

Project Report On



Hunger Help

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Post Graduate Diploma in Advanced Computing

from

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Introduction

Abstract :

To developed mobile application which reduces the amount of food wastage produced in the functions, restaurants and in the mess. The application features the donation of food collection of food and direct contact with the nearby NGOs. For Donation of Food following needs to be provided such as food details, location of where excess food is available, type and also the quantity of food available. Immediate Alerts to nearby NGOs, orphanage, volunteers to collect them. According to the recent survey, 1.3 billion tons of food are wasted each year and only one third of the food is consumed. This application reduces the amount of wastage of food. It also enables the direct contact with the NGOs and volunteers with details of the availability of the food.

Introduction :

In countries like India 795 million, out of the world population of 7.6 billion people, don't have enough food to lead a healthy or they are undernourished. That is approximately one out of nine people on earth. The reasons can be; firstly, that there is a shortfall in the food produced worldwide or second, there is massive food wastage phenomenon occurring. Looking further into these reasons, today the world is yielding one and half times more for an individual, roughly that is enough to feed close to 10 billion people. Despite this massive number, people across the globe don't have sufficient food, to conclude we can say that the food produced for the consumption of people is being intentionally or unintentionally wasted. Food waste is an ethical issue of global scale. According to the Food and Agriculture Organization (FAO) of the United Nations, roughly one-third of all the food produced worldwide each year, for human consumptions is either lost or wasted.

A short survey was undertaken by asking relatives, friends, close friends, neighbors, and a couple of more people about their experience of donating food. By doing so, it was found that earlier, almost a decade back, there was an issue in donating food as there were no food banks and NGOs. But then, there came platforms like food banks. Overcoming the limitations of the Food Banks, finding an opportunity to make a start-up, there came in a model: a food web management system.

Every piece of food wasted is an opportunity lost to improve world hunger and global food security. To define food waste, it means food supplies (grains, vegetables, poultry, & meat) or drinks which was predetermined to feed people now lies in landfills as garbage despite it being fit for human consumption. The food thrown is either spoiled or expired chiefly due to economic behavior, poor stock management and neglect. This is happening in developed, developing and underdeveloped countries with each's contribution higher than the other.

Tech-Stack used :--

- Java
- Spring Framework
- Spring Boot
- Spring Data JPA
- Hibernate
- MySQL
- Spring Security (JWT)

Software/Hardware Requirement

Server:

Processor: Intel Core i5 or equivalent AMD processor.

RAM: Minimum 8 GB RAM.

Storage: SSD storage for improved performance.

Network: Ethernet or Wi-Fi connectivity.

Operating System: Windows preferred for server deployment.

Client Devices:

Processor: Dual-core processor or higher.

RAM: Minimum 4GB RAM.

Storage: Sufficient storage for caching and local data.

Network: Ethernet or Wi-Fi connectivity.

Browser: Compatible with latest versions of popular browsers like Google Chrome, Mozilla Firefox, and Safari.

