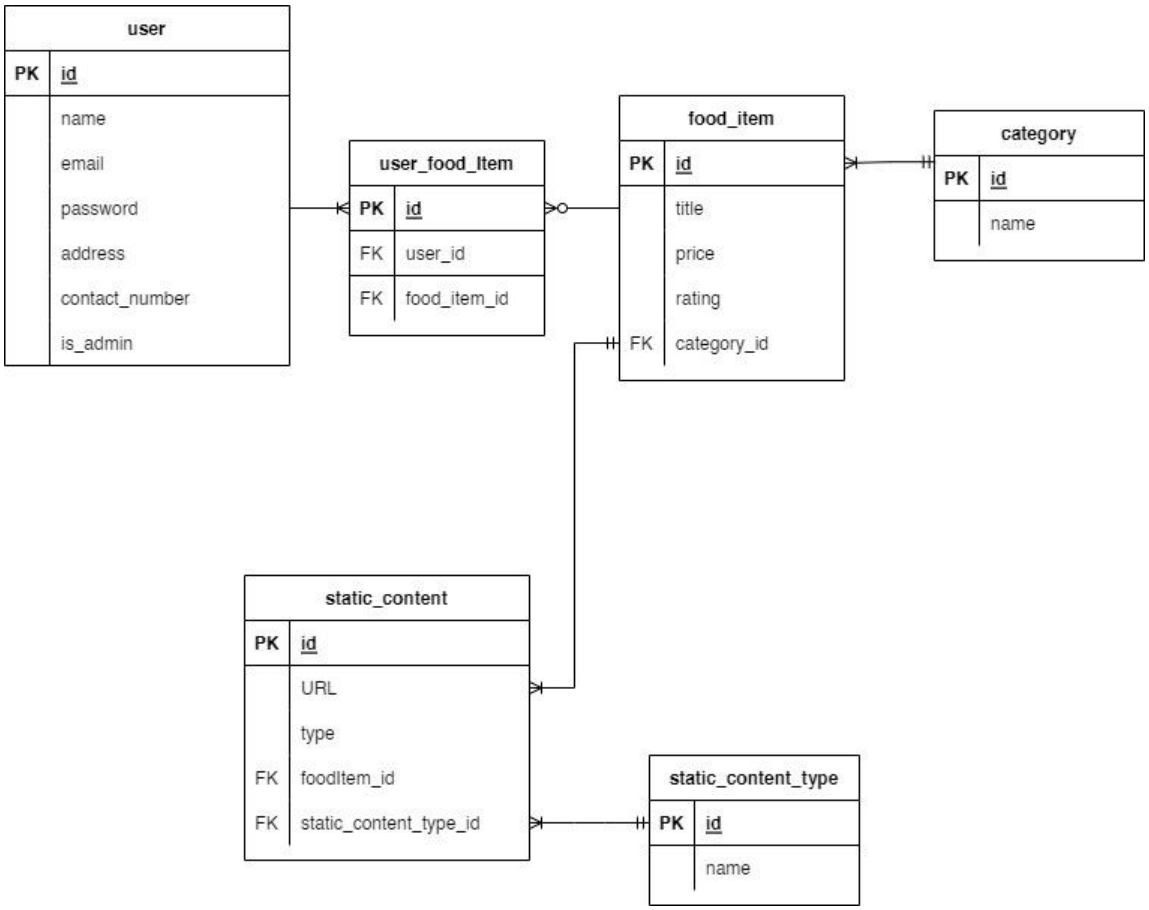
Preconditions: Admin should have account and logged in properly.

Post conditions: Admin can add, delete or modify any food item details successfully.

