



# Smart Food Donation using KMeans Clustering

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## Learning Objectives

- Understand and develop a web-based platform to manage food donation efficiently.
- Reduce food waste by connecting donors with NGOs or individuals in need.
- Promote social responsibility through tech-based solutions.



## Tools and Technology used

- Python, Streamlit, scikit-learn
- Pandas, NumPy
- KMeans clustering

## Methodology

- Requirement gathering from stakeholders (donors, receivers, NGOs).
- Design of user-friendly web interface.
- Development of donor and receiver modules with login functionality.
- Integration with a centralized database for food request and donation tracking.

## Problem Statement:

- A significant amount of edible food is wasted daily, especially from households and restaurants.
- Many people continue to suffer from hunger and food insecurity at the same time.
- There is no efficient digital platform to connect food donors with needy individuals or NGOs.
- Lack of awareness, coordination, and communication hinders timely food donation and distribution.

## Solution:

- Developed a centralized web-based platform to connect food donors with receivers (NGOs or individuals).
- Implemented user modules for donors and receivers with secure login and request features.
- Enabled real-time food donation tracking and status updates for transparency.
- Designed a simple and responsive interface to ensure ease of use and wider accessibility.
- Integrated admin panel to manage users, monitor donations, and handle approvals.

## Screenshot of Output:

### Smart Food Donation - Nagpur

Help reduce food waste and fight hunger by donating your excess food. We'll route it to the most suitable center.

#### Enter Your Details

Your Address  
kamptee

Roti (qty)  
25 - +

Rice (qty)  
25 - +

Daal/Curry (qty)  
25 - +

Others (qty)  
5 - +

**Submit Donation**

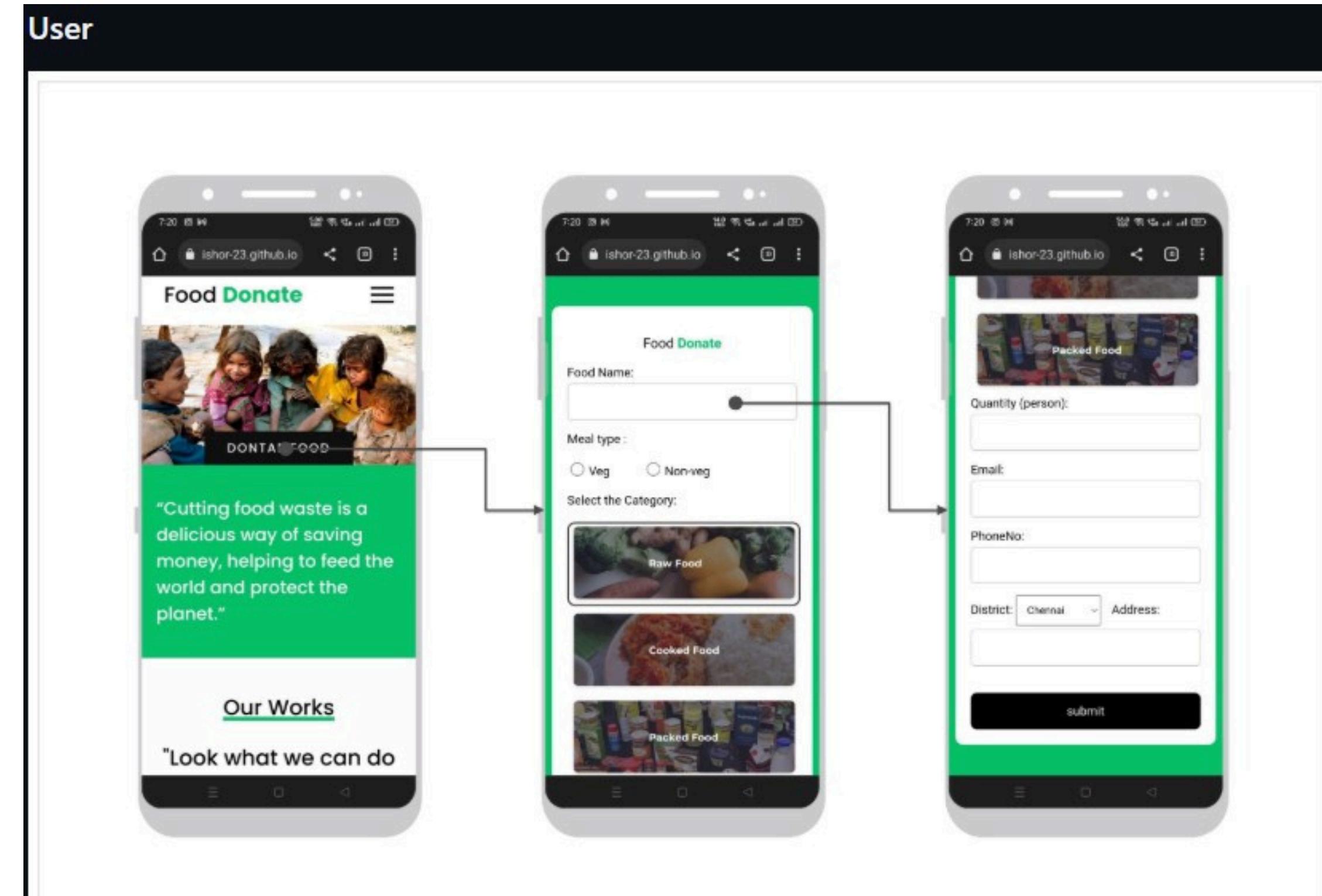
 Your donation has been accepted!