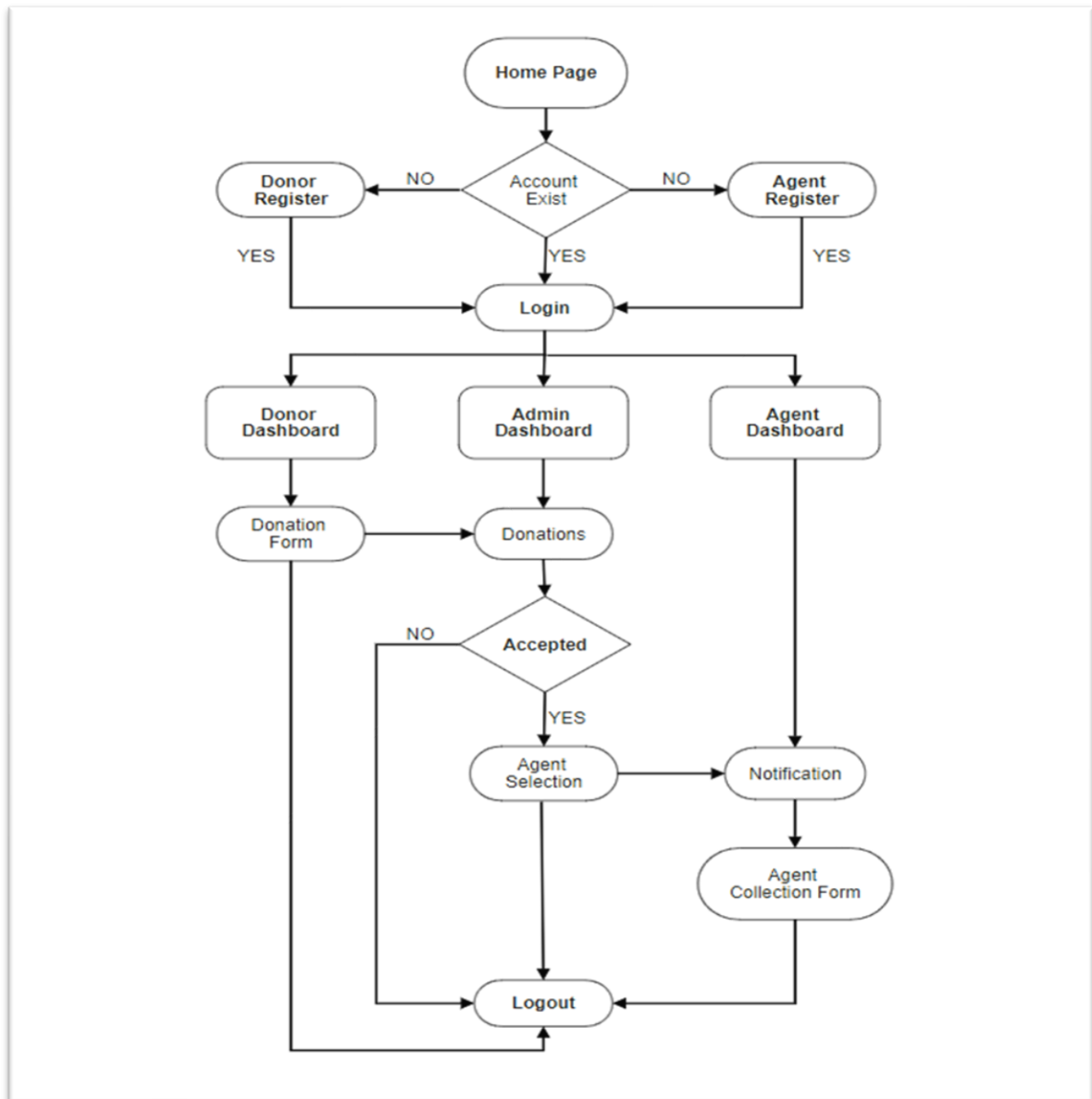
Tools and Technologies

Technology Stack for Hunger Help

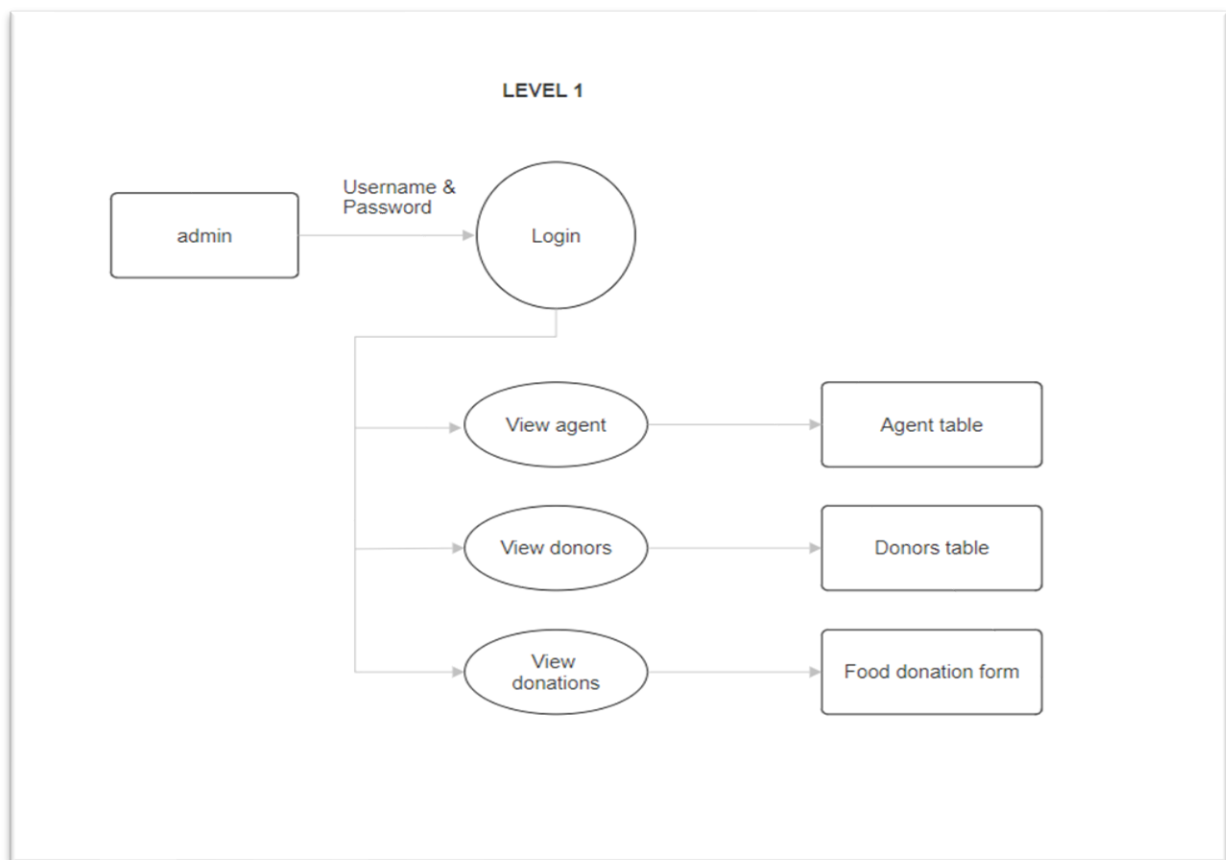
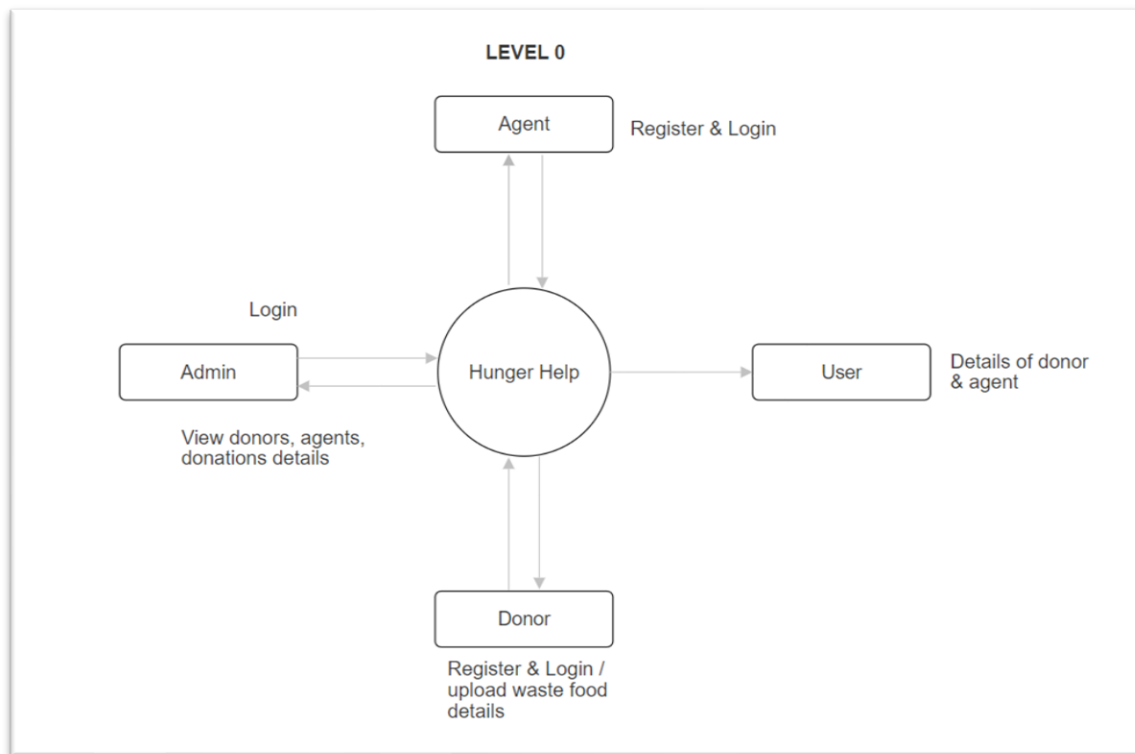
1. **Spring Boot:** Utilized to develop the backend of the application, providing a robust framework for building Java-based web applications with ease. It ensures smooth integration with various components and manages application configurations.
2. **Spring Data JPA:** Implemented for data access, allowing seamless interaction with the MySQL Aiven cloud database to store and retrieve critical data efficiently. It simplifies database operations and provides a high-level abstraction for persistence management.
3. **RESTful Web Services:** Facilitates communication between the frontend and backend components of the Hunger Help application. Adhering to the principles of Representational State Transfer (REST), these services provide a standardized, stateless approach for building web services, ensuring efficient data exchange.
4. **Spring Web:** Handles web requests and responses, manages controllers, and serves static resources to the frontend. It ensures seamless interaction between the user's browser and the server.
5. **MySQL Database:** Chosen as the relational database management system for storing user data, food resources, donation information, and other critical application data.
6. **JWT (JSON Web Tokens):** Implemented for secure user authentication and authorization. JWT ensures that only authenticated users can access certain features and functionalities within the Hunger Help application.
7. **CSS:** Utilized for structuring and styling the frontend components. CSS (with utility-first classes) enables rapid prototyping and customization of the user interface.
8. **Git:** Implemented as a version control system to track changes in the source code, enabling collaboration among developers and facilitating code management and deployment workflows.

