

# **Food Waste Management System**

Submitted in partial fulfillment of the requirements of

**Second Year**

in

**Artificial Intelligence and Data Science**

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**(AY 2022-23)**

# CERTIFICATE

This is to certify that the Mini Project 1A entitled “ **Title** ” is a bonafide work of **Name of students (Roll No.)** Submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of “**Bachelor of Engineering**” in “**Artificial Intelligence and Data Science**” .

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# Mini Project Approval

This Mini Project entitled “ *Food Waste Management System* ” by **Shubhankar Gite (10) , Adarsh Murali (26) , Vedant Ranade (38) , Trushank R Vashikar (48)** is approved for the degree of **Bachelor of Engineering** in **Artificial Intelligence and Data Science**.

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Place:

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# **Abstract**

Food is wasted on a large scale which has great social and environmental implications. The proposed system provides a website with a common platform for the NGOs , for the management of food waste via distribution and other means so as to reduce the waste and help the needy. The proposed system aims at reducing food wastage by giving it to the needy. The donation is sent by the user via the system which in turn sends feedback to the NGOs. The system is fed about the details about the quantity and expiry. The alerted NGOs according to the nearest relative location will go and receive the food accordingly.

# Acknowledgement

The success and final outcome of this project required a lot of guidance and assistance from many people and we are extremely fortunate to have got this all along the completion of my project work. Whatever we have done is only due to such guidance and assistance and we would not forget to thank them.

We owe our profound gratitude to our project guide Dr. Preeti Jain, who took keen interest on our project work and guided us all along, till the completion of our project work by providing all the necessary information for developing a good system.

We are thankful to and fortunate enough to get constant encouragement, support and guidance from all teaching staff of Artificial Intelligence and Data Science which helped us in successfully completing our project work.

Also, we would like to extend our sincere regards to our families and friends for supporting and guiding us.

## **LIST OF ABBREVIATIONS:-**

United Nations Environment Programm :- UNEP

Global Hunger Index ;- GHI



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# Chapter 1. Introduction

## 1.1. Introduction

Food waste is a global phenomenon, a recent one. Historically, food scarcity was a huge problem. People used to starve and it was a major contributor to the lower mortality rate in the past. Today, in the post-war world, where almost half of the world is prosperous, ironically, the opposite of food scarcity has become a problem.

Today, we are facing a major problem of food wastage where millions of tonnes of food are wasted and yet there are millions of people starving. A new report released by the United Nations Environment Program has revealed the shocking scale of global food waste. Its 2021 food waste index estimates that people discard 931 million tonnes of food annually with per capita food waste averaging 74 kg per household.

569 million tonnes fall into the category of household waste. Supermarkets and other businesses are also guilty of disposing of significant quantities of food with the total amount discarded also adding up to hundreds of millions of tonnes per year. The report estimates that 244 million tonnes is wasted by food service annually while retail discards 118 million tonnes.

UNEP defines food waste as food that completes the food supply chain up to a final product, of good quality and fit for consumption, but still doesn't get consumed because it is discarded, whether or not after it is left to spoil or expire. Food waste typically (but not exclusively) takes place at retail and consumption stages in the food supply chain.[1]



Fig 1.1.1. Graph of global household food wastage[2]

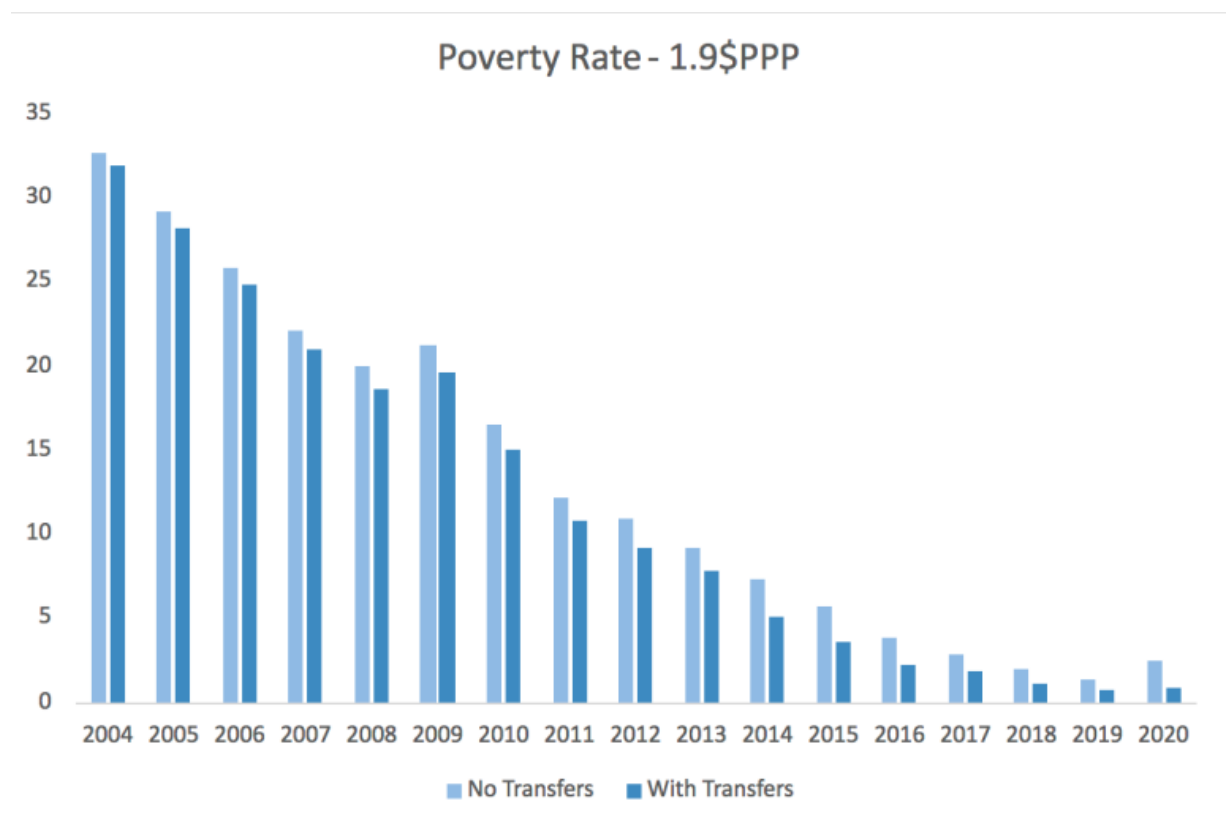
### 1.1.1. Starvation and Poverty in India

Food loss or food waste is the food that is not eaten by the consumer. In addition to that bring down food waste in all role of the food organization is an main part of decreasing the environmental conditions of agriculture, by bring down the whole quantity of water, land and other external resources needed to provide the global group. Decreasing the food waste is the major part of global as it makes the food out of dumping ground.

It makes profitable sight, by reducing food bills and by decreasing throwing away costs for restaurants. By properly analyzing and managing the food waste makes our world to economically and environmentally healthy and make the resources available for the future generations.

