Feed Friend: Fostering Community Involvement in Food Assistance

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Abstract:- According to the Food and Agriculture Organization (FAO) of the United Nations, approximately one-third of all food produced for human consumption worldwide is wasted annually. Food wastage occurs at various stages of the supply chain, including production, processing, distribution, and consumption. FeedFriend is an innovative website which was designed to combat food-wastage by fostering a vibrant community of donors and recipients. Donor Registration Individuals or Businesses can sign up as Donors on FeedFriend, providing details about the surplus food they have available for donation. This includes restaurants with excess inventory, grocery stores with perishable items nearing expiration, or individuals with leftover food from events or meals. Food Listings Donors can create listings within the website, specifying the type and quantity of food they wish to donate, include relevant details such as expiration dates etc. In Feed Friend, Users can filter the Donation requests based on their location. This type of service is used to match donors with nearby recipients in need. Recipients may include food banks, shelters, community centers, or individuals facing food insecurity. Feed Friend facilitates communication between donors and recipients, coordinates pickup or delivery logistics directly by providing donor's contact details. So that it enables a better communication between Donors and Receivers.

I. INTRODUCTION

➢ *Overview*

FeedFriend is a website that helps stop food from being wasted. People or businesses with extra food can use the web application to give it to others who need it. The web application matches donors with nearby places or people in need, like food banks or shelters. It sends alerts when there's surplus food available nearby. Users can talk through the website to arrange pick-up or delivery by using the donors contact details provided in the website. Overall, FeedFriend connects people who have food to spare with those who could use it, reducing waste and helping others.

➢ *About the Project*

FeedFriend is a project aimed at reducing food wastage and addressing food insecurity by creating a platform that connects donors with surplus food to recipients in need. The project involves developing a web application with features such as donor and receiver registration, food listings, recipient matching, filtration of food donation requests based on type of food like veg or non-veg and based on their nearest location. The goal is to create a vibrant community of donors and recipients, facilitating the redistribution of surplus food to minimize waste and ensure it reaches those who can benefit from it the most.

➢ *Purpose:*

The purpose of FeedFriend is to combat food wastage and address food insecurity by creating a platform that efficiently redistributes surplus food from donors to recipients in need. By connecting individuals and businesses with excess food to organizations and individuals facing food insecurity, FeedFriend aims to minimize waste at various stages of the supply chain while ensuring that edible food reaches those who can benefit from it. Through technology and community engagement, FeedFriend seeks to make a positive impact on both environmental sustainability and social welfare.

➢ *Scope:*

The scope of FeedFriend is to make a website that helps people share extra food with those who need it. It includes creating features like signing up as a donor or receiver, listing surplus food, matching donors with nearby recipients. The goal is to build a strong community that reduces food waste and helps others, with plans to expand the web app's reach in the future.

II. LITERATURE REVIEW

➢ *Griffin, M. K., Sobal, J., & Lyson, T. A. (2009). "An Analysis of A Community Food Waste Stream" .Agriculture and Human Values.*

The model evaluate and compare food waste within a community's food system. Their approach likely involved analyzing waste generation, management practices, and disposal methods at various stages of the food supply chain.

By quantifying and comparing food waste across different sectors, such as production, distribution, consumption, and disposal, the model likely aimed to identify key areas for intervention to reduce waste. Such efforts contribute to promoting sustainability and food security by optimizing resource utilization and minimizing environmental impact.

> *Schneider, F. (2012). " The Evolution of Food Donation With Respect to Waste Prevention. Waste Management (New York, N.Y.)".*

Schneider (2012) explores the evolution of food donation practices in relation to waste prevention, particularly within the context of waste management. The article likely discusses how food donation programs have evolved over time as a strategy to address food waste while also fulfilling societal needs. By examining the historical development and current status of food donation initiatives, Schneider likely highlights the role of such programs in mitigating food waste at various stages of the supply chain. This exploration likely includes discussions on challenges, best practices, and potential future directions for food donation efforts aimed at waste prevention.

> *Davis, L. B., Jiang, S., Morgan, S. D., Nuamah, I. A., & Terry, J. R. (2016). "Analysis and Prediction of Food Donation Behaviour for a Domestic Hunger Relief Organization". International Journal of Production Economics.*

The paper "Analysis and Prediction of Food Donation Behavior for a Domestic Hunger Relief Organization" explores why people donate food to help the hungry and tries to predict when they'll donate next. By studying factors like personal beliefs and economic status, the authors aim to understand what motivates food donation. Using methods like surveys and data analysis, they identify patterns in donation behavior. The goal is to create models that can forecast when people are likely to donate food in the future. This research helps hunger relief organizations plan better and ensure they have enough food to help everyone in need. Overall, the paper contributes valuable insights into understanding and predicting food donation behavior, aiding efforts to combat hunger effectively.