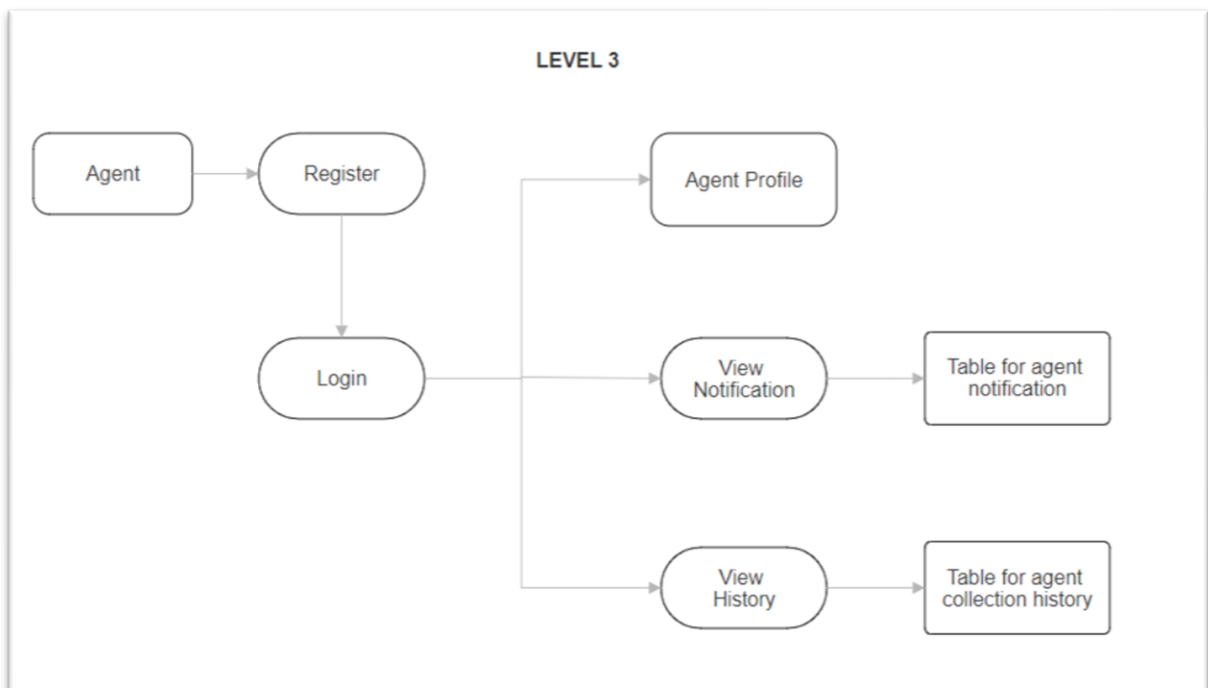
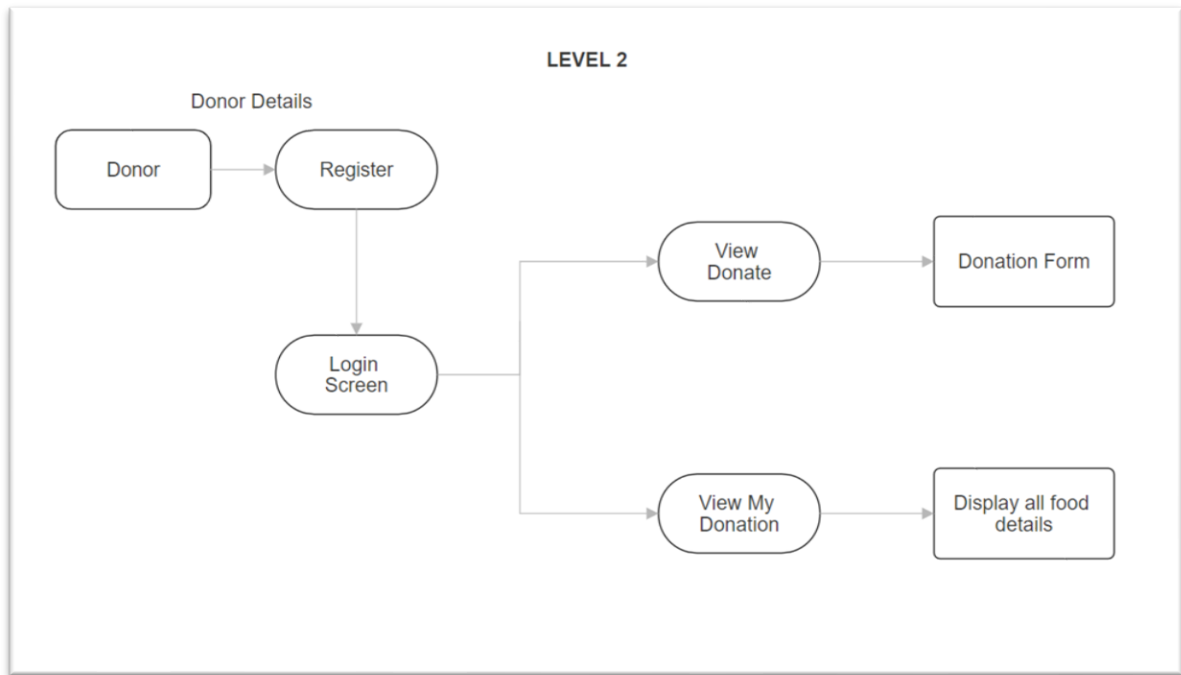
Project Diagrams

1) Flowchart

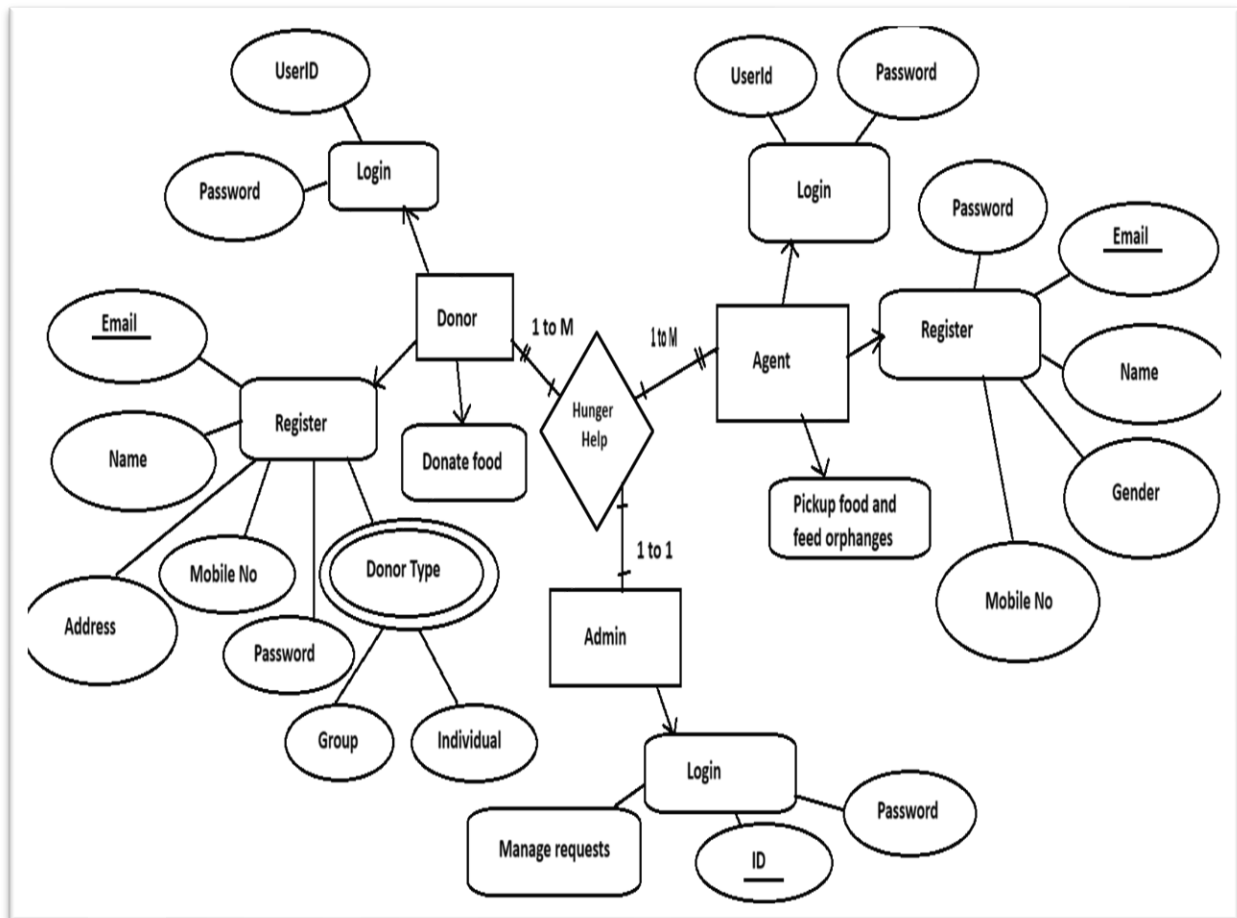


2) DFD (Data Flow Diagram)