7. Design Class Diagram



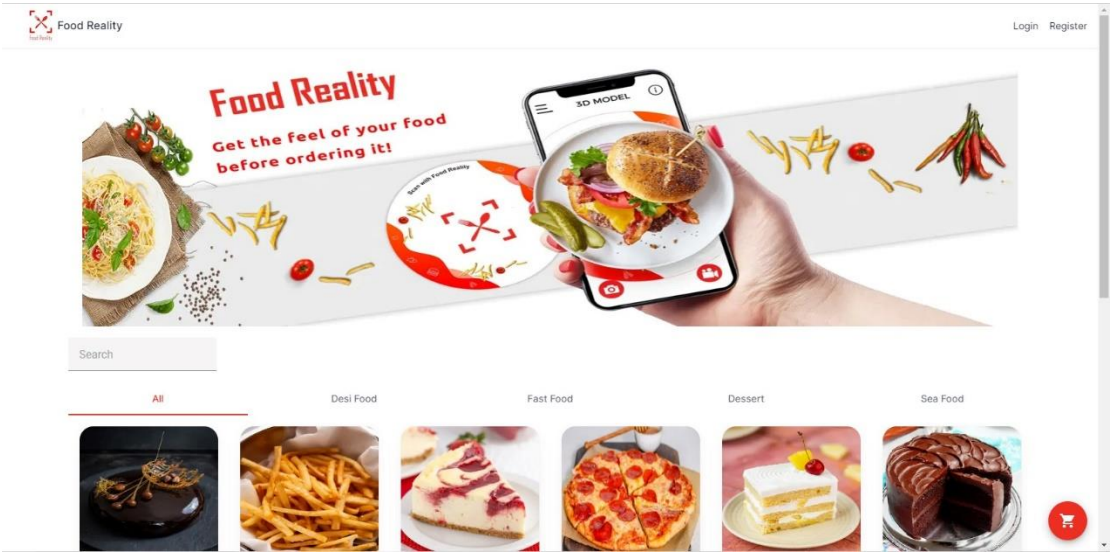
8. Data Model



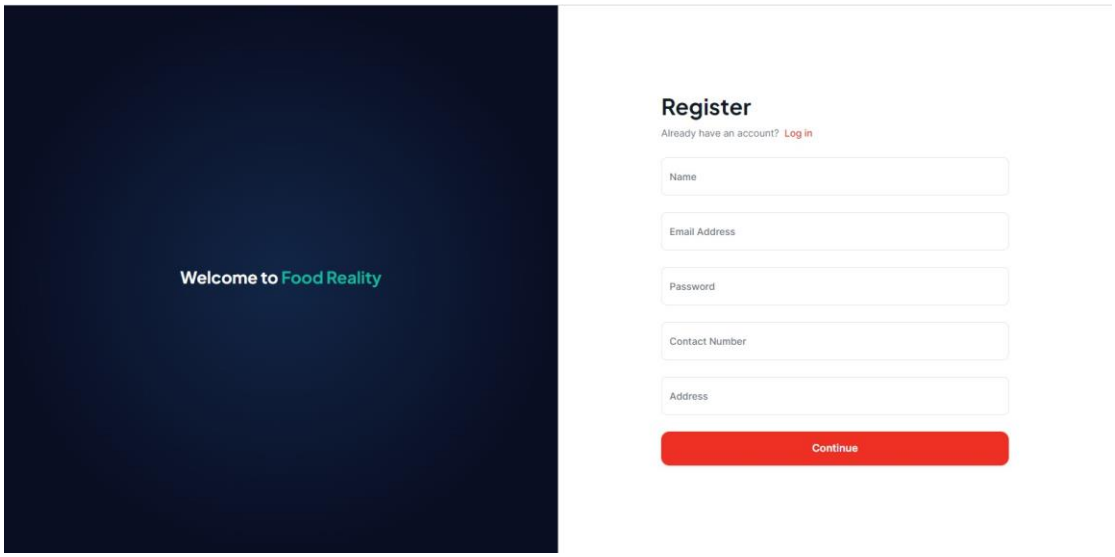
Part 3

Screenshots of the Application

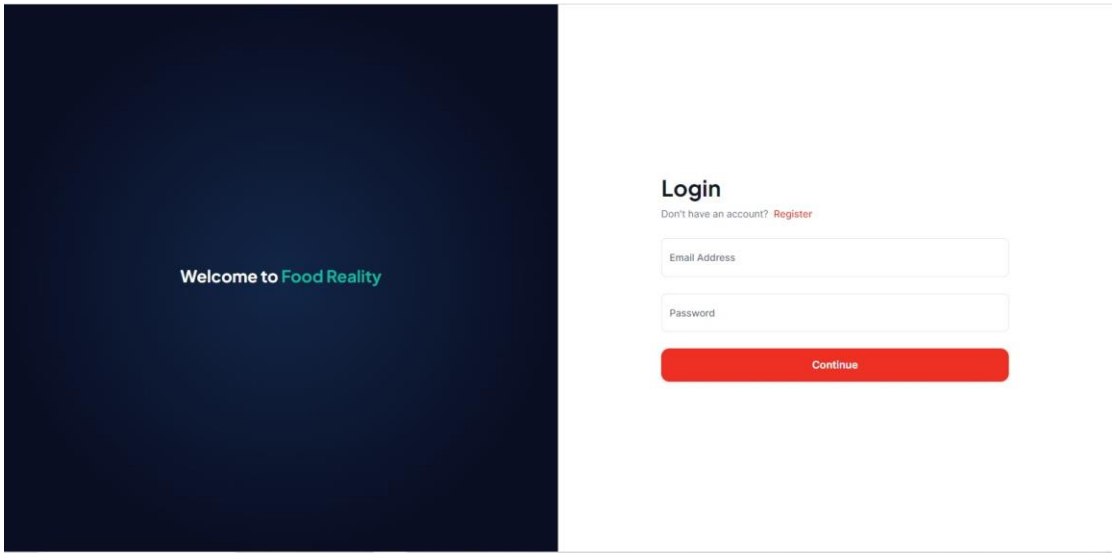
Home Page