Address: kamptee Assigned Center: Center\_4

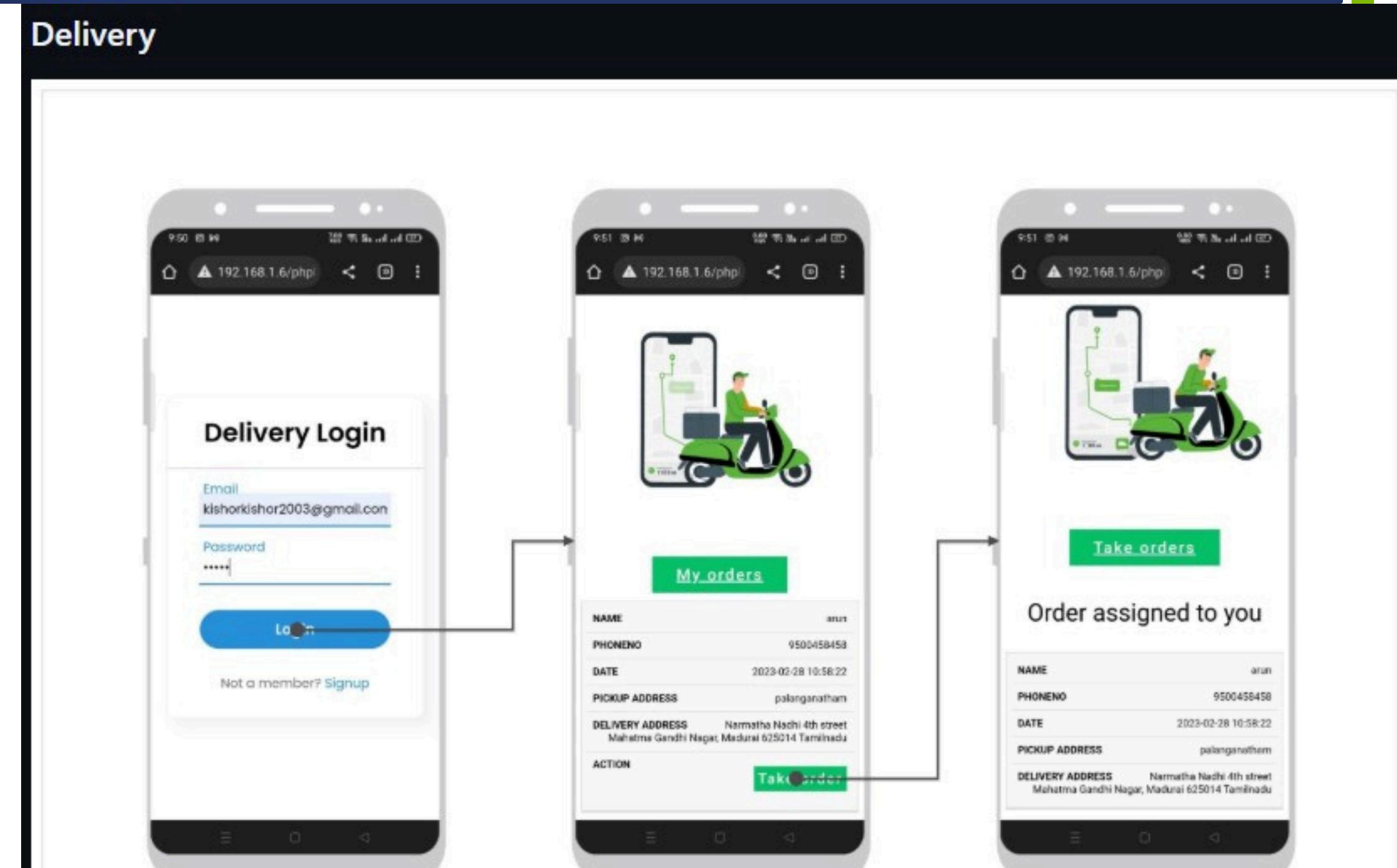
#### Updated Center Capacity:

```
{ "roti": 10, "rice": 0, "daal": 0, "others": 0 }
```

