LAGNI – A Food Waste Donation App

1. Introduction

1.1 Purpose of the System

"Lagni" aims to address the issue of food waste by connecting users willing to donate surplus food with individual people or NGOs who can facilitate the distribution to different communities, including beggars and people in need. This application is designed to promote social responsibility, reduce food wastage, and contribute to the well-being of less privileged individuals. By leveraging technology, "LAGNI" provides a seamless platform for food donors and distributers to collaborate in the noble cause of redistributing surplus food.

1.2 Scope of the System

"Lagni" is a comprehensive food waste donation application that facilitates the efficient transfer of surplus food from donors to communities in need. The system's primary goal is to bridge the gap between surplus food and those who require it. It includes features for food donation scheduling, rider coordination. "LAGNI" aligns with the principles of social responsibility and strives to make a positive impact on communities facing food insecurity.

1.3 Existing System

In existing system if anyone have extra food because of any function or in their home it will be become waste because instantly there is no way to share with anyone if they are having lots of food . even if they want to give that extra food to any orphanage or poor people they don’t have time or don’t have an idea about that So that we have create a application for sponsor that extra food to poor people or nearby orphanage.

2. General Description of the System

2.1 Overall Description

“Lagni" is a user-friendly mobile application that connects food donors with NGOs for the purpose of redistributing surplus food to communities in need. The application provides a seamless and secure platform for users to schedule food donations, and contribute to reducing food waste. By fostering collaboration between donors and riders, "LAGNI" transforms surplus food into a valuable resource for those facing food insecurity.

2.2 Feasibility Study

"Lagni" demonstrates strong feasibility across technical, operational, and economic aspects. Its utilization of mobile app development technologies, coupled with user-friendly features,

showcases its technical viability. The operational benefits include efficient food redistribution, real-time tracking, and enhanced user experiences. Economically, the long-term benefits of reducing food waste and contributing to social welfare outweigh the initial development and maintenance costs.

2.2.1 Technical Feasibility

"Lagni" demonstrates a high level of technical feasibility by utilizing well-established mobile app development technologies. The implementation of features such as food donation scheduling, rider coordination, and real-time tracking is supported by widely-used frameworks like React Native for cross-platform development. Additionally, integration with location-based services for tracking and mapping is technically feasible.

2.2.2 Operational Feasibility

From an operational standpoint, "Lagni" streamlines the process of food donation and distribution. The application offers an intuitive user interface for both donors and riders, facilitating easy scheduling, coordination, and tracking. Adequate training and support may be required initially to familiarize users with the system, and ongoing maintenance will be necessary to ensure a seamless experience.

2.2.3 Economic Feasibility

"Economic Feasibility" examines the cost-effectiveness of the project in comparison to the potential benefits it offers. While there will be upfront costs associated with development, design, testing, and initial setup, the long-term benefits of reducing food waste and contributing to social welfare outweigh the initial investment. The application's economic feasibility is enhanced by its focus on addressing a real-world problem (food waste) and providing tangible value to users.

3. Functional Requirements

3.1 Module Description

3.1.1 Donor Module

1. **Registration and Authentication:**
   - Donors can create accounts or log in to access the application.
   - Ensure secure authentication methods for user logins.

2. **Food Donation Scheduling:**
   - Donors can schedule food donations, specifying the type and quantity of surplus food.
   - Provide an intuitive calendar-based interface for easy scheduling.

3. **Donation History:**
   - Maintain a record of past donations for donors to track their contribution.

3.1.2 Rider Module

1. **Registration and Authentication:**
   - Riders can create accounts or log in to access the application.
   - Ensure secure authentication methods for rider logins.

2. **Delivery Confirmation:**
   - Allow riders to confirm successful food deliveries.

3.2 Functions of Various Users of the System

There are mainly three types of users in the system: donor, rider, and admin.

1. **Donor:**
   - Create accounts or log in to access the application.
   - Schedule food donations, specifying type and quantity.
   - Track donation history.

2. **Rider:**
   - Create accounts or log in to access the application.
   - Use real-time tracking to navigate and confirm successful deliveries.
   - Provide feedback on the delivery process.