> *Lee, D., & Tongarlak, M. (2017)"Converting Retail Food Waste Into By-product. European Journal of Operational Research".*

The model likely discuss the conversion of retail food waste into useful by-products in their paper published in the European Journal of Operational Research. The focus of their work is likely on
exploring innovative approaches and operational strategies for repurposing or utilizing food waste generated within the retail sector. By examining methods such as recycling, composting, or conversion into energy or other products, the authors likely aim to provide insights into how retail food waste can be effectively managed to reduce its environmental impact and maximize its value. This research likely contributes to the broader goal of
sustainable waste management practices in the retail industry.

> *Chen, C., & Chen, R. J. C. (2018). "Using Two Government Food Waste Recognition Programs to Understand Current Reducing Food Loss and Waste Activities in the U.S. Sustainability".*

The paper "Using Two Government Food Waste Recognition Programs to Understand Current Reducing Food Loss and Waste Activities in the U.S." by Chen, C., & Chen, R. J. C. (2018) delves into how two government programs in the United States help in recognizing and tackling food waste. By analyzing these programs, the authors aim to gain insights into current efforts to reduce food waste. They likely examine data and findings from these programs to understand trends and successful initiatives. The paper may emphasize the importance of reducing food waste from a sustainability perspective, considering its environmental and economic impacts. It likely provides recommendations for policymakers and stakeholders to improve food waste reduction strategies. Overall, the paper contributes valuable insights into ongoing efforts to combat food waste in the United States, aiming for a more sustainable food system.

> *Daniel Mmereki Victor Emery David, and Alfred H Wreh Brownell (2023). " The management and prevention of food losses and waste in low- and middle-income countries: A mini-review in the Africa region ".*

The Management and Prevention of Food Losses and Waste in Low- and Middle-Income Countries: A Mini-Review in the Africa Region" likely offers insights into addressing food loss and waste challenges specific to African nations. Authored by Daniel Mmereki, Victor Emery David, and Alfred H. Wreh Brownell, it likely examines factors contributing to FLW, proposes innovative solutions, and emphasizes multi-stakeholder collaboration. Expect a concise analysis of FLW management practices, including case studies illustrating successful interventions. The review may conclude with actionable policy recommendations tailored to the African context, aiming to improve food security and sustainable development. Overall, this collaborative effort likely provides a holistic perspective on FLW management and prevention strategies in low- and middle-income countries in Africa.

> *Problem Solving*

Donors have to search for some websites to donate surplus food. In general, the large manufacturers, wholesalers, and organized community provide food items to food banks or waste tons of foods daily. They have to search for some organization that needs food. This process involves a lot of time to contact the organization to check the requirement. If they do not need the food, then the person has to contact another organization. This makes the donor tired and exhausted.

> *Drawbacks of Existing System*

- *Low Accuracy*
- *Low Efficiency*

➤ *Proposed System*

A food donation portal is an online platform designed to facilitate the donation of surplus food to individuals and organizations in need. In densely populated nations like India, Surplus food from canteens, weddings, restaurants, social gatherings, and events leads to Food Wastage in a large-scale. Rather than allowing this food to go to waste, it can be put to good use by donating it to various institutions such as elderly care homes, orphanages, and more.

The proposed Food Donation Website is designed to International Journal for Multi disciplinary Research provide an efficient and user-friendly platform for connecting donors, administrators, and agents to streamline the food donation process. The Food Donation Website aims to create a seamless and accountable system that encourages food donors, assists administrators in maintaining order. This platform will enhance the food donation process, reduce food waste, and contribute to the well-being of communities while fostering a spirit of generosity and social responsibility.