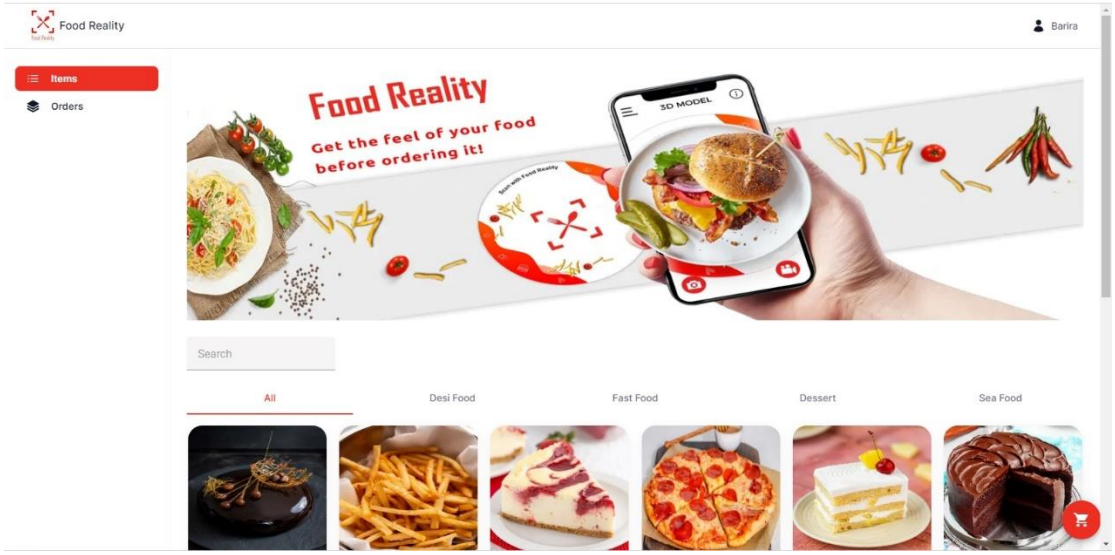
Register

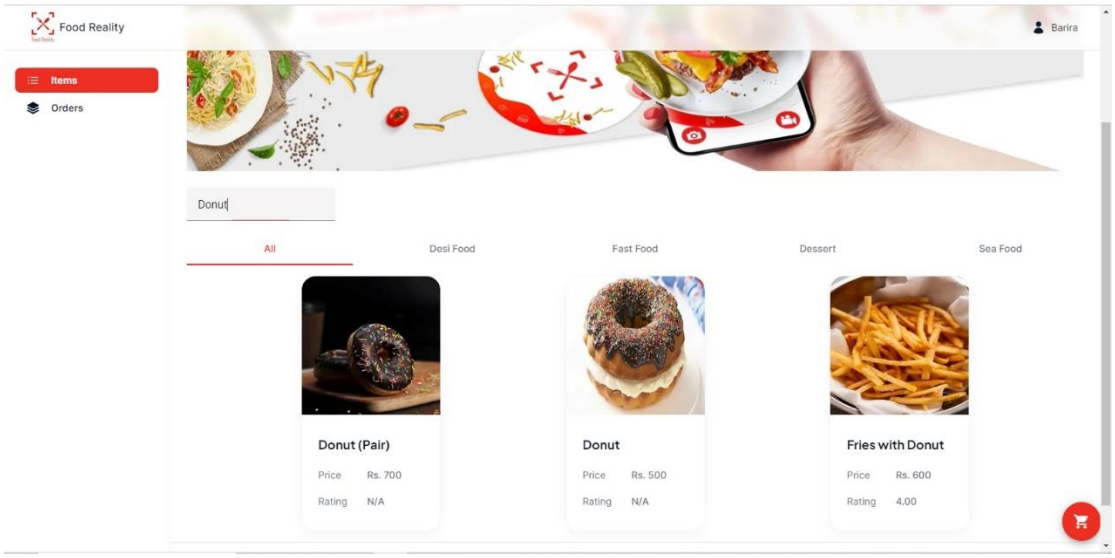


Login

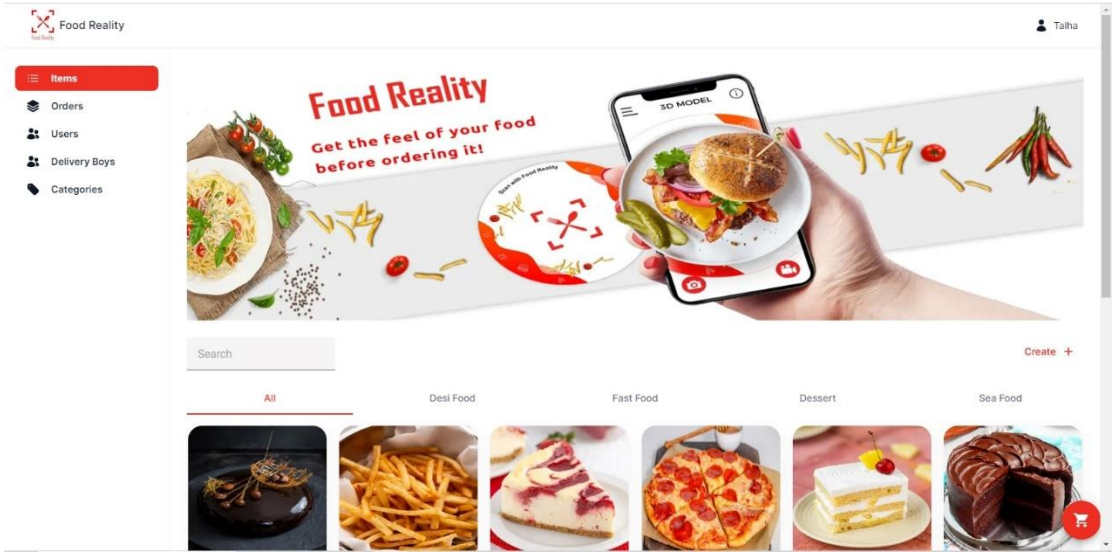


Customer Home Page

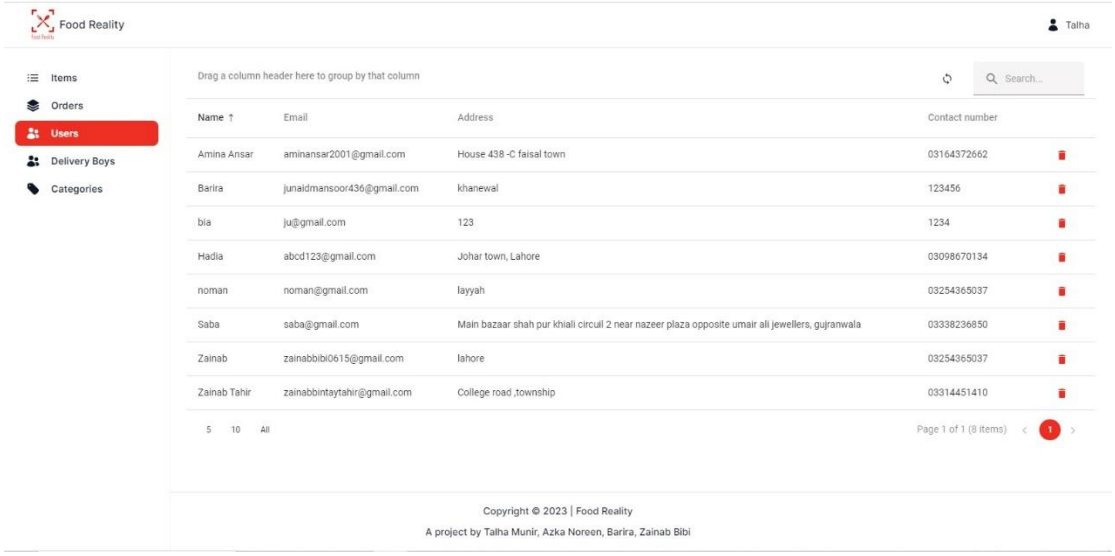