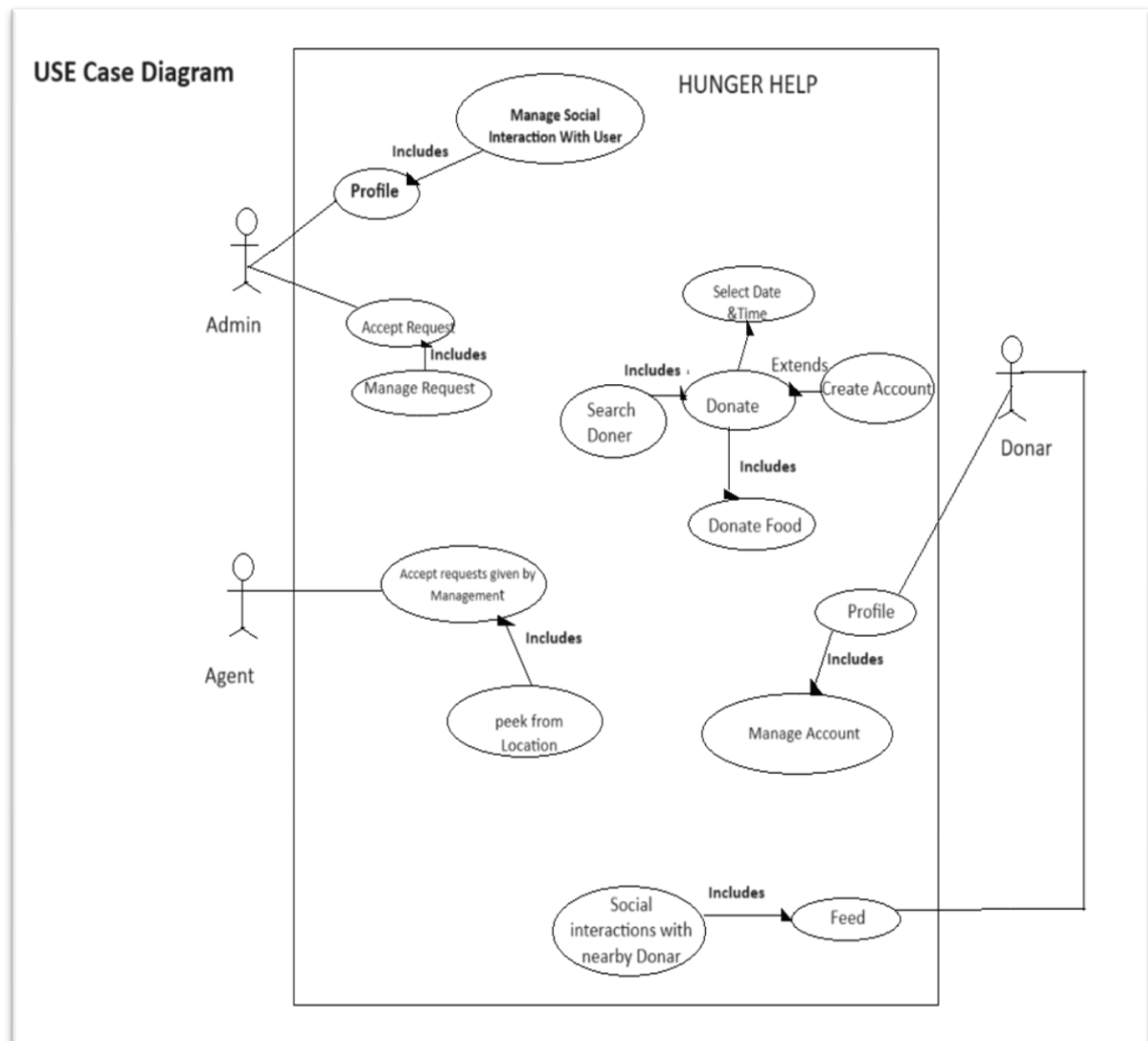




3) ER (Entity Relationship)



4) Use case



Project Database Diagram

```
mysql> show databases;
+-----+
| Database |
+-----+
| acts_2024 |
| assignment7 |
| blogs |
| foodwastage |
| healthcare |
| information_schema |
| myhiber |
| mysql |
| notesapp |
| notetaker |
| notetodo |
| performance_schema |
| practice1 |
| practice2 |
| practice3 |
| recipe |
| rutika |
| sys |
| vehicle |
+-----+
19 rows in set (0.10 sec)
```

Database created
successfully named as
“foodwastage”

```
mysql> use foodwastage;
Database changed
mysql> show tables;
+-----+
| Tables_in_foodwastage |
+-----+
| agent |
| donation |
| donor |
| food_collection |
| user |
+-----+
5 rows in set (0.03 sec)
```

Tables created
successfully

Agent table structure :

```
mysql> desc agent;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	YES		NULL	
age	int	NO		NULL	
email	varchar(255)	YES		NULL	
gender	varchar(255)	YES		NULL	
name	varchar(255)	YES		NULL	
phone	varchar(255)	YES		NULL	
pwd	varchar(255)	YES		NULL	

8 rows in set (0.02 sec)

Donation table structure :

```
mysql> desc donation;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	YES		NULL	
adminremarks	varchar(255)	YES		NULL	
agentremarks	varchar(255)	YES		NULL	
cookdate	date	YES		NULL	
cooktime	time	YES		NULL	
foodtype	varchar(255)	YES		NULL	
qty	varchar(255)	YES		NULL	
status	varchar(255)	YES		NULL	
agentid	int	YES	MUL	NULL	
donorid	int	YES	MUL	NULL	

11 rows in set (0.01 sec)

Donor table structure :

```
mysql> desc donor;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	YES		NULL	
email	varchar(255)	YES		NULL	
name	varchar(255)	YES		NULL	
phone	varchar(255)	YES		NULL	
pwd	varchar(255)	YES		NULL	
type	varchar(255)	YES		NULL	

7 rows in set (0.00 sec)

Food_collection table structure :

```
mysql> desc food_collection;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
address	varchar(255)	YES		NULL	
collectdate	date	YES		NULL	
collecttime	time	YES		NULL	
orphan	varchar(255)	YES		NULL	
agentid	int	YES	MUL	NULL	
donorid	int	YES	MUL	NULL	

7 rows in set (0.00 sec)