Everyday many so much amount of food is getting wasted in restaurants and weddings. So we take an initiative to develop a web application as we can't track the food getting used in weddings. This web will help to connect people directly to NGOs and the remaining food which is going to be wasted can be picked and supplied to needy . The dashboard has a supplying form forp collection by the nearest NGOs who actually requested for the food and the food waste can be given to the agricultural land for fertilization.

As Poverty Rate in India is declining in past two decades , thus, there has been increase in the consumers of food as well as more and more people are able to buy food thus the the food wastage has been also on increase . Yet there are also people who are still under poverty line , for whom getting food is day to day fight and struggle [3]



*Figure 1.1.2. Graph of decline in poverty rate of India[4]*

<b>Year</b>	<b>Food Waste</b>
2018	52 Million tons
2019	59 Million tons
2020	67 Million tons
2021	75 Million tons
2022	83 Million tons

*Table 1.1 Food Wastage Of India in past 5 years [3]*

### **1.1.2. Food Waste in India**

Food Waste is a major problem in developing countries especially in India . Indians waste as much food as the whole of United Kingdom consumes food wastage has become an alarming issue in India. The streets, garbage bins and dumping grounds and even our homes are enough to prove it .

Weddings ,restaurants, hotels, social and family functions, households throw out food that according to the United Nations Development Programme(UNDP), up to 40% of the food in India is wasted. About 21 million tons of wheat is wasted in India and 50% of all food across the world meets the same fate and never reaches the needy. In fact, according to the agriculture ministry, Rs. 50,000 crore worth of food produced is wasted every year in the country. India ranks 103 among 119 countries in the Global Hunger Index 2018. Wastage of food is not only indicative of hunger or pollution, but also many economic problems in the country, such as inflation. Only government policies are not responsible for the problems we are facing today, but our culture and traditions are also playing a lead role in this drama. In India, the bigger the wedding, the larger the party and the more colossal the waste.[5]

According to the Brihanmumbai Municipal Corporation (BMC)’s Environment Status Report 2020-21, of the 6,500-6,800 metric tonnes of solid waste generated daily by Mumbai, as much as 72.6 percent is food waste. It makes up close to three-fourths of all waste hat was collected and disposed of in the last financial year . [6]

### 1.1.3. Survey through Global Hunger Index

The **Global Hunger Index (GHI)** is a tool that measures and tracks hunger at global, regional, and national levels, reflecting multiple dimensions of hunger over time. The GHI is intended to raise awareness and understanding of the struggle against hunger, provide a way to compare levels of hunger between countries and regions, and call attention to those areas of the world where hunger levels are highest and where the need for additional efforts to eliminate hunger is greatest

GLOBAL HUNGER INDEX		Methodology	Ranking	Trends	Issues in Focus	Policy Recommendations	Resources	Download	Sea
85	<a href="#">Venezuela (Boliv. Rep. of)</a>	14.6	10.1	8.1	19.9	11.8	145.7		
86	<a href="#">Botswana</a>	27.7	25.8	20.5	20.0	-0.5	-2.4		
87	<a href="#">Gambia</a>	29.0	26.5	22.2	20.7	-1.5	-6.8		
87	<a href="#">Malawi</a>	43.3	32.5	24.1	20.7	-3.4	-14.1		
87	<a href="#">Mauritania</a>	31.8	28.3	26.3	20.7	-5.6	-21.3		
90	<a href="#">Djibouti</a>	44.3	35.8	27.4	21.5	-5.9	-21.5		
91	<a href="#">Benin</a>	33.8	26.9	23.2	21.7	-1.5	-6.5		
92	<a href="#">Togo</a>	39.3	30.2	26.1	22.8	-3.3	-12.6		
93	<a href="#">Mali</a>	41.7	35.7	26.1	23.2	-2.9	-11.1		
94	<a href="#">Kenya</a>	36.6	31.1	21.6	23.5	1.9	8.8		
95	<a href="#">Tanzania (United Rep. of)</a>	40.8	30.9	25.5	23.6	-1.9	-7.5		
96	<a href="#">Burkina Faso</a>	44.9	34.5	26.5	24.5	-2.0	-7.5		
97	<a href="#">Korea (DPR)</a>	39.5	29.6	27.5	24.9	-2.6	-9.5		
98	<a href="#">Angola</a>	64.9	44.7	26.2	25.9	-0.3	-1.1		
99	<a href="#">Pakistan</a>	36.8	32.1	29.6	26.1	-3.5	-11.8		
100	<a href="#">Papua New Guinea</a>	33.6	29.9	29.0	26.5	-2.5	-8.6		
101	<a href="#">Comoros</a>	39.5	31.7	29.1	26.9	-2.2	-7.6		
102	<a href="#">Rwanda</a>	49.9	35.9	29.5	27.2	-2.3	-7.8		
103	<a href="#">Nigeria</a>	40.4	32.1	28.4	27.3	-1.1	-3.9		
104	<a href="#">Ethiopia</a>	53.6	42.6	27.4	27.6	0.2	0.7		
105	<a href="#">Congo (Republic of)</a>	34.7	33.7	25.3	28.1	2.8	11.1		
106	<a href="#">Sudan</a>	—	—	29.3	28.8	-0.5	-1.7		
107	<a href="#">India</a>	38.8	36.3	28.2	29.1	0.9	3.2		

*Figure 1.1.3. India's ranking in Global Hunger Index*

Global Hunger Index ranking of India is 107 which is lower than her neighbouring South Asian countries of Pakistan , Bangladesh and Sri Lanka