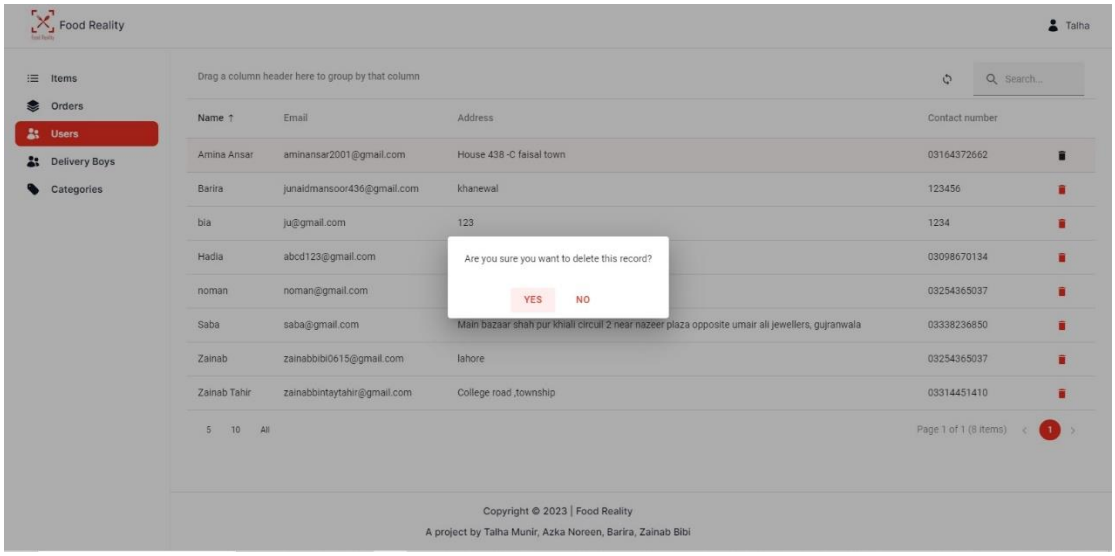


Admin Main Page

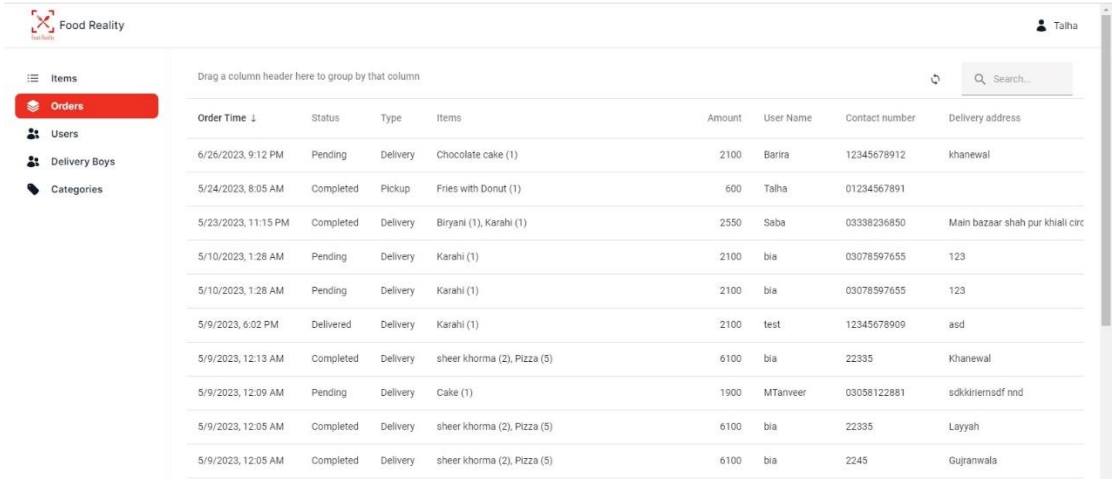


Users

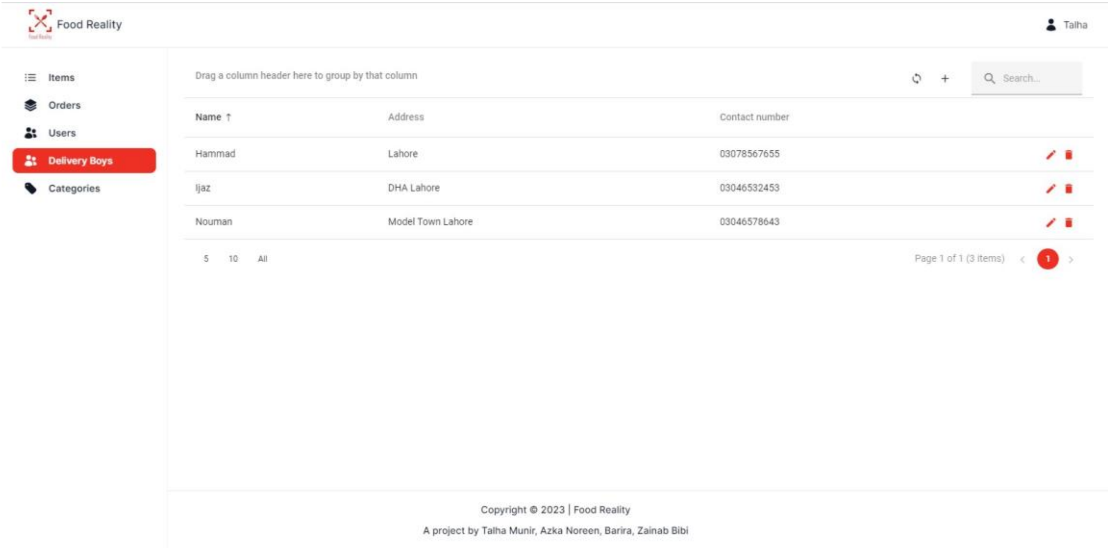


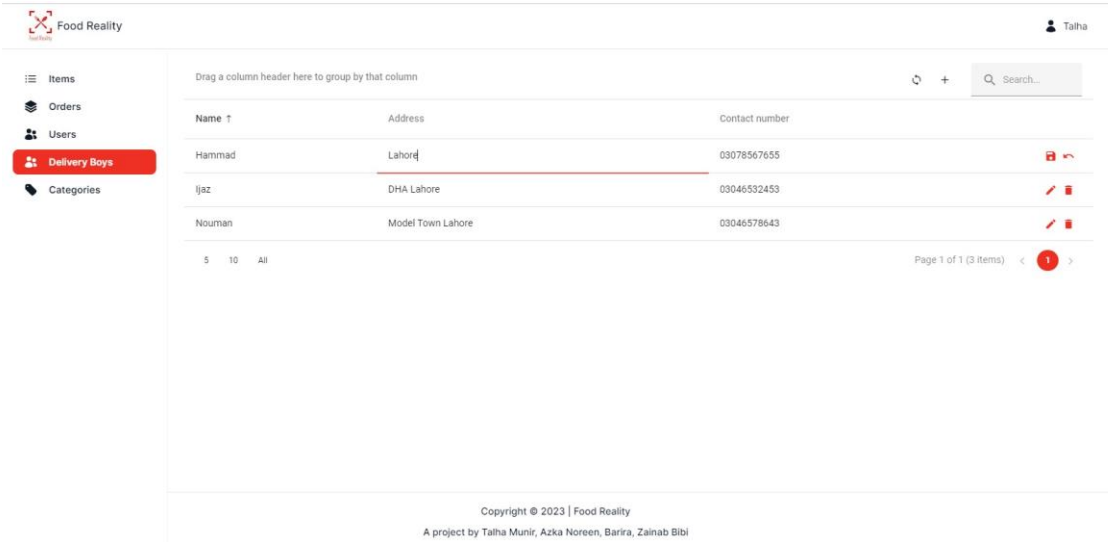


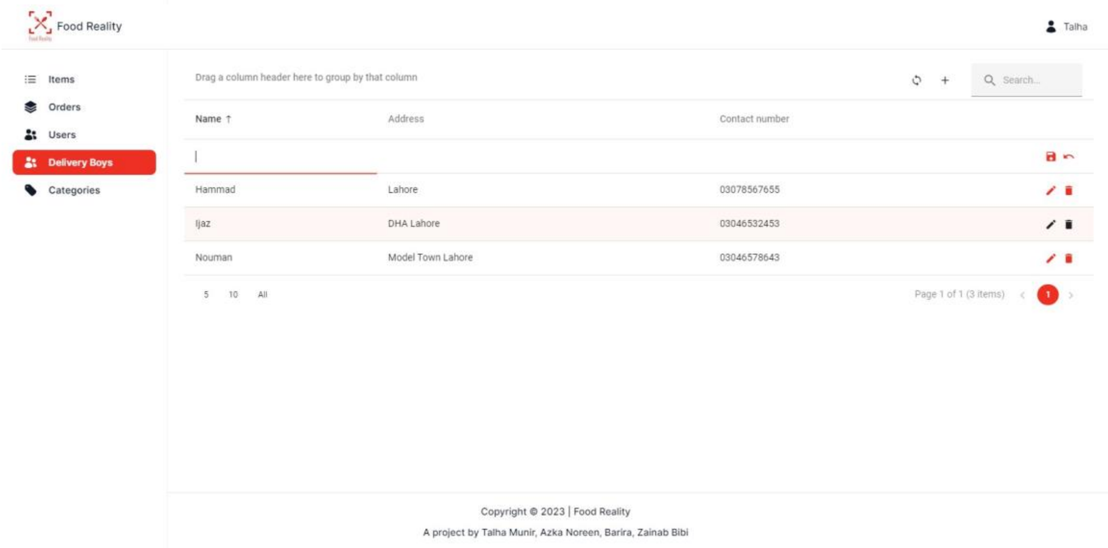