User table structure :

```
mysql> desc user;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| userid | varchar(255)  | NO   | PRI | NULL    |       |
| id     | int           | NO   |     | NULL    |       |
| pwd    | varchar(255)  | YES  |     | NULL    |       |
| role   | varchar(255)  | YES  |     | NULL    |       |
| uname  | varchar(255)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

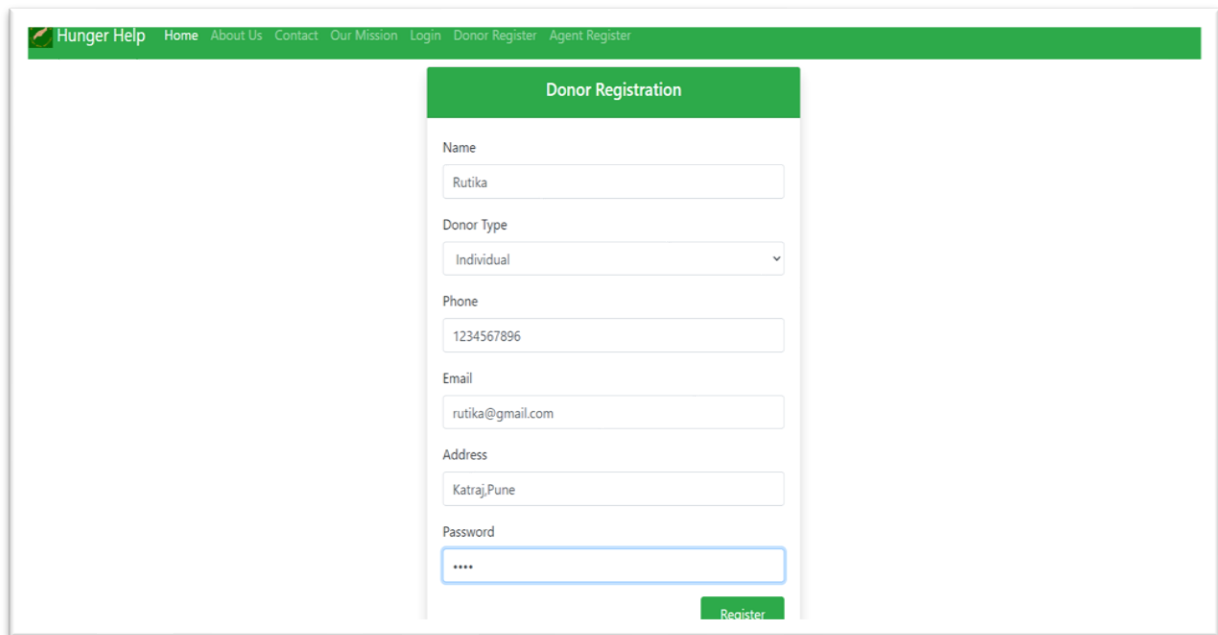
Results

Home Page :



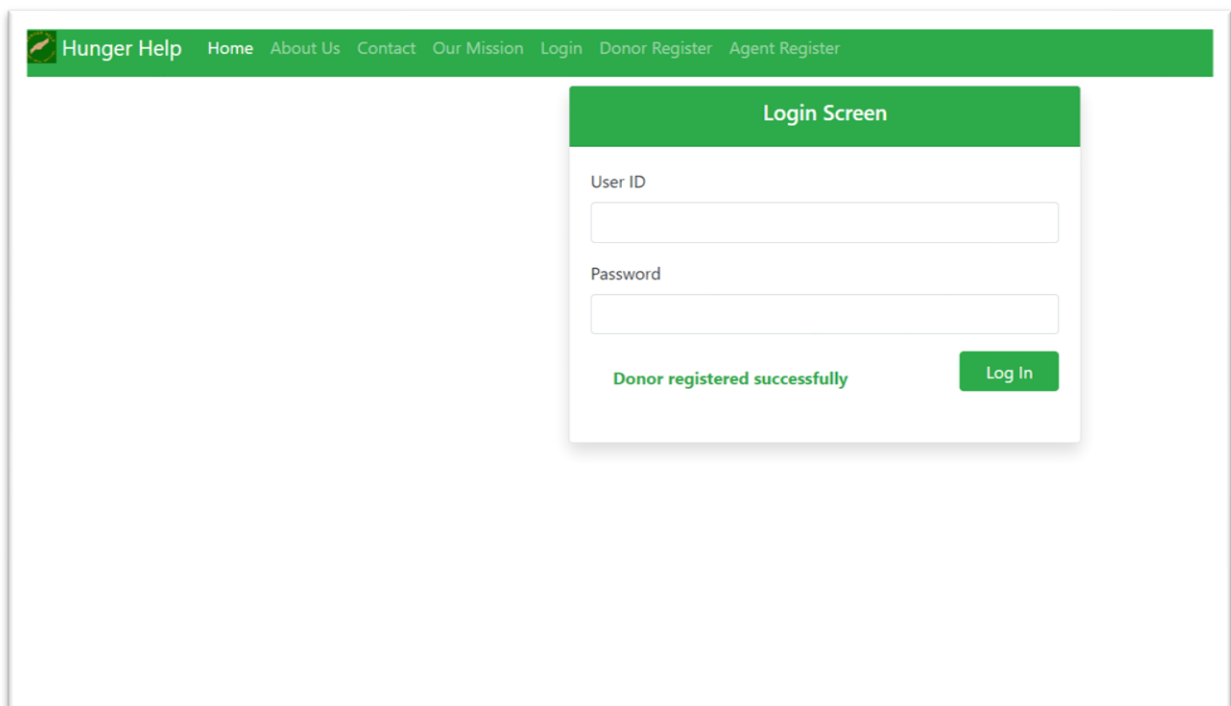
1) Donor related Functionalities :

Donor Registration page :




The screenshot shows the 'Donor Registration' page of the 'Hunger Help' website. The page has a green header with the logo and navigation links: Home, About Us, Contact, Our Mission, Login, Donor Register, and Agent Register. The main content area is white and contains a registration form with the following fields: Name (text input with 'Rutika'), Donor Type (dropdown menu with 'Individual' selected), Phone (text input with '1234567896'), Email (text input with 'rutika@gmail.com'), Address (text input with 'Katraj,Pune'), and Password (password input with four dots). A green 'Register' button is located at the bottom right of the form.

Donor Registered successfully :



The screenshot shows the 'Login Screen' of the 'Hunger Help' website. The page has a green header with the logo and navigation links: Home, About Us, Contact, Our Mission, Login, Donor Register, and Agent Register. The main content area is white and contains a login form with the following fields: User ID (text input) and Password (password input). A green 'Log In' button is located at the bottom right of the form. Below the password field, there is a green message that says 'Donor registered successfully'.

Donor Login Page :

 **Hunger Help** [Home](#) [About Us](#) [Contact](#) [Our Mission](#) [Login](#) [Donor Register](#) [Agent Register](#)

Login Screen

User ID


rutika@gmail.com

Password

....

Log In


After Donor Login :

 **Hunger Help** [Donate](#) [My Donations](#) [Hi !Rutika](#) [Logout](#)

Donor Profile

Name	Rutika
Donor Type	Individual
Email Id	rutika@gmail.com
Phone	1234567896
Address	Katraj,Pune

Donation Form :

 Hunger Help

[Donate](#) [My Donations](#) [Hi !Rutika](#) [Logout](#)

Donation Form

Food Type

Dal Rice

Quantity

20 plates

Date of Cooking

15-08-2024

Time of Cooking


12:30

Address to Collect

Katraj, pune

Donate Now

Donor Dashboard :

 Hunger Help

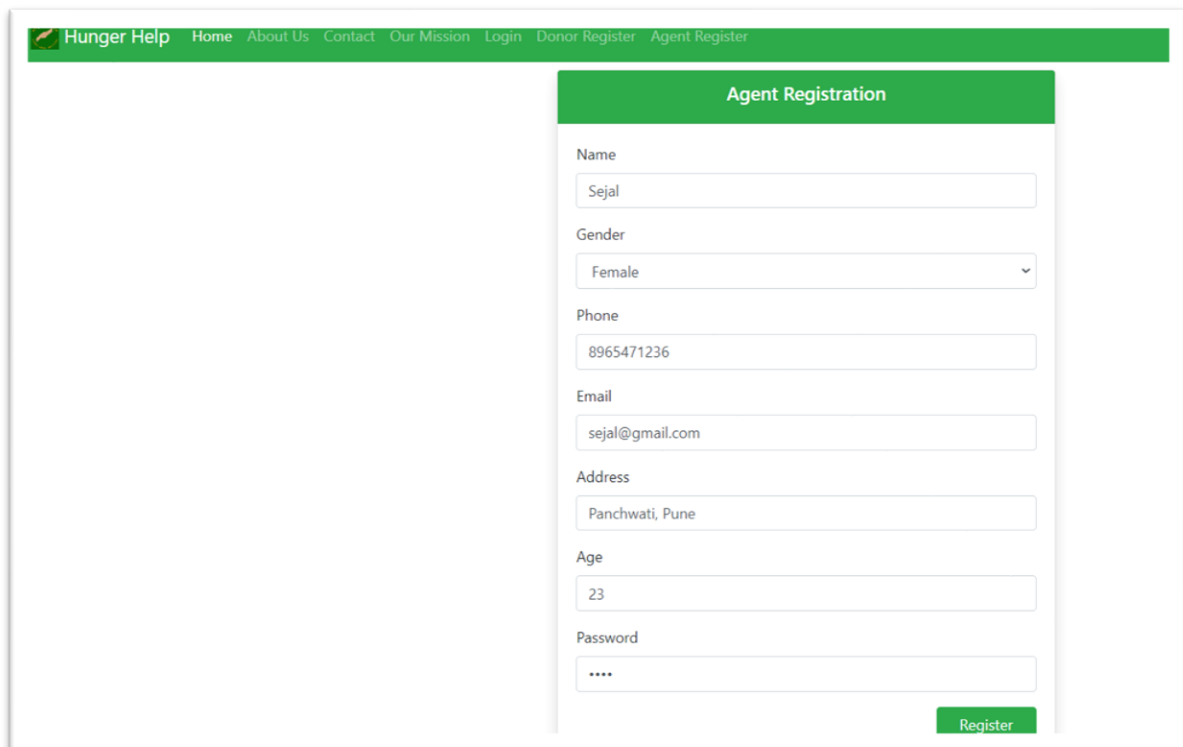
[Donate](#) [My Donations](#) [Hi !Rutika](#) [Logout](#)

My Donations