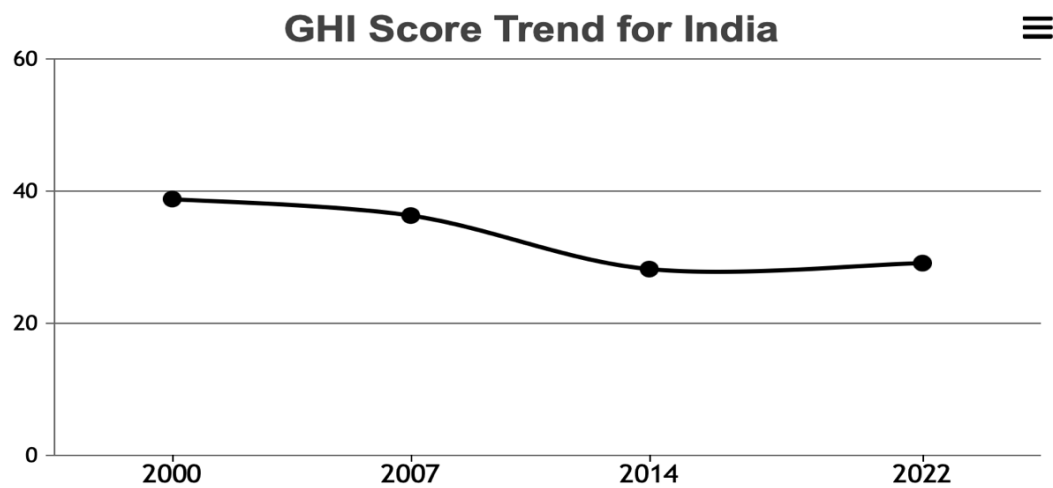


Figure 1.1.4. India's trend in Global Hunger index

GHI trend of India is plummeting as compared to what it was twenty years ago

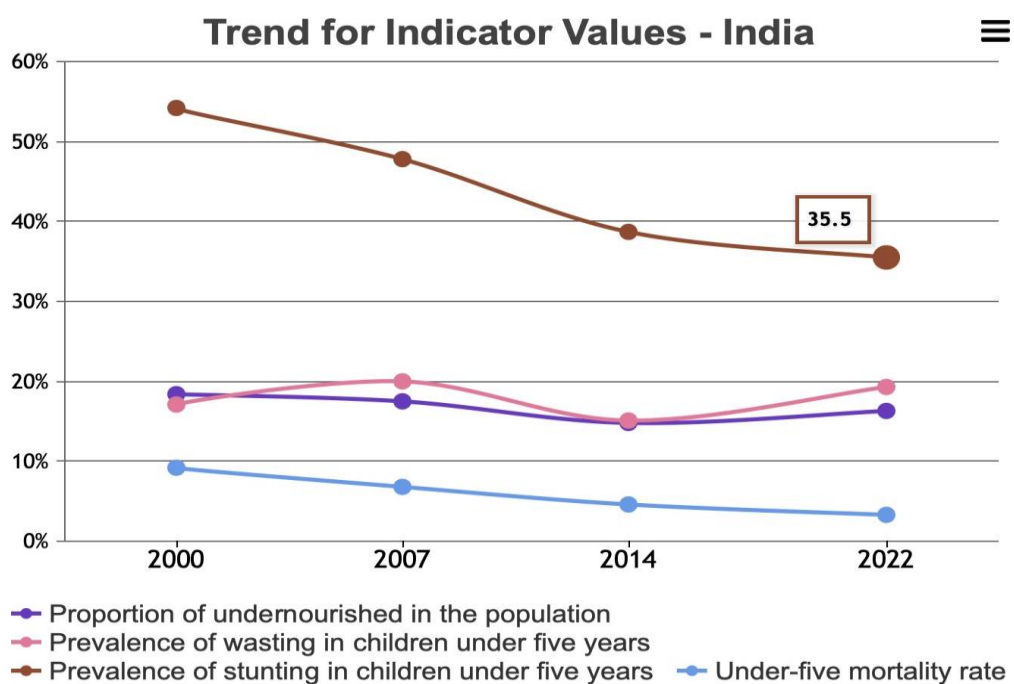
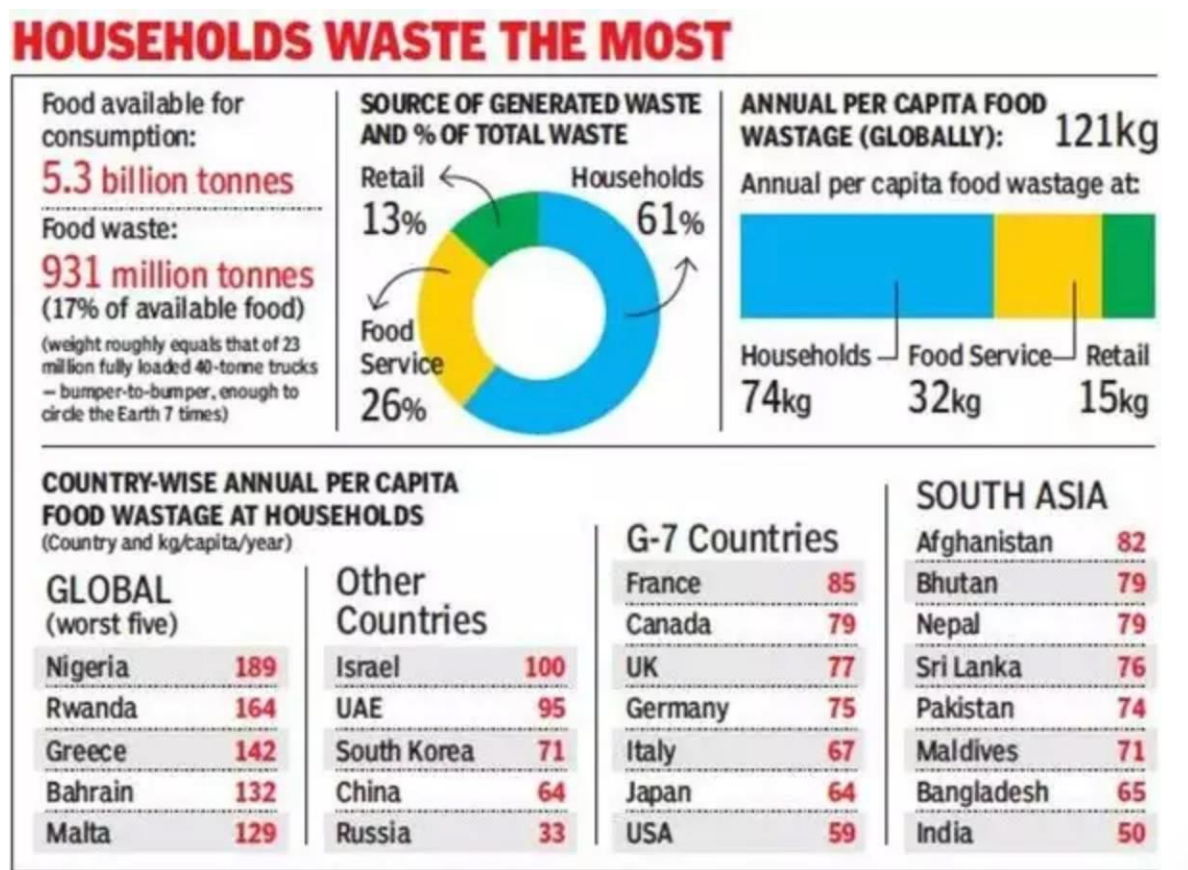


Figure 1.1.5. Trends of factors deciding GHI rank

India has been doing good in terms of under-five mortality rate and stunting of children whereas wasting of food and malnourishment has increased[7]





*Figure 1.1.6. Survey of household waste in India[8]*

#### 1.1.4. Government Policy Interventions

There is very limited policy analysis of food loss in the reviewed studies, apart from NAAS (2019), DFI (2017), NCCD (2015), UJA (2019), and Ganesh et al. (2018).

Agriculture is a state subject in India, but the Union Government plays a supportive role by formulating policy guidelines and advice and allocating funds. Several schemes are facilitated by the Government of India for strengthening post-harvest management infrastructure, particularly for storage and cold chain (Table 4). However, no data are available on whether these schemes have been successful in reducing losses.

Both the national commission of farmers set up in 2004 and the Dalwai Committee on Doubling Farmers' Income (DFI) in 2017 recommended several measures to improve post-harvest infrastructure in order to reduce loss and waste.

However, no information is available on the systematic uptake of these suggestions at the policy level. Most recently, in May 2020, the Finance Minister announced an INR 1 trillion (USD 13.5 billion<sup>5</sup>) agriculture infrastructure fund as part of the Atmanirbhar Bharat Abhiyan stimulus package to deal with the COVID-19 crisis.