## Future Scope:

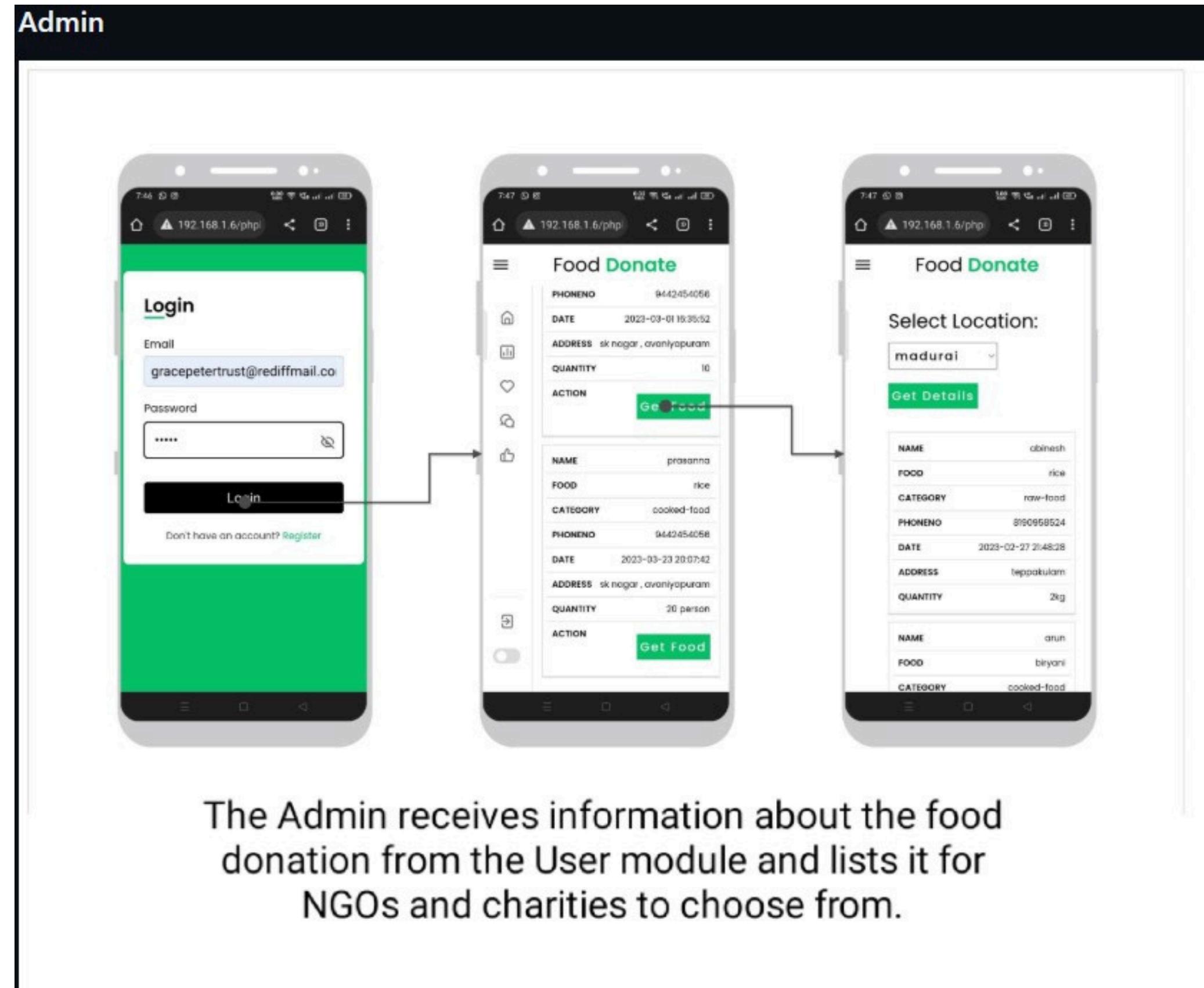


## Future Scope:



Delivery person Login shows the pickup and drop location of food donation

## Future Scope:



## Conclusion:

- The Food Donation System effectively bridges the gap between food donors and recipients.
- It helps minimize food wastage and supports those struggling with hunger.
- A user-friendly web platform encourages more people and organizations to participate.
- Real-time tracking ensures transparency and efficient food distribution.
- The project promotes social responsibility and a sustainable approach to food management.