➤ *Advantages of Proposed System*

- *High Accuracy*
- *High Efficiency*
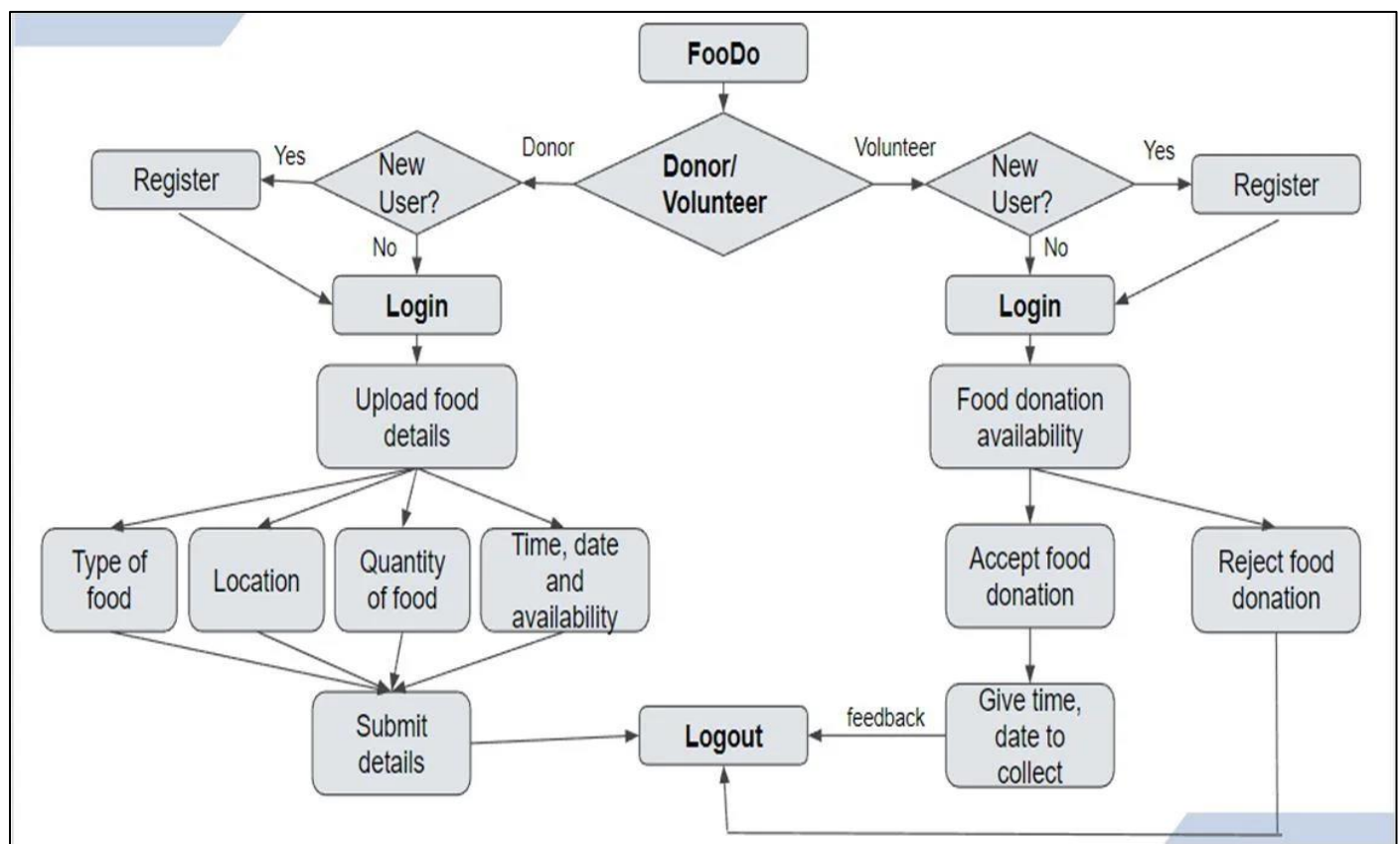
➤ *System Architecture*

Fig 1Representation of Architecture

➤ *Module Description:*

- *Donor Module:*

Initially, the Donor will register on our FeedFriend website and then log in using their login credentials. They can give the extra food after logging in by completing the Donation Requests Form found in the Dashboard's Make Donations section.

- *Receiver Module:*

In order to log in, recipients must first register on our website. Receivers can find several Donation Requests in the form of Food Cards in the Dashboard's Available Donations section after successfully logging into the FeedFriend website. Food Name, Food Type (Veg or Non-Veg), Food Expiration Date & Time, Donor Contact & Location, Donation Status, etc. are all included in these food cards. The recipient has the option to filter the meal cards according to his location and preferred food type. The recipient must get in touch with the donor and select "Pending Status" in order for the donation to become "Donated Status."

- *Admin Module:*

The administrator must also sign up and join in to our FeedFriend website. The administrator can add, edit, and remove information about Food and Users (donors and recipients).
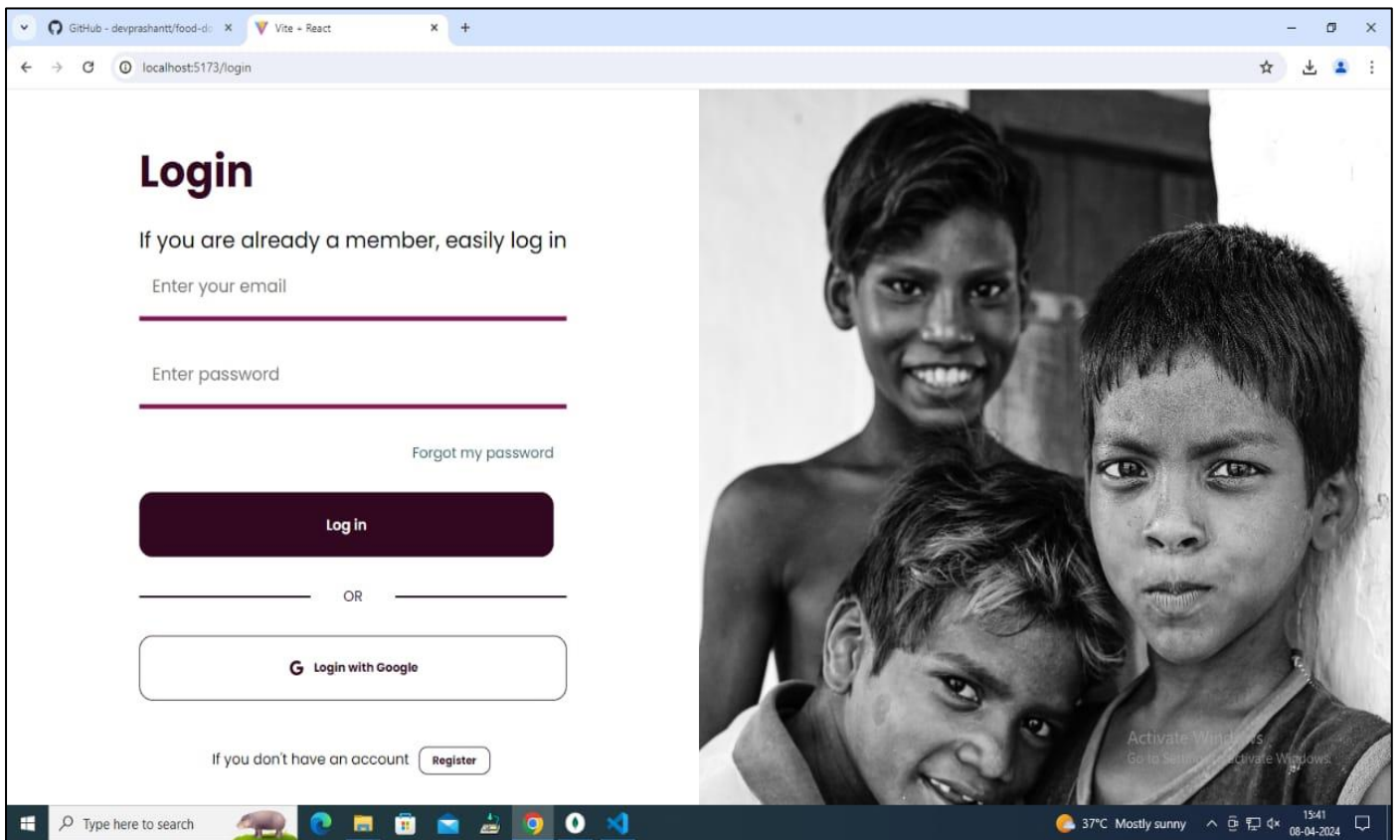
III. RESULTS AND ANALYSIS