The aim was to provide a medium-to-long-term debt financing facility for setting up cold chains and post-harvest management infrastructure at the farm gate and aggregation points. The fund, financed and managed by the National Bank for Agriculture and Rural Development (NABARD), will be made available to primary agriculture cooperative societies, farmer producer organizations, entrepreneurs, and start-ups (The Hindu 2020). NABARD provides loans and subsidies for warehouses, silos, cold-chain facilities, upgrading marketing infrastructure, and so on.<sup>[9]</sup>

Some problems in the Indian food supply chain include inefficiency of government programmes, lack of transparency in revenue generation, insufficient storage facilities, and lack of comprehensive and accurate inventories. While the Indian Government had voiced the need for regulation of food wasted at hotels, restaurants and weddings, in early 2017, it hasn't yet specifically addressed concerns posed by the retail sector. In a report on food wastage caused by the hospitality industry, the Department of Consumer Affairs acknowledged the complexity of regulating overindulgence, in terms of purchase and consumption.

It presented education and increased awareness of food wastage, driven by print and electronic media, as the main solutions to India's food waste problem. Yes, early awareness about our duty to minimise food waste is critical in changing the way our society addresses hunger and food scarcity.

However, we must also adopt easy-to-implement and efficient measures that retail sectors in other countries have already developed, while continuing to understand how our unique distribution system can cope with the needs of millions of hungry fellow Indians. We can look to best practices and laws in countries like France, Norway, Denmark, UK, etc., in order to check spoilage and destruction of edible food waste in India. For example, in France, supermarkets prioritise reduction, reuse and recycling of extra food.

Similarly, in India, partnerships with charity organisations and food banks are integral to ensuring donation of extra food from retail outlets to those in need. Food that has crossed its sell-by date, and can't be donated, can either be composted or converted into biofuel for retail outlets' delivery trucks. Some other initiatives that can help reduce food wastage include removing expiration dates from non-perishable commodities (like salt, sugar, etc.), allowing discounts on single items (such as a separated banana), removing general store promotions (such as buy-one-get-one-free), and making mandatory messages about food waste in retail advertisements. In addition, mandatory employee-training on food waste prevention can really change how the retail industry approaches food supply. Cities like Chennai, Kochi, Mumbai, Bangalore, and even Gurugram, are increasingly embracing the use of community fridges in combating hunger. Installing community fridges outside retail outlets is indeed a compassionate way of providing free daily access to extra food, to those in need.

#### **1.1.5. Food Waste & Environment**

When you thought that wasting food had no other effect, you were wrong. Food wastage aside from impacting world hunger it also affects the environment. The already scarce natural resources have additional pressure every time food is lost or wasted. Greater the wastage of food along the chain the greater is the impact on the environment because we have to consider the natural resources and the energy that goes waste into producing, processing, transporting and storing the food items.

Once this food waste lands into the landfills it releases a powerful greenhouse gas - methane. This deadly gas with Carbon Dioxide and chlorofluorocarbons heat up the earth's atmosphere, in the end, causing global warming, Prajal Pradhan, co-author of a research "Food Surplus and its climate burden", explained, "Agriculture is a major driver of climate change, accounting for more than 20 percent of overall global greenhouse gas emissions in 2010. Avoiding food loss and waste would, therefore, avoid unnecessary greenhouse gas emissions and help mitigate climate change." [10]

## 1.2. Motivation

Food Waste has been a huge issue in modern times, with the increase in the economy and standard of life in India has increased the demand for food. But not all food gets consumed and thus gets wasted. But at the same time, we also have a huge population of people who don't get enough or no food and many are victims of malnutrition. Thus, a better system for the management of food waste is the need of the hour. Various systems of waste were invented for the same, but they aren't as effective as they were meant to be.

Approximately 40% Food Waste in India and the way forward. A rough estimated figure by the Food and Agricultural Organisation (FAO) - Approximately 40% of the food produced in India is wasted every year due to fragmented food and inefficacious supply chain system. The irony is that loss occurs even before the food reaches the consumer.

This mini project aims at the development of a website for connectivity of the providers , the NGOs and the necessitous and the distribution of the "to be wasted" food. The idea is that given a system specification, by following the methodology and with the help of the tools developed to support it, the user will be able to notify nearby NGOs about the availability of extra food which is then collected by respective NGOs which further distribute this food to the necessitous.

### **1.3. Problem Statement**

A drastic increase can be seen in food waste. As per data given by Food and Agriculture Organization (<http://www.fao.org/food-loss-and-food-waste/flwdata>), 1/3rd of food produced for human consumption is wasted globally, which accounts for almost 1.3 billion tons per year. On the other hand, also as per WHO 20% of the population faces extreme food shortages. Hence there is a need to come up with a solution that can avoid food waste & can help feed the needy. This website of the Food Waste Management system can assist in collecting the leftover food from hotels & restaurants to distribute among those in need. NGOs that are helping poor communities battle starvation & malnutrition can raise a request for food supply from restaurants through this application. Once the request is accepted, the NGOs can collect the food from the restaurants for its distribution. In this way, this website based on a food waste management system will help restaurants to reduce food waste and will help in feeding the poor and needy people.

### **1.4. Objectives**

- Provide User Friendly Interface.
- Keep track of food wastage from restaurants
- User can play a role in saving food wastage and help the needy

### **1.5. Organization of Report**

Chapter 2 discusses the Literature survey.

The Proposed system has been further elaborated in chapter 3.

# Chapter 2 :- Literature Survey

## 2.1. Survey of Existing System:

### 2.1.1. Invisible Foods

To reduce food waste effectively, Invisible Foods is developing several technical components that all combine into one seamless product. The main features are: A digitized quality control and analytics system that identifies food that will rot in the near future; A marketplace to match products of various quality levels with buyers who can use that specific quality

In warehouses used by traders, digital cameras are used to capture images of fruits and vegetables during Quality Control. The imaging software then determines what the item is, whether it has esthetical and/or biological damages and how many more days it has before it rots.

The freshest produce for example will be sold to supermarkets, but less fresh fruit can still find uses elsewhere, where it can be processed or used immediately. [11]

### 2.1.2. Roti bank :

From June 20, 2015 onwards, they started bringing rotis and distributed them among those in need. They also placed a box in the market and endorsed the idea of donating rotis to the visitors and passers-by, post which the number of packets in the box started increasing. We started with just seven packets in 2015.

Today, we collect and distribute about 3,200 packets every day from our centres,” says Sudhir. “We have a minimum of two volunteers at each of these centres.” But sustaining such a huge operation on a daily basis is not an easy task. So how do they do it? They depend on the kindness of people. The organisation does not accept any monetary contributions but in case anyone wants to contribute, they can do so in the form of food packets. And if one is unable to cook the food themselves, they can get in touch with one of their vendors who prepare the food. The organisation found that people make a

point to donate on special occasions, especially on birthdays and anniversaries. “As a birthday gift to my friends, I contribute in the form of roti packets on the occasion,” says Alka Kapur, who has served as the principal of Modern Public School, Shalimar Bagh for the last 20 years. “Instead of spending on fruitless gifts, I make the contribution and inform them about it.” Seeing the impact of the cause in the lives of those in need, the students of MPS have become quite passionate about [12]

### **2.1.3. Community Fridge**

Hyderabad: To avoid food wastage and help the needy, Greater Hyderabad Municipal Corporation (GHMC), along with NGO Apple Home for Orphan Kids, has set up community refrigerators across the city in January this year. Seven months later, the enthusiastic response the scheme received during the initial period is no longer there. There are more than 15 refrigerators in the city, with plans for more.