Id	Food Type	Cooking Date	Cooking Time	Quantity	Status
1	Dal Rice	2024-08-15	12:30	20 plates	Pending

2) Agent related Functionalities :

Agent Registration form :

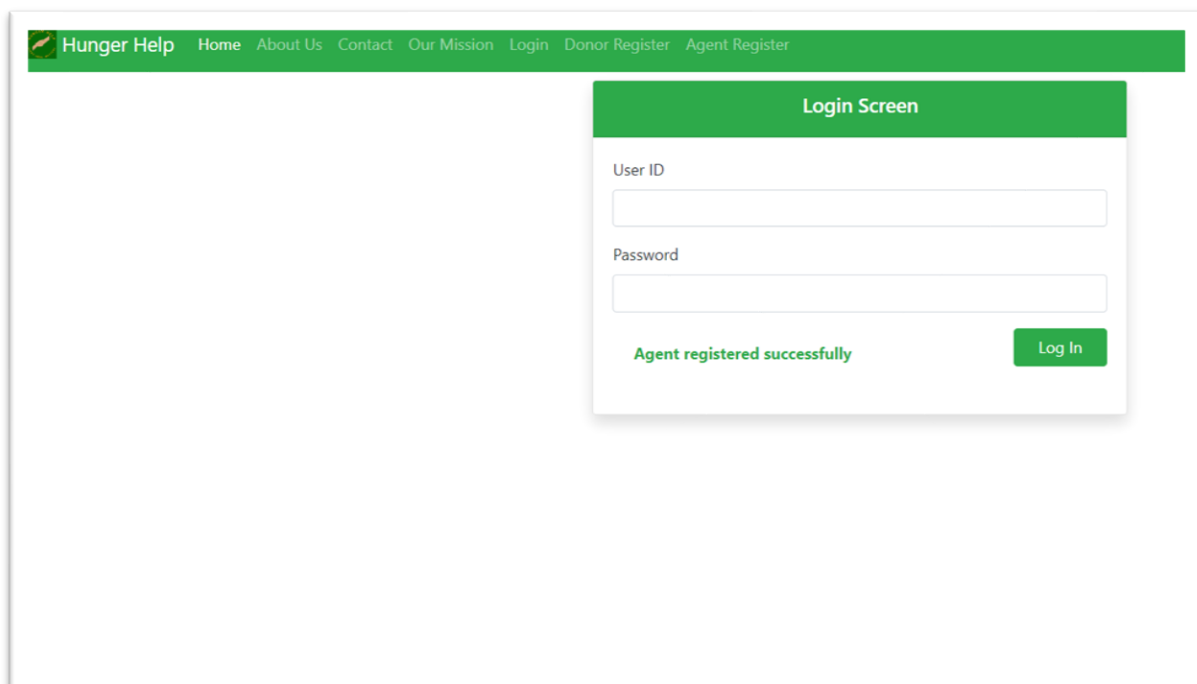


The screenshot shows the 'Agent Registration' form on the 'Hunger Help' website. The form is titled 'Agent Registration' and is located on the right side of the page. The navigation bar at the top includes links for Home, About Us, Contact, Our Mission, Login, Donor Register, and Agent Register. The form fields are as follows:

Field	Value
Name	Sejal
Gender	Female
Phone	8965471236
Email	sejal@gmail.com
Address	Panchwati, Pune
Age	23
Password

A green 'Register' button is located at the bottom right of the form.

Agent registered successfully :

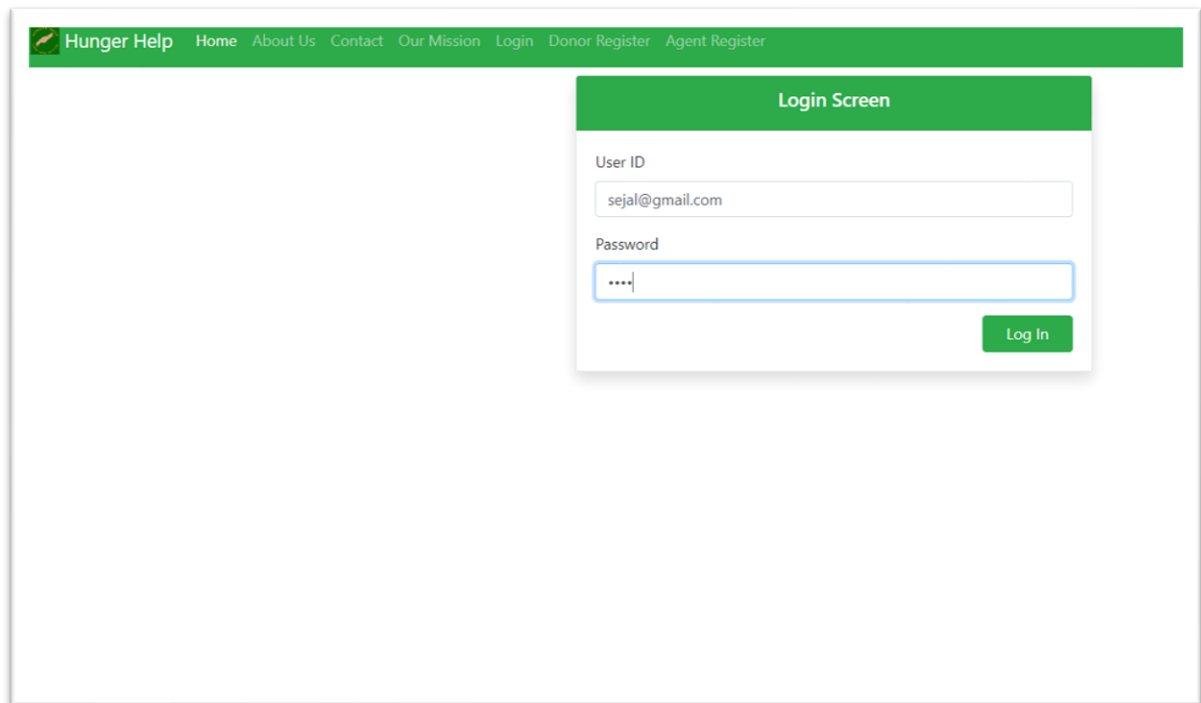


The screenshot shows the 'Login Screen' on the 'Hunger Help' website. The form is titled 'Login Screen' and is located on the right side of the page. The navigation bar at the top includes links for Hunger Help, Home, About Us, Contact, Our Mission, Login, Donor Register, and Agent Register. The form fields are as follows:

Field	Value
User ID	
Password	

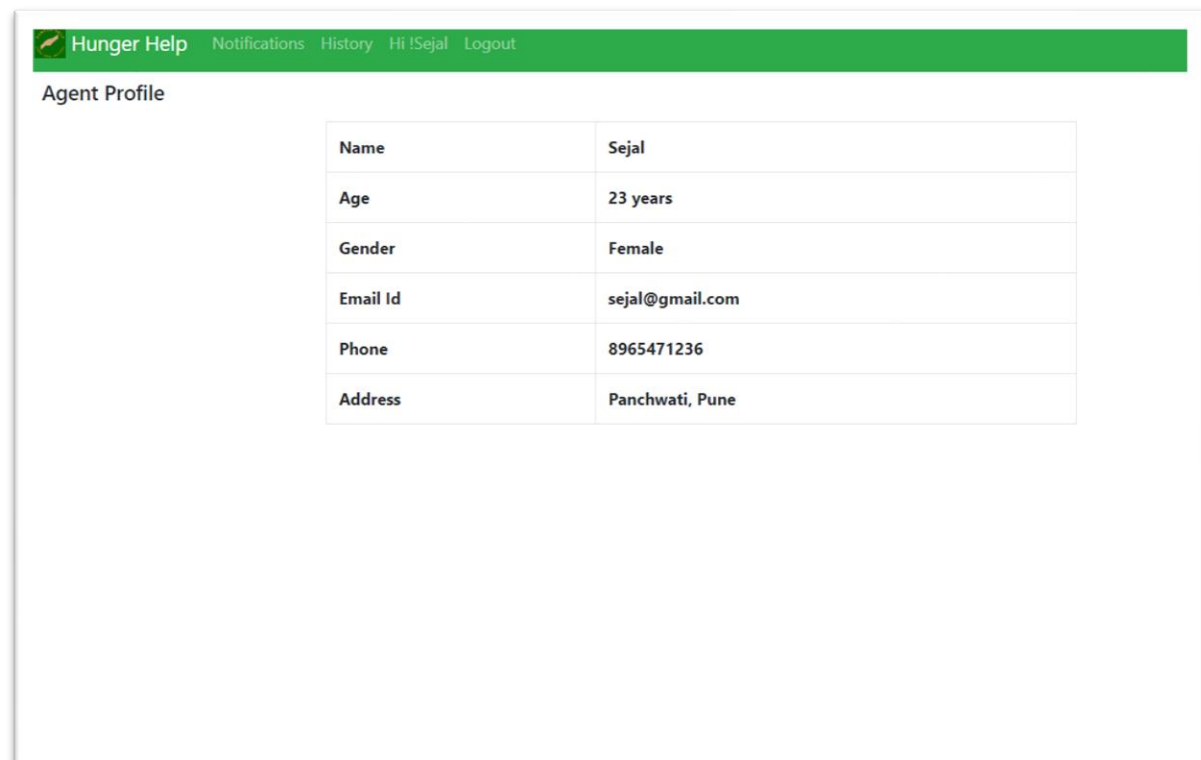
A green 'Log In' button is located at the bottom right of the form. A green message 'Agent registered successfully' is displayed below the form fields.

Agent Login Page :



The screenshot shows the 'Agent Login Page' of the 'Hunger Help' website. The top navigation bar is green with white text links: 'Hunger Help', 'Home', 'About Us', 'Contact', 'Our Mission', 'Login', 'Donor Register', and 'Agent Register'. A 'Login Screen' modal is centered on the page. It has a green header with the text 'Login Screen'. Below the header, there are two input fields: 'User ID' with the value 'sejal@gmail.com' and 'Password' with masked characters '....'. A green 'Log In' button is located at the bottom right of the modal.

After Agent login :

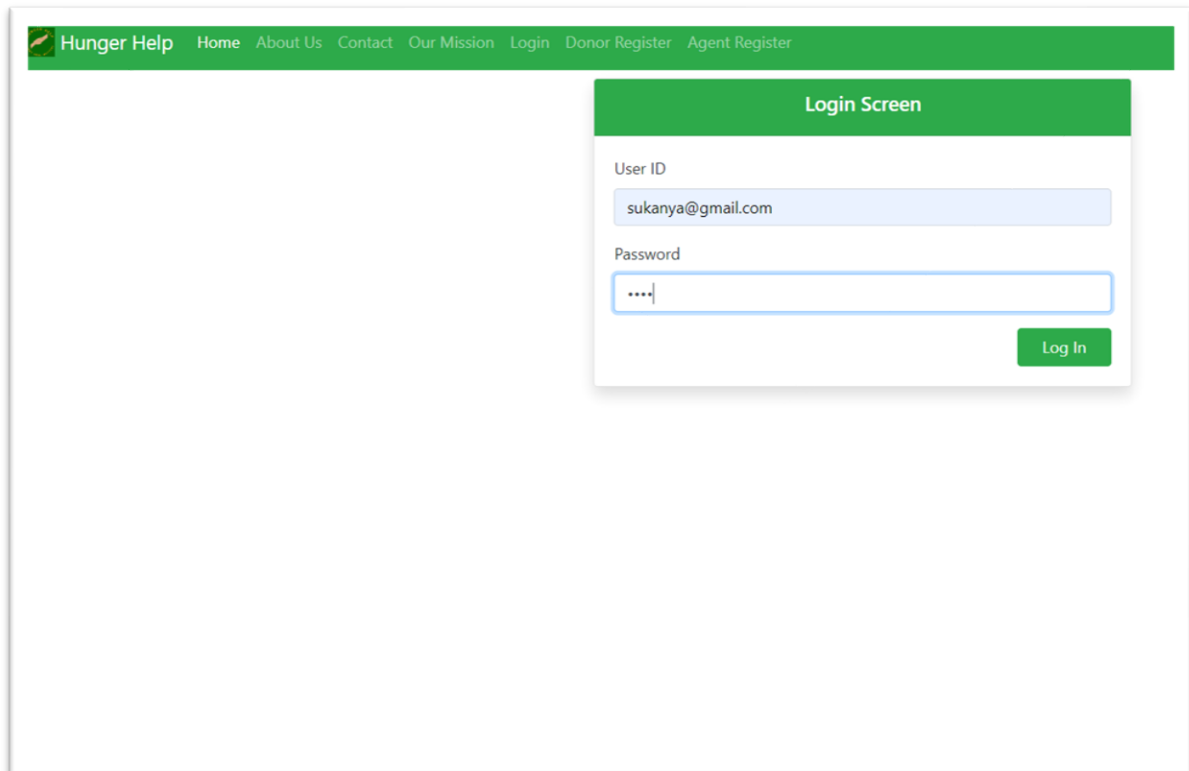


The screenshot shows the 'Agent Profile' page after a successful login. The top navigation bar is green with white text links: 'Hunger Help', 'Notifications', 'History', 'Hi !Sejal', and 'Logout'. Below the navigation bar, the text 'Agent Profile' is displayed. A table shows the user's profile information:

Name	Sejal
Age	23 years
Gender	Female
Email Id	sejal@gmail.com
Phone	8965471236
Address	Panchwati, Pune

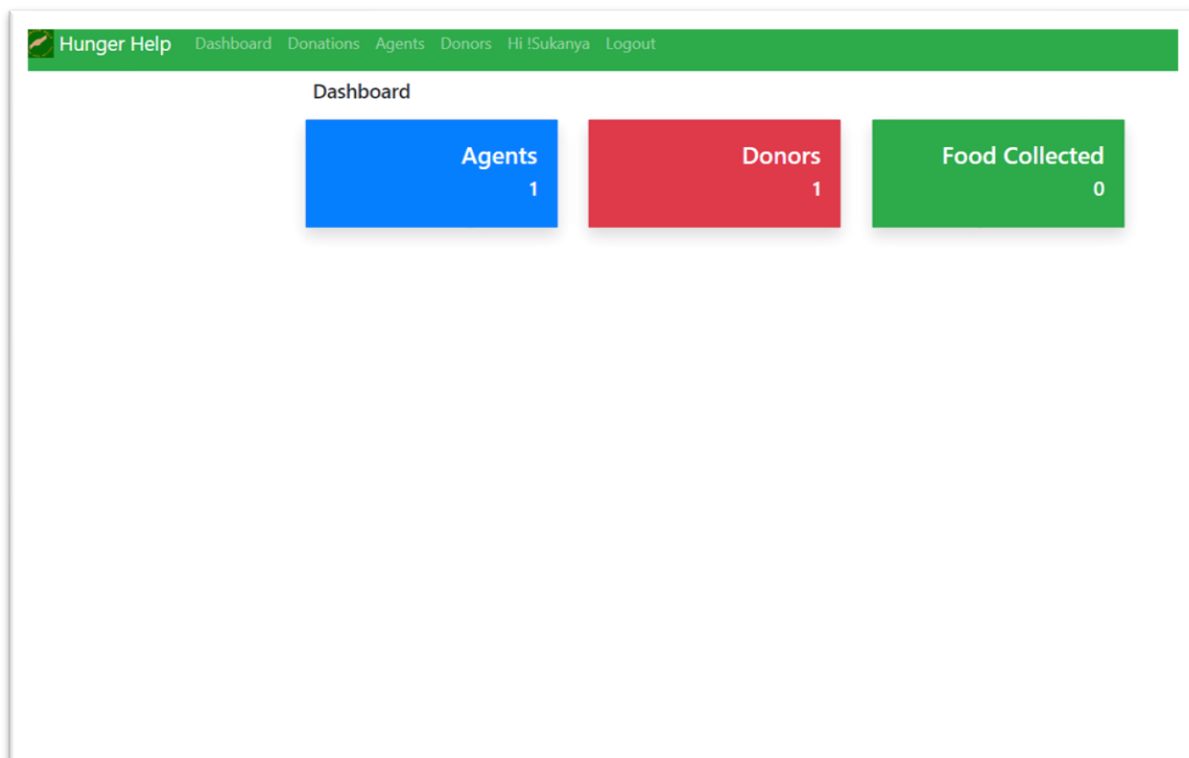
3) Admin related Functionalities :

Admin login Page :