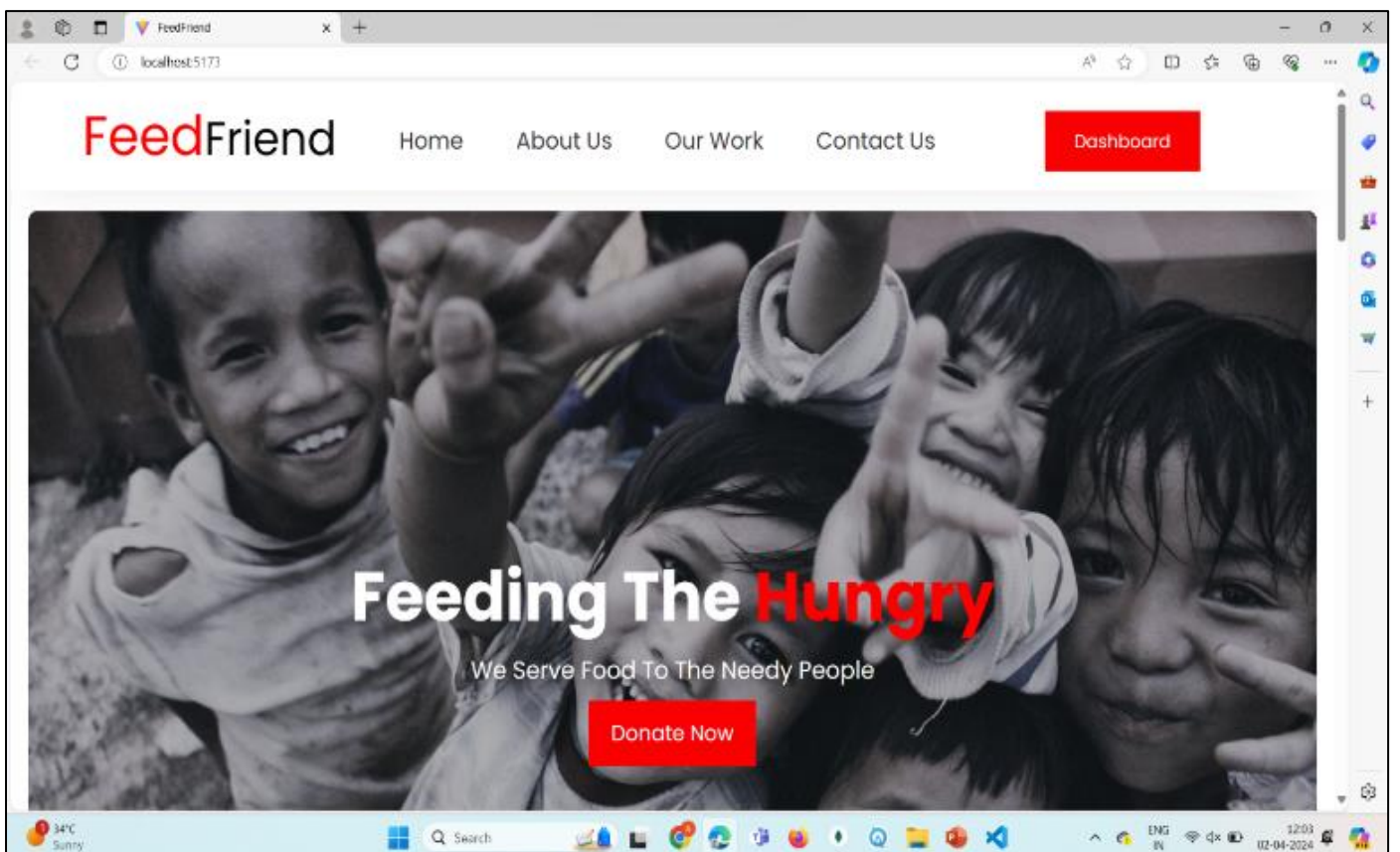Fig 2 The Above Page Shows the Login Page for the Users of Feed Friend