While at some locations the refrigerators looked good enough to take food out of, at other places, people complained that refrigerators were in unhygienic conditions because of lack of regular maintenance.

“Initially, people used to deposit food such as idlis and other restaurant leftovers,”

After the inauguration in January, the community refrigerator at Banjara Hills, were swarmed with fresh food, fruits, baked goods, rice, and different types of bread, say residents.[13]

## **2.2. Limitation:**

### **2.2.1. Invisible Foods:**

AI based quality control system is available which is very expensive and requires more space so cannot setup everywhere. It is more focussed on cooperate. For eg: They will pick raw materials from farmers and check if fruits, vegetables are damaged biologically and if no then will check the time it will take to ripe and segregate food. The freshest produce for example will be sold to supermarkets, but less fresh fruit can still find uses elsewhere, where it can be processed or used immediately. They are helping food traders optimize their storage and supply chains so that food processing companies and restaurants find the raw materials they need.[11]

### **2.2.2. Roti Bank**

There is no proper interface available for conducting this process smoothly from donators to the needy via NGO's. Thus more staff is required in call canters which had to established in various part of the districts and villages which was not that economical and efficient as it was time consuming and thus cause delay in the supply of the food to the poor and the needy and does not ensure maximum food security.

There were few cases reported of food poisoning as the authorities used bad quality of wheat in roti banks this thus impose serious health hazards to the poor as food poisoning may lead to death and this was not preventable efficiently as there was no physical quality check of the food donated by the dono



### **2.2.3. Community Freeze limitations:**

Rajan, who is a fruit seller and visits the community fridge at Madhapur, stated “Initially, people used to deposit food such as idlis and other restaurant leftovers, But nowadays, most food is either stale or somehow inedible. There is nobody to check what kind of food is being deposited, so people have mostly stopped using it. Sometimes, hungry people still come and check if there is anything edible.”[9]

Now, the fridge is empty and the white shelves have dal and sambhar stains. Placing the food haphazardly has also resulted in filth around the fridge, thereby inviting stray animals like dogs and cows around them.

## **2.3. Mini Project Contribution/Objectives**

This mini project provides a good user friendly interface which also educates the people about our goals and rising food insecurity due to poverty and lack of access to good food due to various issues like global warming etc. Also the interface provides a way to connect with any NGO easily if someone wants to donate excess food they can connect with the NGO via forms available in the website.

This project also ensures quality of the food as it would be tested physically by the authorities of NGOs and they would even have the records of the donor. Thus, the donor would be credible and helps to keep the process fast and easy. This method can be efficiently utilized in remote rural areas of the country as it does not require a lot of infrastructure and resources.

# Chapter 3: Proposed System

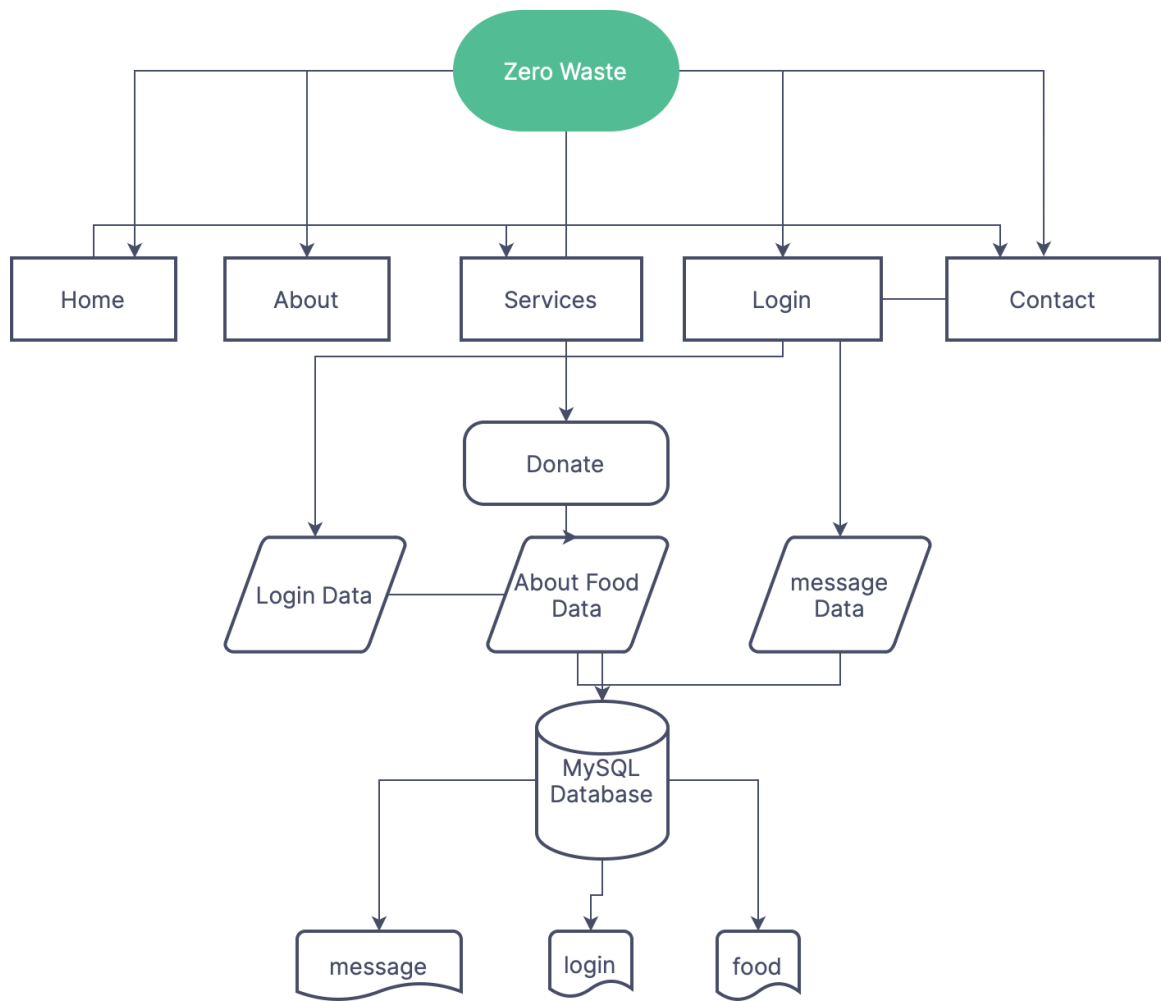
## 3.1. Introduction:-

To create an efficient and feasible way of connecting the haves and have-nots, we designed a system, i.e., a website, which helps people with excess food to donate to the needy through NGOs and private benefactors . Our website works on the principle of "first come, first served", but it is "first come first serves".