4. Non-Functional Requirements

4.1 Security

1. **User Data Protection:**
   - Implement robust encryption mechanisms to safeguard user data.
   - Use secure authentication methods for user logins and transactions.

2. **Access Control:**
   - Admins should have the authority to manage user accounts and resolve disputes.

4.2 Availability

1. **Server Stability:**
   - Maintain a stable server environment to ensure uninterrupted access.
   - Implement load balancing to distribute traffic efficiently during peak usage.

4.3 Maintainability

1. **Modular Design:**
   - Design the application with a modular structure for easy updates and maintenance.
   - Provide regular updates with bug fixes and new features.

5. Interface Requirements

5.1 GUI

1. **Donor Interface:**
   - Provide an intuitive interface for donors to schedule donations and track history.

2. **Rider Interface:**
   - Create a user-friendly interface for riders.

5.2 Hardware Interface

1. **Smartphones:**
   - Compatible with Android smartphones.

5.3 Software Interface

1. **Operating System:**
   - Compatible with Android 6.0 (Marshmallow) or later.

2. **Front-end:**
   - Framework: Figma

3. **Back-end:**
   - Android Development (JAVA)
   - Database Management: Firebase

6. Data Dictionary:

6.1 Table Name: tbl_user

Description: To store information about registered users of the "LAGNI" application.
Primary Key: user_id

Sr. No.	Attributes	Data Type	Constraints	Description
1	user_id	int(11)	Primary key	Unique ID for each user
2	username	varchar(50)	Not null, Unique	Username for user login
3	email	varchar(100)	Not null, Unique	Email address of the user
4	password	varchar(100)	Not null	Password for user login
5	full_name	varchar(100)	Not null	Full name of the user
6	date_joined	datetime	Not null	Date and time of user registration
7	profile_image	varchar(255)	Default 'default.png'	Profile image of the user

6.2 Table Name : tbl_donor

Description: To store information about registered donor of the "LAGNI" application.
Primary Key: donor_id

Sr. No.	Attributes	Data Type	Constraints	Description
1	donor_id	int(11)	Primary key	Unique ID for each donor
2	username	varchar(50)	Not null, Unique	Username for donor login
3	email	varchar(100)	Not null, Unique	Email address of the donor
4	password	varchar(100)	Not null	Password for donor login
5	full_name	varchar(100)	Not null	Full name of the donor
6	date_joined	datetime	Not null	Date and time of donor registration
7	profile_image	varchar(255)	Default 'default.png'	Profile image of the donor
8	location	varchar(255)	Not null	Location of the donor (address or coordinates)

6.3 Table Name : tbl_distributer

Description: To store information about registered distributer of the "LAGNI" application.

Primary Key: distributer_id

Sr. No.	Attributes	Data Type	Constraints	Description
1	distributer_id	int(11)	Primary Key	Unique ID for each rider
2	username	varchar(255)	Foreign key	Name of the rider
3	password	password	Not null	Password for the rider account
4	email	email	Not Null	Email of the rider
5	full_name	vachar(255)	Not Null	Full name of the rider
6	date_joined	date	Not Null	Date rider joined
7	profile_image	varchar(255)	Not Null	Profile picture of the rider
8	location	varchar(255)	Not null	Location of the donor (address or coordinates)

6.4 Table Name : tbl_donation

Description: To store information about registered distributer of the "LAGNI" application.

Primary Key: donation_id

Sr. No.	Attributes	Data Type	Constraints	Description
1	donation_id	int(11)	Primary key	Unique ID for each donation
2	donor_id	int(11)	Foreign key	ID of the donor who made the donation
3	distributer_id	int(11)	Foreign key	ID of the dristributer who dristributed the food
4	donation_date	datetime	Not null	Date and time of the donation
5	servings	int(11)	Not null	Number of servings donated
6	status	varchar(20)	Not null	Status of the donation (e.g., pending, delivered)
7	profile_image	varchar(255)	Not Null	Profile picture of the rider
8	location	varchar(255)	Not null	Location of the donor (address or coordinates)