Fig 3 The Above Page Shows the Home Page of FeedFriend Website
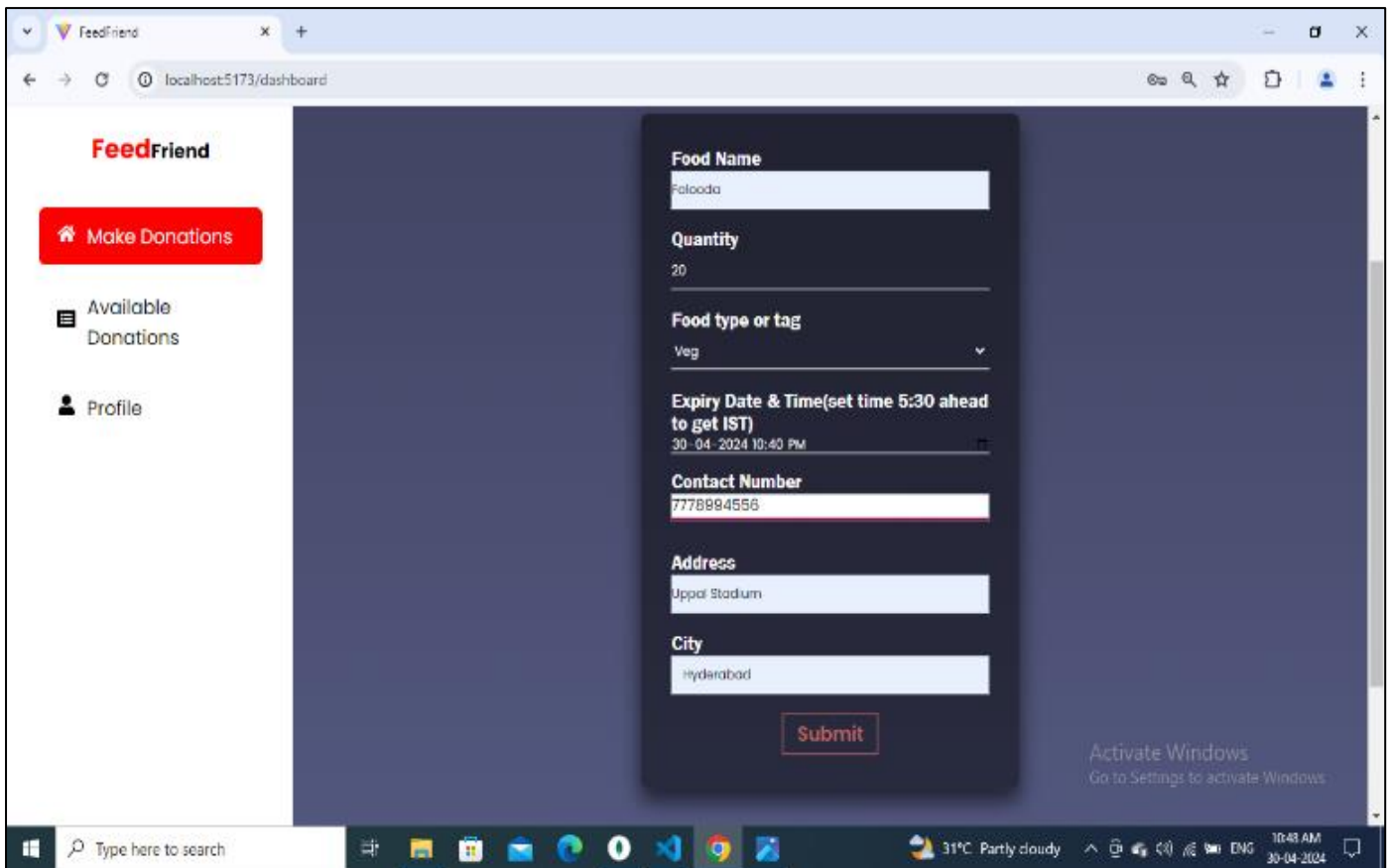
Fig 4 It Shows how the Donors can Make a Donotion Request from the Dashboard of Feed Friend
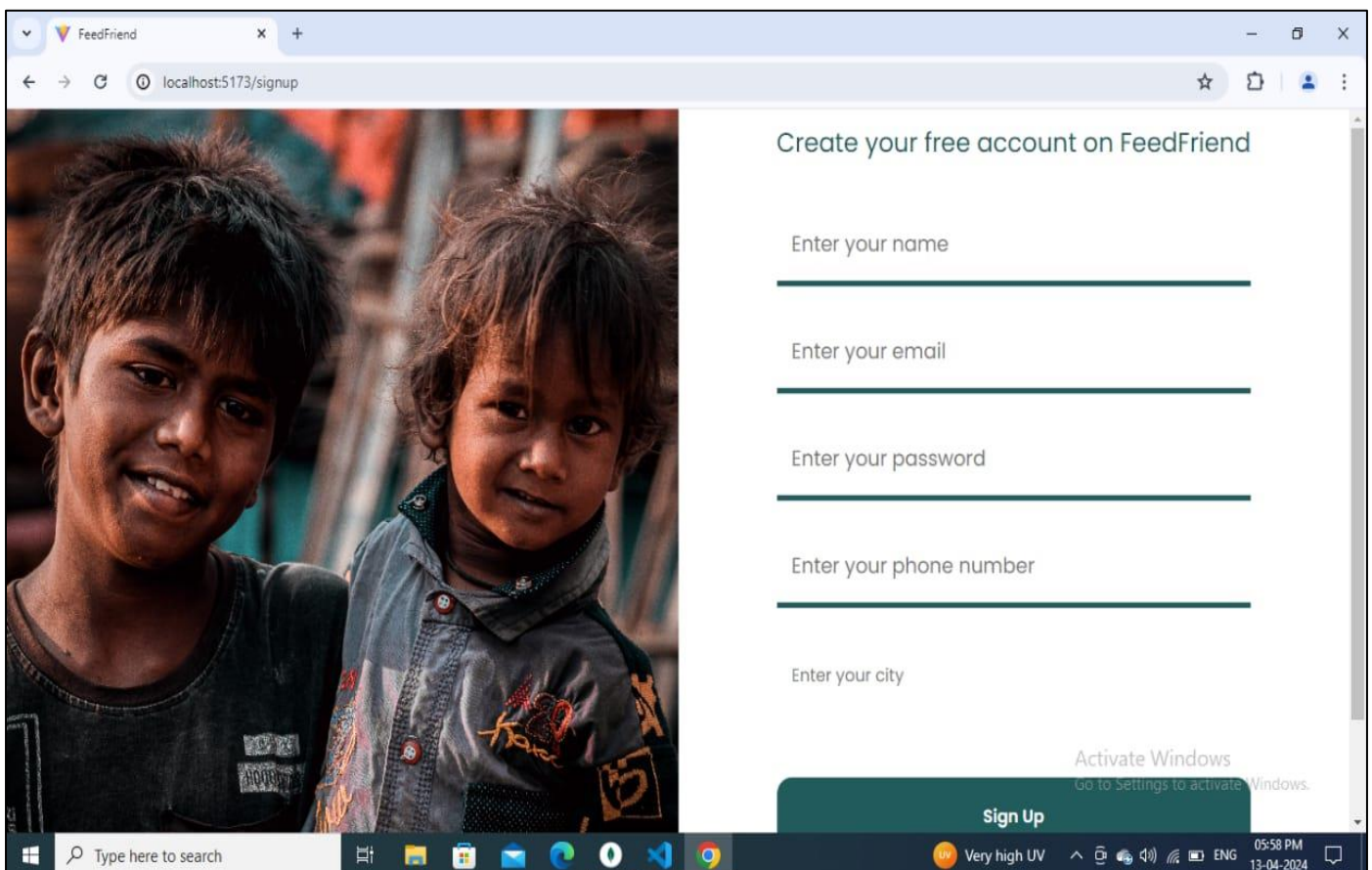