For expressing our ideas and applying them we found a website to be the most efficient way of connection NGOs , the donors and the needy. For this we have used WordPress to host the website , CSS for styling and designing the website , HTML for creating the forms and MySQL for storing the database .

Further the website has information about our mission , goals ,objectives , a list of Frequently asked questions , login information , contact and further donate button for describing about the food .The website is cross platform that means the website can be searched on desktop as well as from smartphones , along with that our website is hosted in a spacious server. We also have tried link locations of NGOs and as per that our alerts are been sent .

## 3.2. Architecture

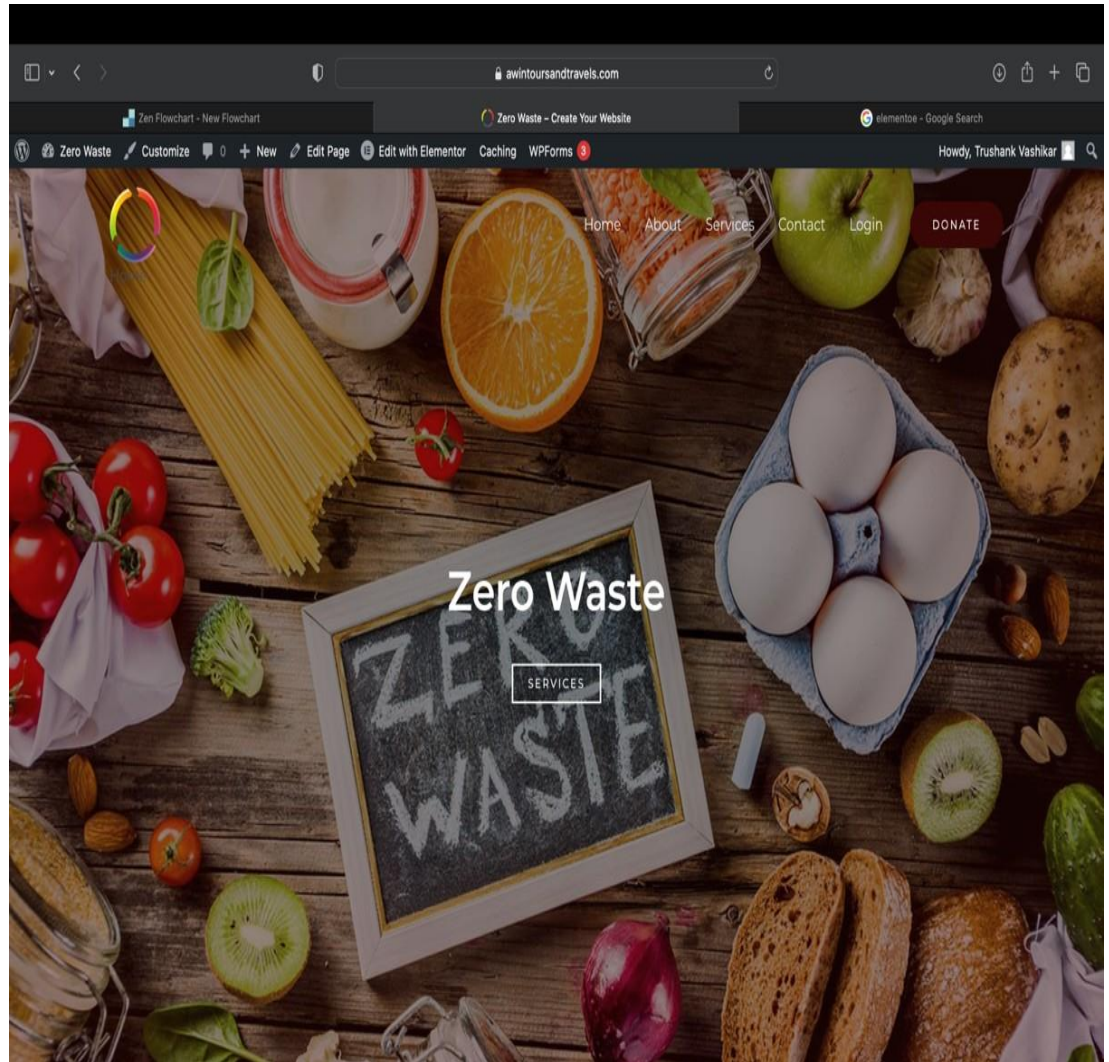


*Figure 3.2.1. Flowchart of working of the website.*

Our website gives details about food wastage and what we do with the food in the about us and services pages of the website. In this system, both donors and NGOs can login into the system, and the donor will enter information about the food they want to donate via the donate button, which will be stored in our database. The NGOs will receive the token of the donation and the first one to accept the token will receive the responsibility of the further donation process.