Orders



Delivery Boys







Categories


Food Reality
Talha
Items
Orders
Users
Delivery Boys
Categories
Search...
Name ↑
Desi Food
Dessert
Fast Food
Sea Food
5 10 All
Page 1 of 1 (4 items)
1
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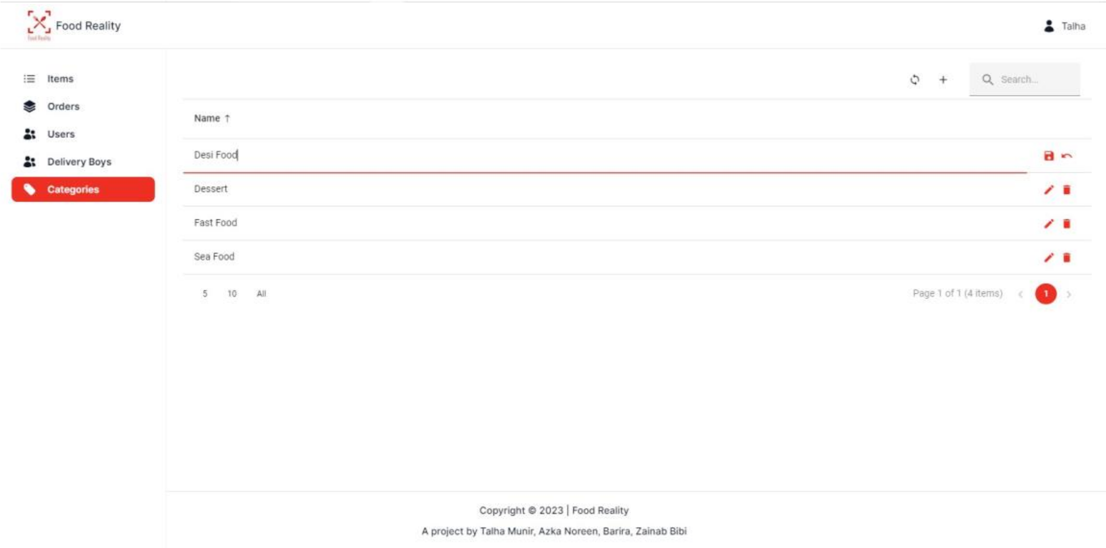
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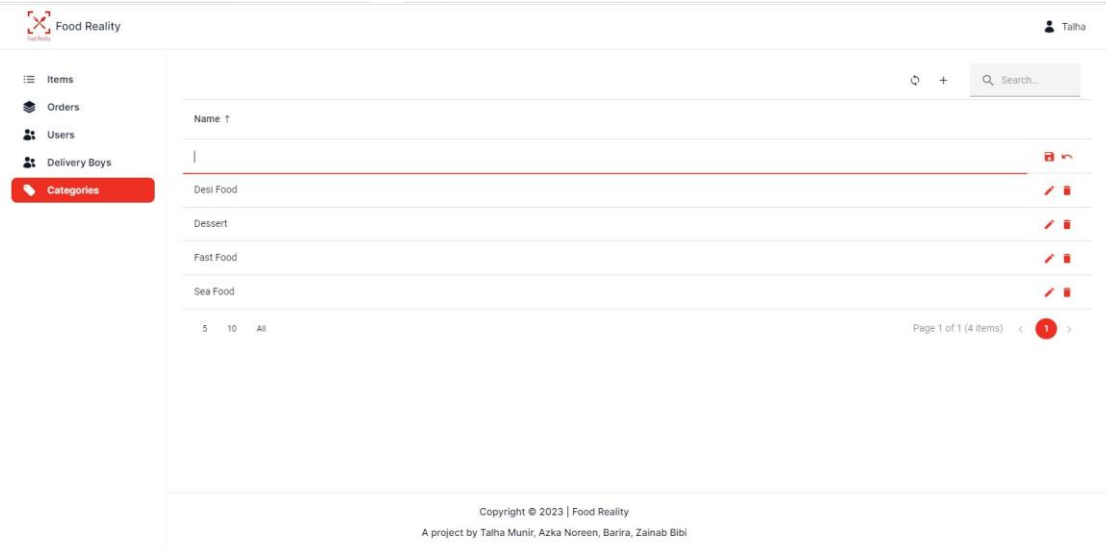
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Page 1 of 1 (4 items)