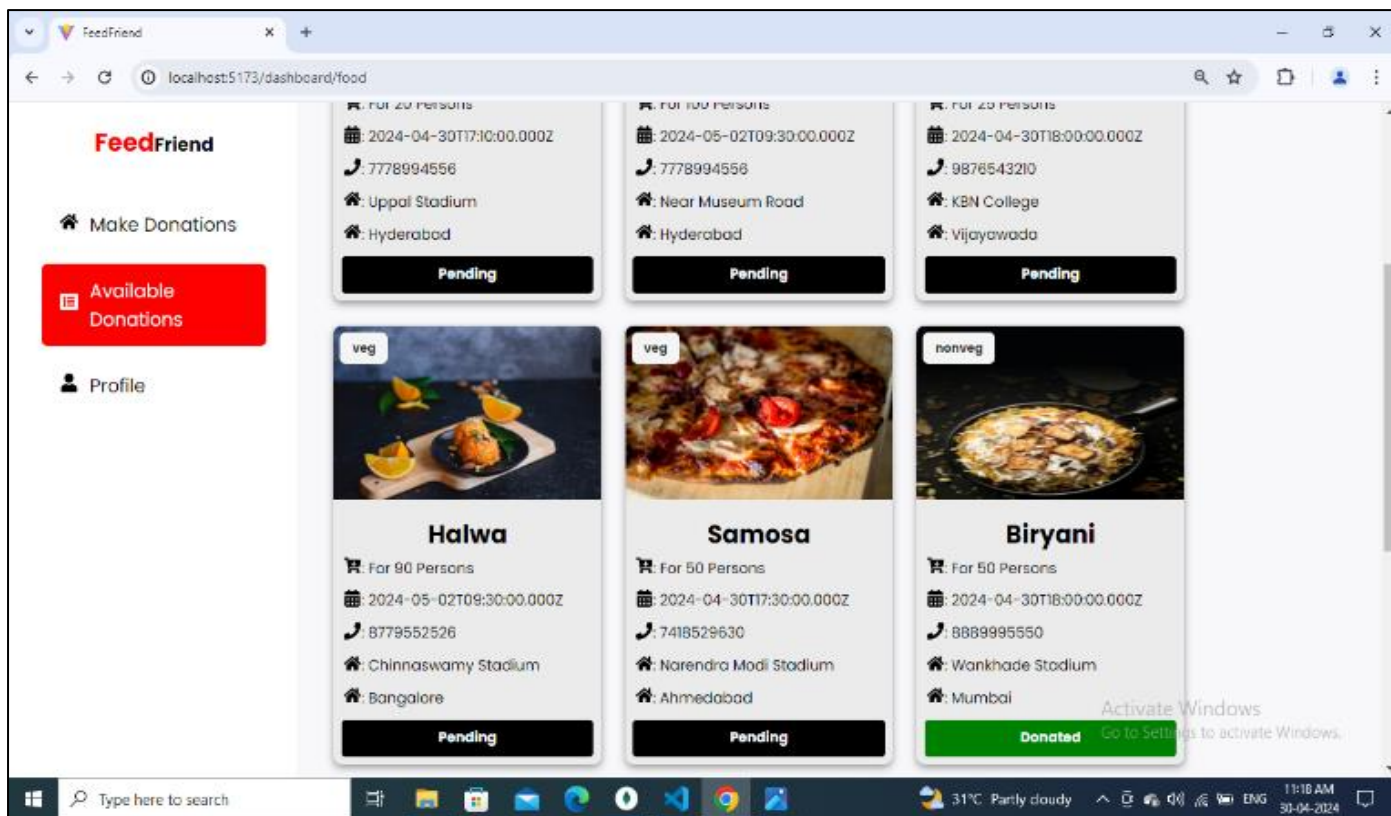Fig 5 The Above Page Shows the Sign Page for the Users of Feed Friend