## 3.3. Algorithm and Design

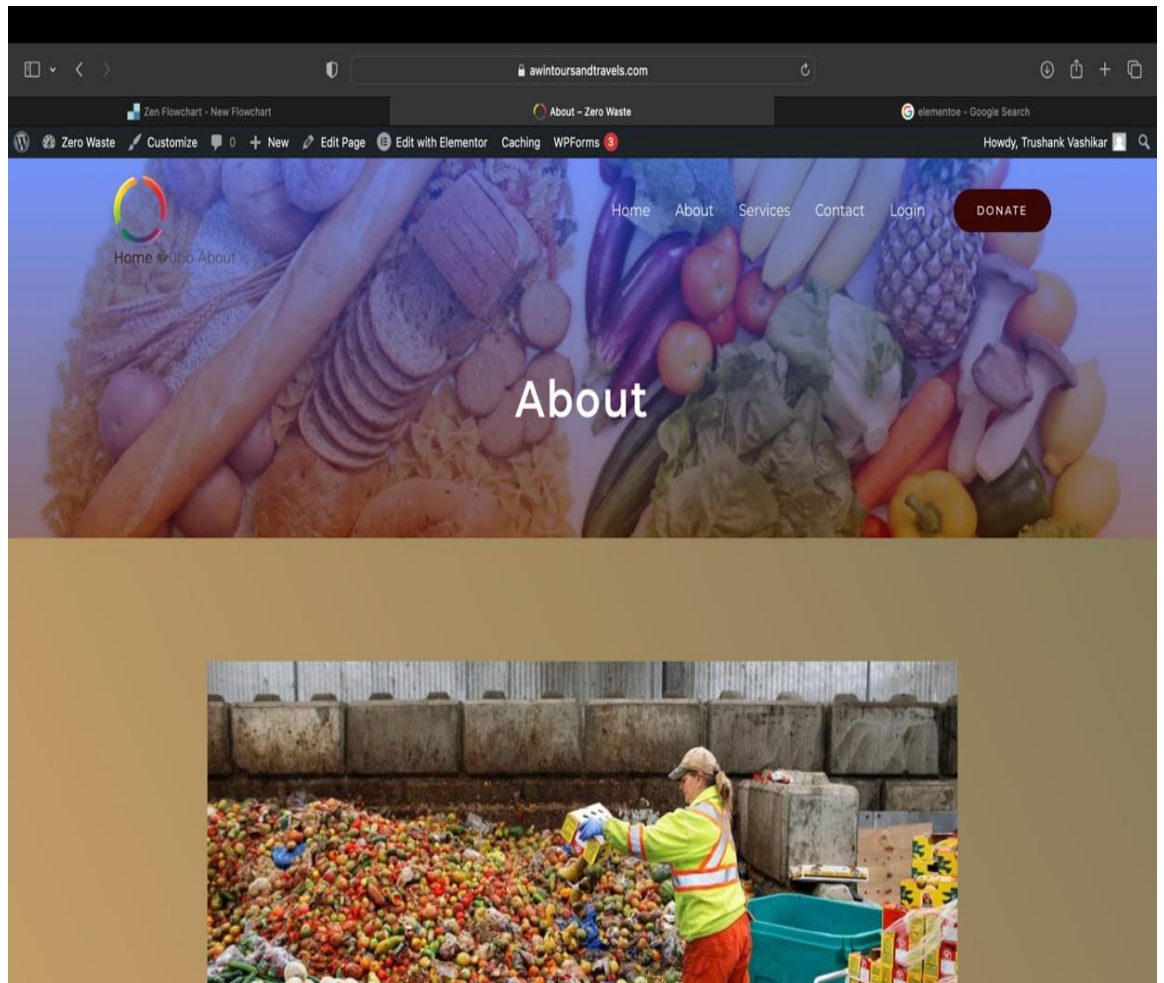
### 3.3.1 Home page



*Figure 3.3.1.1. Screenshot of Home page*

This is the design of our page . It is the dashboard and a source to all other pages in our website . Form this page we can access the brief information of what the website is about

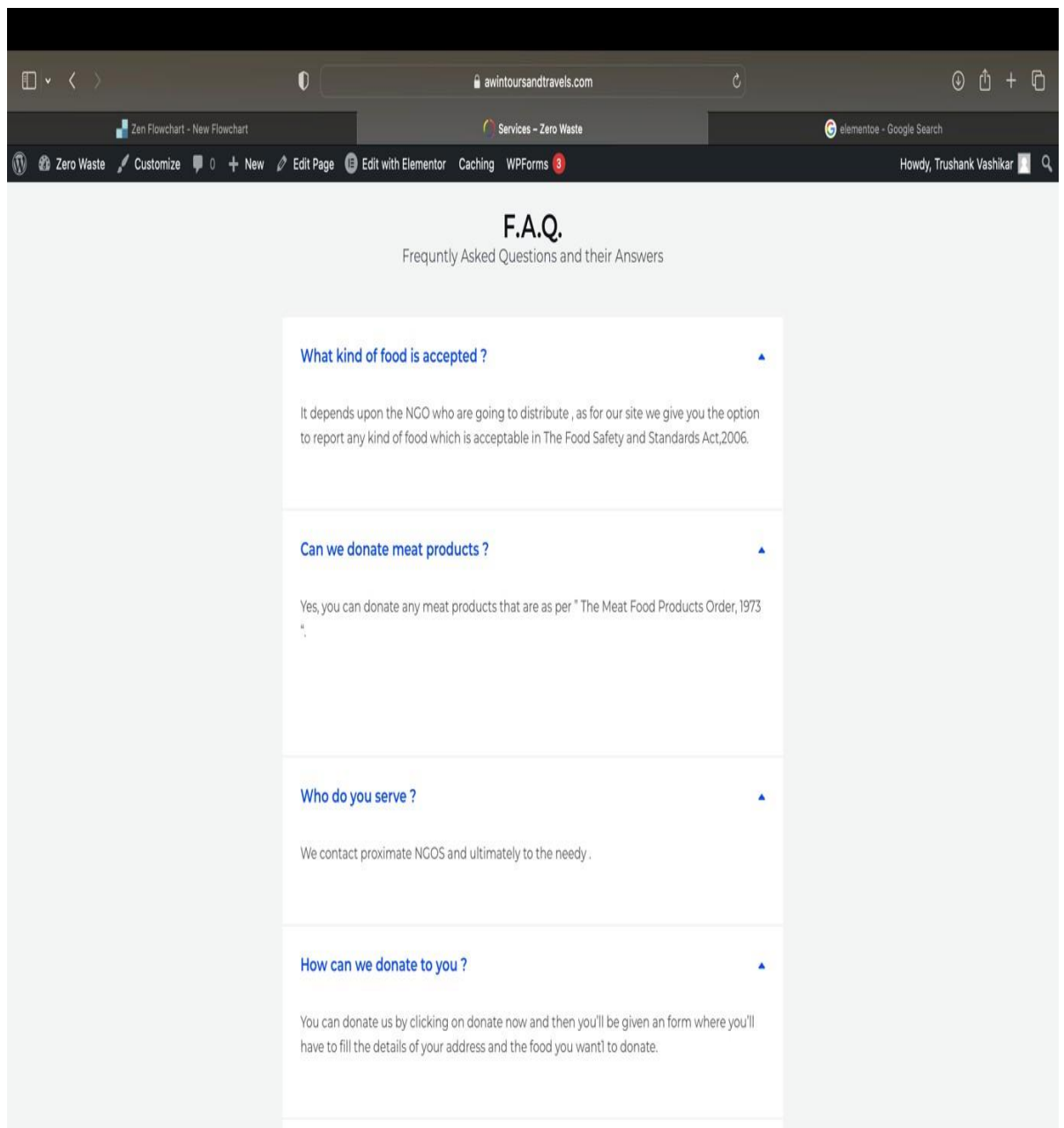
### 3.3.2 About us



*Figure 3.3.2.1. Screenshot of About page*

This is the design of our about us page . It gives the detailed information about our website . Mission and Vision are also mentioned on this page .