The screenshot shows the Admin Login Page. At the top, there is a green navigation bar with the logo and the text "Hunger Help" followed by links: Home, About Us, Contact, Our Mission, Login, Donor Register, and Agent Register. The main content area is white. On the right side, there is a "Login Screen" box. Inside this box, there are two input fields: "User ID" with the value "sukanya@gmail.com" and "Password" with masked characters "....". Below the password field is a green "Log In" button.

After Admin login :




The screenshot shows the Admin Dashboard. At the top, there is a green navigation bar with the logo and the text "Hunger Help" followed by links: Dashboard, Donations, Agents, Donors, Hi! Sukanya, and Logout. The main content area is white. Below the navigation bar, there is a "Dashboard" section. This section contains three colored boxes: a blue box labeled "Agents" with the value "1", a red box labeled "Donors" with the value "1", and a green box labeled "Food Collected" with the value "0".

Admin Dashboard :

<div> Hunger Help</div> <div>Dashboard Donations Agents Donors Hi !Sukanya Logout</div>							
Donations							
Id	Donor Name	Donor Phone	Food Type	Cooking Date Time	Quantity	Status	Action
1	Rutika	1234567896	Dal Rice	2024-08-15 12:30	20 plates	Pending	Details

Donation approval :

 Hunger Help

[Dashboard](#) [Donations](#) [Agents](#) [Donors](#) [Hi !Sukanya](#) [Logout](#)

Process Donation

Donor Name

Rutika

Food Type

Dal Rice

Quantity

20 plates

Cooking Date and Time

2024-08-15 12:30


Status

Pending

Reject

Accept

Agent selection :

Hunger Help

DashboardDonationsAgentsDonorsHi !SukanyaLogout

Process Donation

Donor Name

Rutika

Food Type

Dal Rice

Quantity

20 plates

Cooking Date and Time

2024-08-15 12:30

Status

Accepted

Donation status updated successfully

Agent Process

Select Agent


Sejal - Panchwati, Pune

Remarks


Contact Donor when agent reached at pickup point

Submit

Admin dashboard after managed donation :

<div>  Hunger Help </div> <div> Dashboard Donations Agents Donors Hi !Sukanya Logout </div>							
Donations							
Id	Donor Name	Donor Phone	Food Type	Cooking Date Time	Quantity	Status	Action
1	Rutika	1234567896	Dal Rice	2024-08-15 12:30	20 plates	In Process Admin Remarks : Contact Donor when agent reached at pickup point	<div>Details</div>

Agent notification dashboard after admin approval :


 Hunger Help

[Notifications](#) [History](#) [Hi !Sejal](#) [Logout](#)

Agent Notifications

Id	Donor Name	Donor Phone	Food Type	Cooking Date Time	Quantity	Status	Action
1	Rutika	1234567896	Dal Rice	2024-08-15 12:30	20 plates	In Process Admin Remarks : Contact Donor when agent reached at pickup point	<button>Collect</button>