Fig 6 Here, Users (both Donors & Receivers) can see the Food Cards of the Available Donations as shown in figure. The Donation Food Card shows following details of Available Donation like:- Food Name, Type of Food(Veg or Non-veg), Quantity(No of People the Food availble for), Expiry Date & Time , Donor's Contact Details, Donor's Location and Status of Donation.
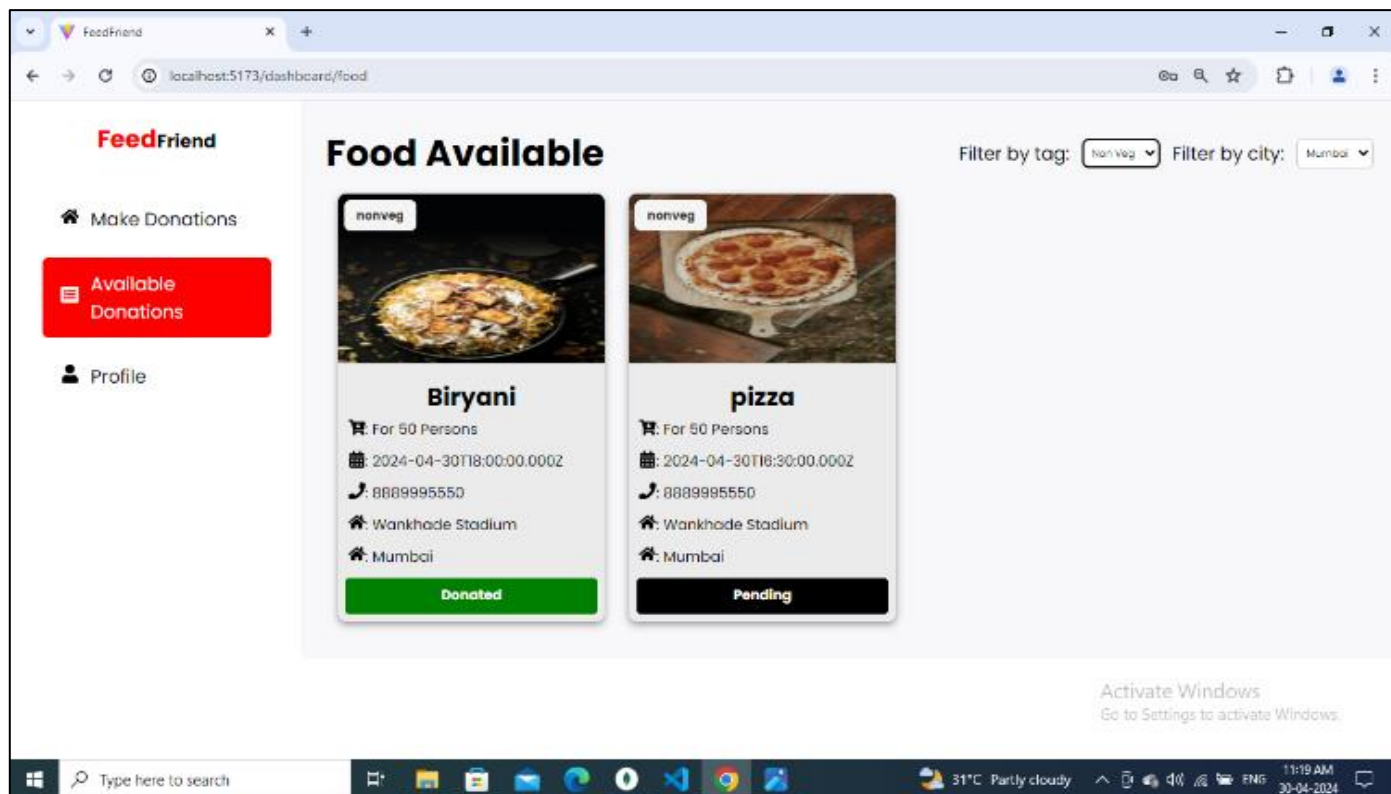