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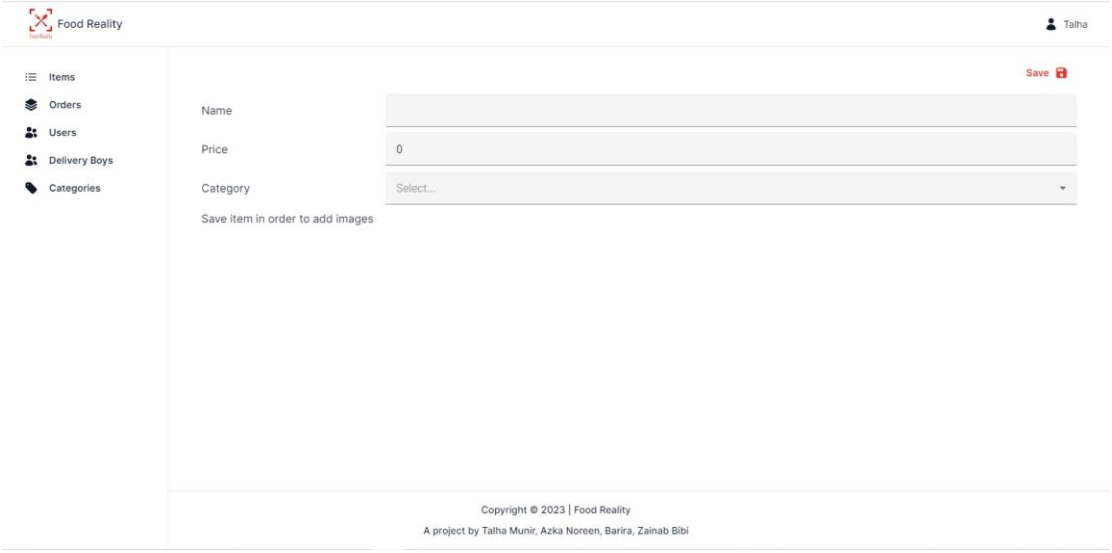
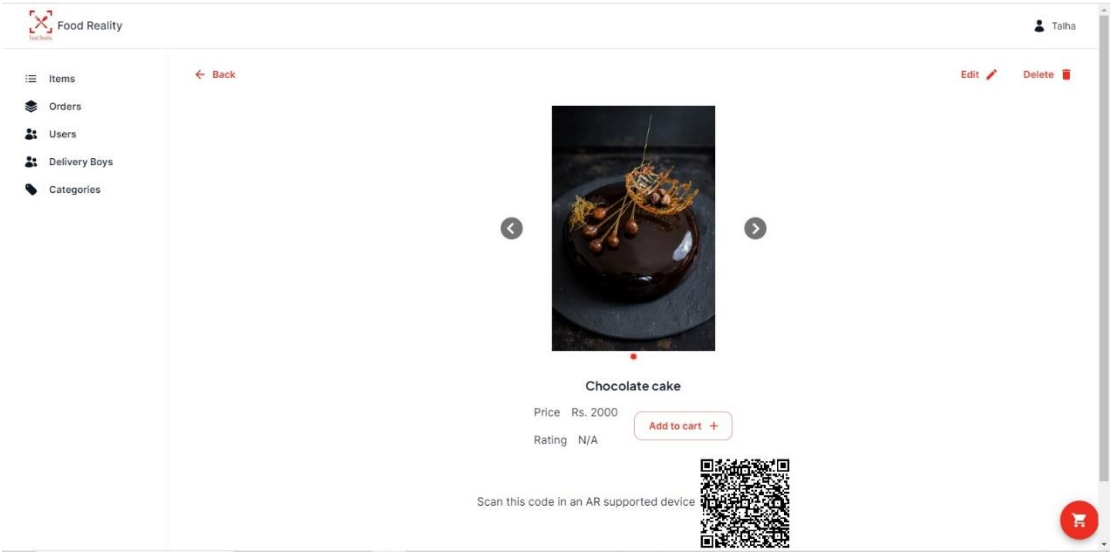
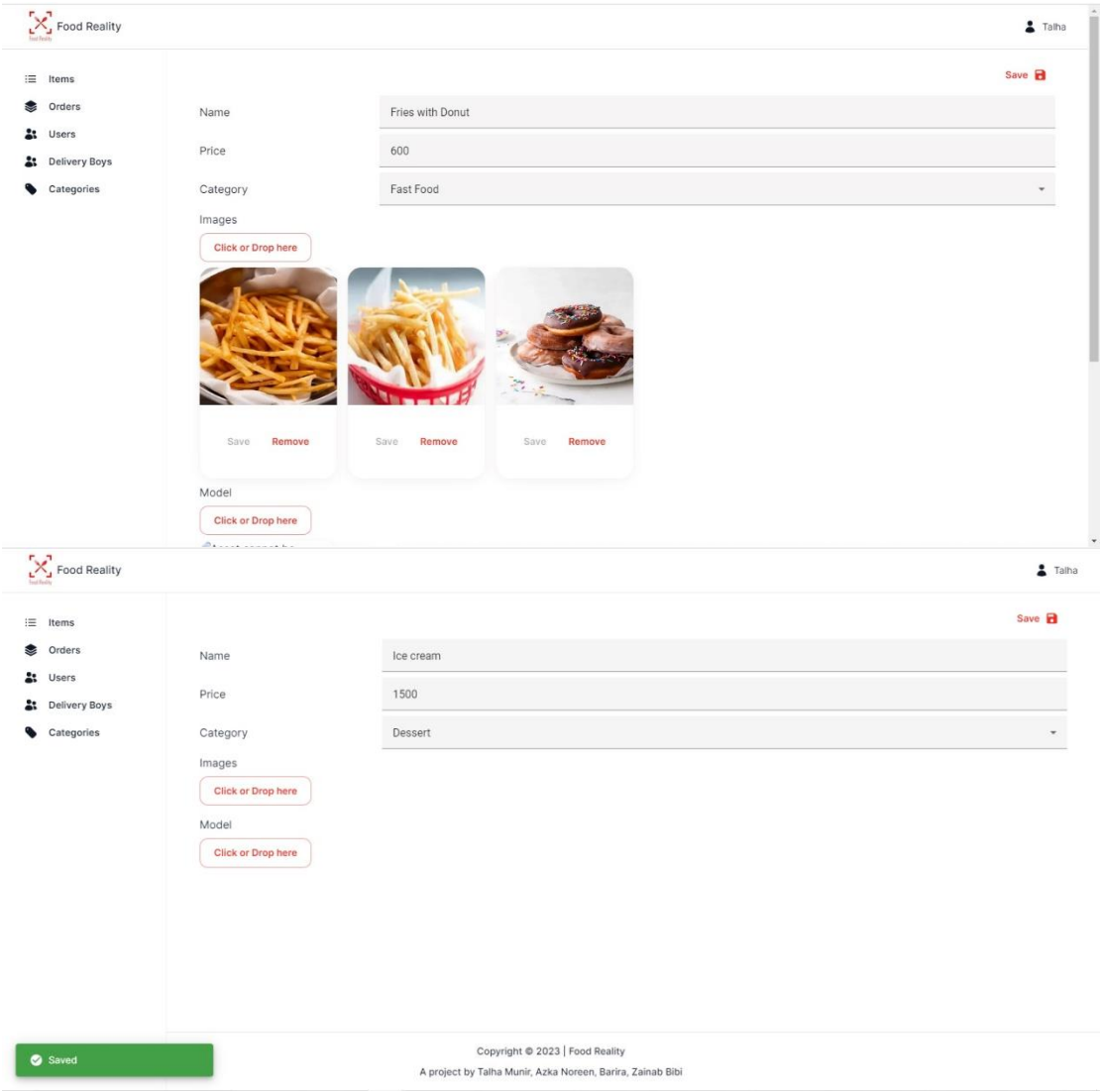
Create Food Item