Agent Collection Form :

 Hunger Help

[Notifications](#) [History](#) [Hi !Sejal](#) [Logout](#)

Agent Collection Form

Donor Name

Rutika

Date of Collection

15-08-2024

Time of Collection

21:00

Orphanage Name


Vidya Vikas

Orphanage Address


Vishrantwadi, Pune

Submit

Agent Collection History :

<div><div>Hunger Help</div><div>Notifications History Hi ISejal Logout</div></div>					
Agent Collection History					
Id	Donor Name	Collect Date	Collect Time	Orphanage Name	Address
1	Rutika	2024-08-15	21:00	Vidya Vikas	Vishrantwadi, Pune

Admin dashboard after successfully collecting food by agent :

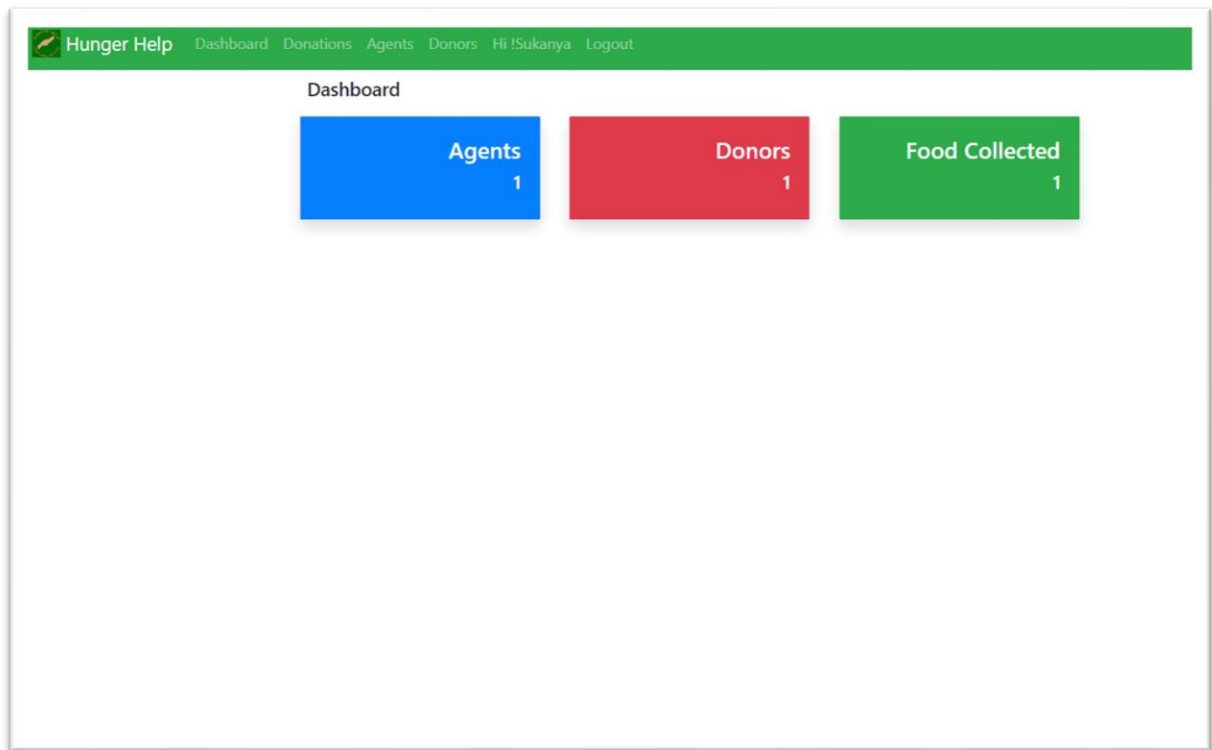
Hunger Help

[Dashboard](#)[Donations](#)[Agents](#)[Donors](#)[Hi ISukanya](#)[Logout](#)

Donations

Id	Donor Name	Donor Phone	Food Type	Cooking Date Time	Quantity	Status	Action
1	Rutika	1234567896	Dal Rice	2024-08-15 12:30	20 plates	Collected	Details

Admin dashboard after collecting food :



Future Scope

From the research, we understood that people are trying to move more towards donating food via food waste management web application, as it saves time from searching online for different websites and collecting Orphanages contact information and is much faster. We would also like to expand our project by adding more platforms like contacting delivery companies for collection of food, etc. Another feature that sounds demanding is to show the live location of delivery of food. To simplify, our system shall offer a faster booking process and faster response to user demand which will save time of the user.

Conclusion

Food waste remains a significant issue due to the global food system's focus on profit and control, which fosters overproduction and waste. The "Hunger Help" web application addresses this by connecting donors with NGOs to collect and distribute excess food to those in need. It features a responsive interface, efficient database integration and aiming to improve food recovery and support effective redistribution. To tackle food waste comprehensively, systemic changes are needed to create more sustainable and equitable food systems.

References

1. Spring Boot :

- [Spring Boot Official Website] (<https://spring.io/projects/spring-boot>)

2. Spring Data JPA :

- [Spring Data JPA Official Website] (<https://spring.io/projects/spring-data-jpa>)

3. RESTful Web Services :

- [RESTful API Guide] (<https://restfulapi.net/>)

4. MySQL :

- [MySQL Official Website] (<https://www.mysql.com/>)

5. Spring Web :

- [Spring Web Official Website] (<https://spring.io/projects/spring-web>)