Fig 7 Here, Receivers can filter out the Available Donations based on their Location and Type of Food (Veg or Non-veg).

Fig 7 And also if Receiver want to accept any Donation Request, he can simply click on Pending Status button then it turns to Donated Status which ensures the Successful Donation.
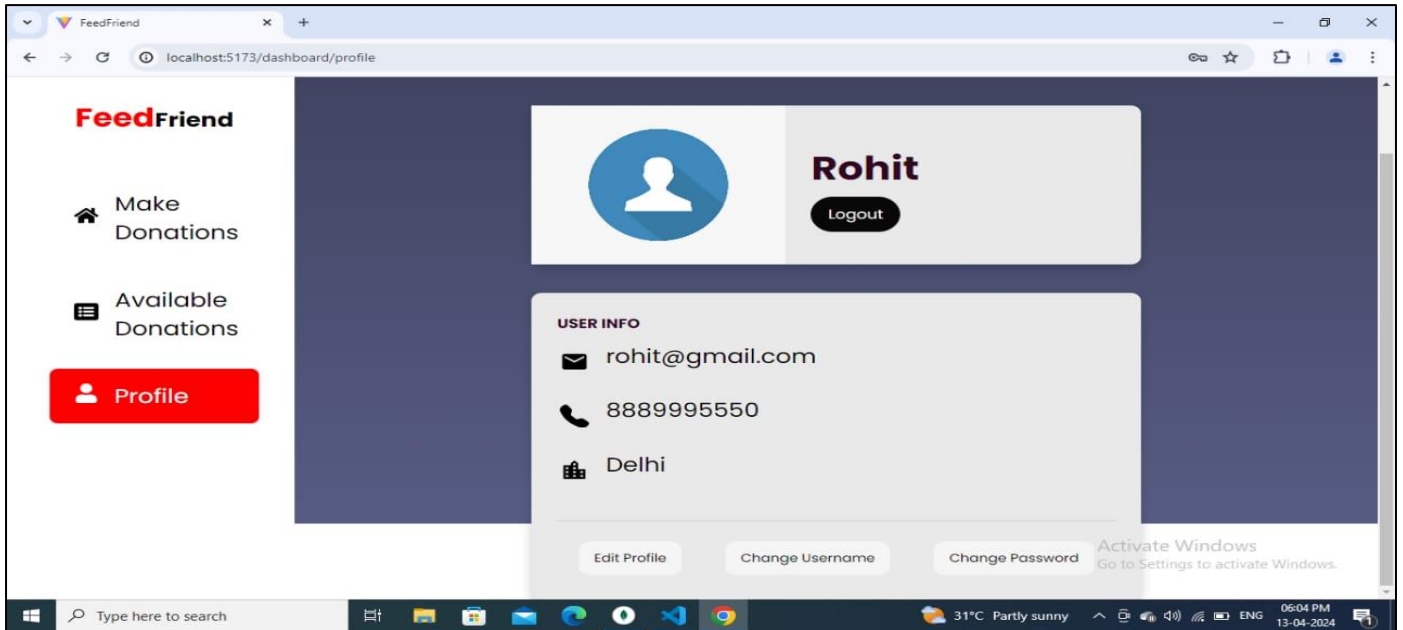
Fig 8 In this Page Users can See and Update their Profile Details and can also Logout

IV. CONCLUSION

In conclusion, FeedFriend offers a comprehensive solution to combat food wastage and address food insecurity by leveraging technology to connect donors of surplus food with recipients in need. Through features such as donor registration, food listings, recipient matching, real-time notifications, communication tools, and analytics, FeedFriend facilitates the efficient redistribution of surplus food while fostering a sense of community and collaboration. By utilizing these innovative tools, FeedFriend strives to make a significant impact in reducing food wastage and ensuring that edible food reaches those who can benefit from it the most.

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