View Food Item



Edit Food Item



Food Items in Augmented Reality

Part 4

User Manual

This manual will guide you through the various features and functionalities of our platform, ensuring that you have a seamless and enjoyable dining experience. Please read this manual carefully to make the most of our application.

Account Creation and Login:

- To begin, visit our website and click on the "Sign Up" button to create your account.
- Fill in the required details such as your name, email address, and password.
- Once you have registered, you can log in to your account using your credentials.

Browsing and Purchasing Food Items:

- After logging in, you will be directed to the homepage, where you can browse through different food categories.
- Click on a category to view the available food items.
- Explore the menu and click on the desired food item to see more details, including a description and price.
- To add an item to your cart, click the "Add to Cart" button.
- Review your cart by clicking on the shopping cart icon, where you can modify quantities or remove items.
- When you are ready to complete your order, proceed to the checkout page.

Augmented Reality (AR) Experience:

- Our web application incorporates cutting-edge augmented reality (AR) technology for an immersive ordering experience.
- If you are using a mobile device, navigate to the food item details page and click on the "View in AR" button.
- Grant the necessary permissions to access your device's back camera.
- Point your camera at a flat surface, and the AR model of the food item will appear in your environment.
- Move and rotate your device to view the item from different angles.
- This feature allows you to visualize the food items realistically before making a purchase.
- In case you are using a desktop device, you will find a QR code on the food item details page.
- Scan the QR code using your mobile device, and it will provide a link to access the AR model.

Admin Panel (for Administrators):

- The admin panel is designed to empower administrators to manage various aspects of the web application.
- As an administrator, log in to your account using the provided credentials.
- Once logged in, you will have access to the admin panel.

- From the admin panel, you can manage food items, categories, delivery personnel, and order statuses effortlessly.
- Add, edit, or delete food items and categories as per your restaurant's offerings.
- Assign and track delivery personnel for efficient order management.
- Update order statuses to keep customers informed about their orders.

Conclusion:

- Our online restaurant web application aims to revolutionize the way customers interact with online food platforms.
- By providing a user-friendly interface, augmented reality (AR) technology, and an immersive ordering experience, we bridge the gap between virtual and physical dining experiences.
- Enjoy exploring our menu, visualizing food items in AR, and placing orders conveniently through our platform.

We hope this user manual has provided you with a comprehensive understanding of our innovative online restaurant web application. If you have any further questions or need assistance, please don't hesitate to contact our support team. Enjoy your dining experience!

END OF PROJECT

BY THE GRACE OF ALLAH ALMIGHTY