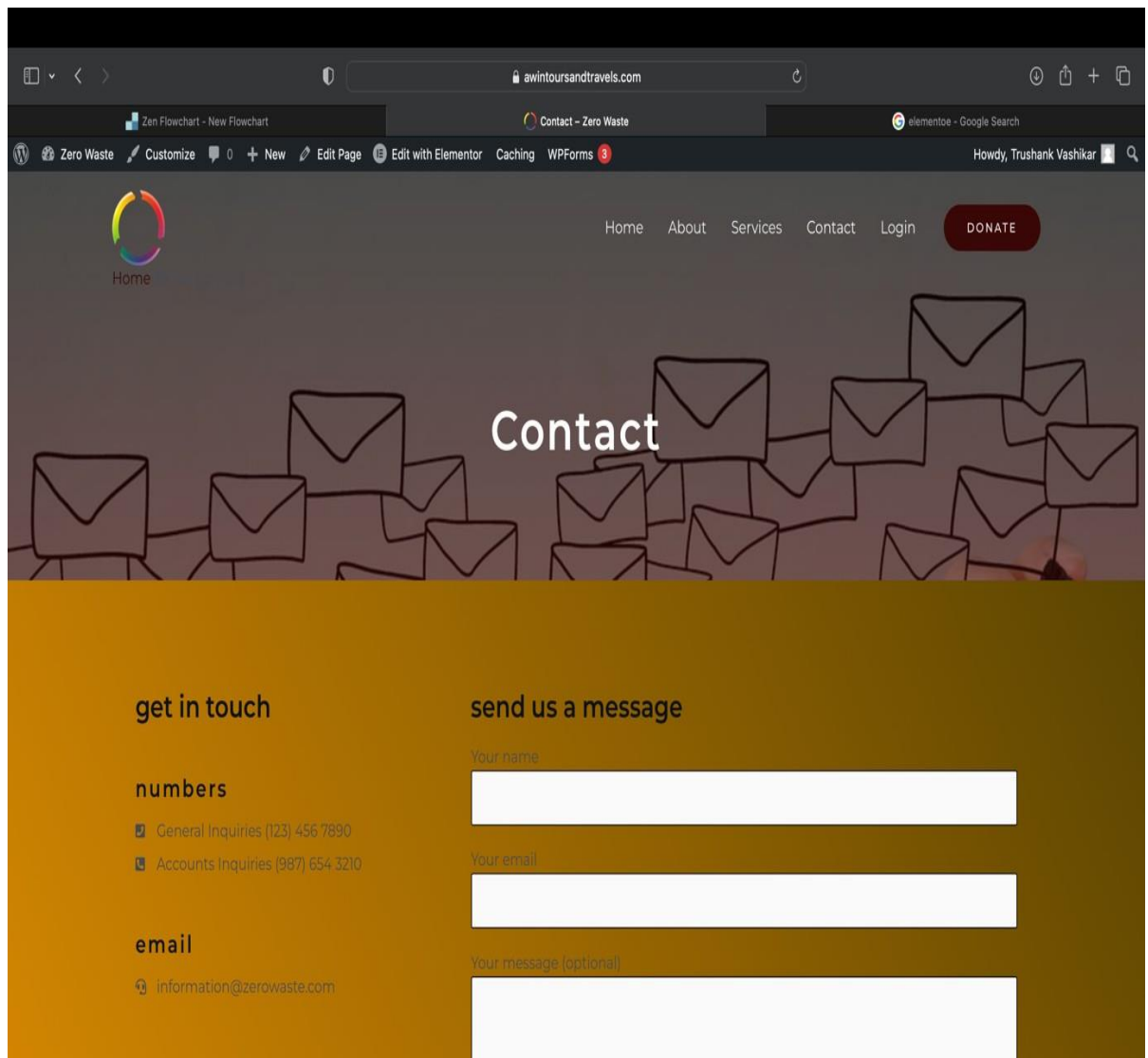
### 3.3.3. Services



*Figure 3.3.3.1. Screen Shot of Services Page*

On this page our services are described . Here we also provide detailed frequently asked questions that the users can ask . Our services are Food Composition and Food Distribution which are further explained on this page

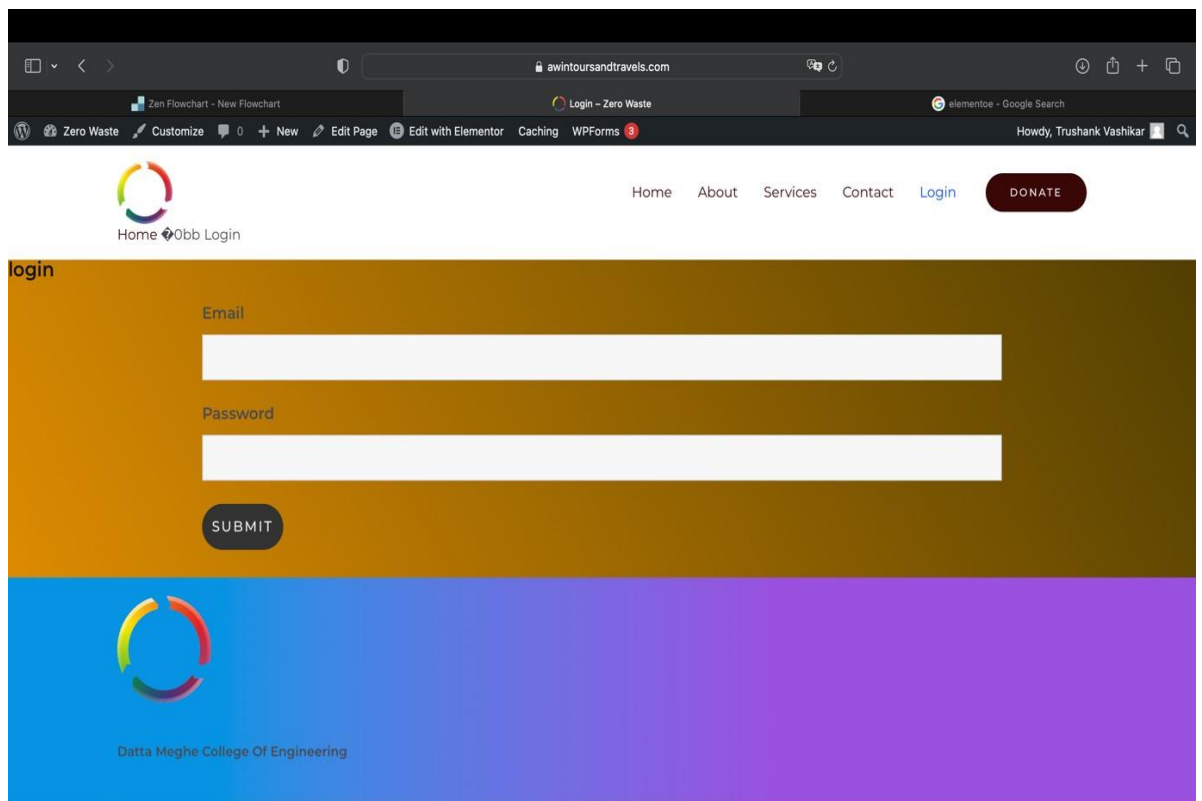
### 3.3.4. Contact



*Figure 3.3.4.1. Screenshot of Contact page*

The means to contact us have been shared on this webpage. As well as a form has been provided where any user can ask us question or contact us , message us . Also, a map of NGO is presented here .

### 3.3.5. Login



The screenshot shows a web browser window with the URL [awintoursandtravels.com](http://awintoursandtravels.com). The page title is "Login - Zero Waste". The navigation menu includes "Home", "About", "Services", "Contact", "Login", and a "DONATE" button. The login form is titled "login" and contains two input fields: "Email" and "Password". Below the password field is a "SUBMIT" button. The footer of the page features a colorful circular logo and the text "Datta Meghe College Of Engineering".

*Figure 3.3.5.1. Screenshot of Login page*

Here users can log in to our system to further access the donor and the NGO connectivity



### 3.3.6. Donate

The screenshot shows a web browser window with the URL [awintoursandtravels.com](http://awintoursandtravels.com). The page is titled "Donate - Zero Waste". The form is titled "Food Type" and includes the following fields:

- Food Type:** Radio buttons for "Veg" and "Non-Veg".
- Food:** A text input field.
- Prepared Time:** A text input field.
- Quantity(in Kgs):** A dropdown menu with "5 Kgs" selected.
- Description:** A large text area.

A red button is located at the bottom left of the form. The background of the page features a graphic of many colorful hands reaching up.

*Figure 3.3.6.1. Screenshot of Donate page*

This is our donate page where a form is presented to fill in the details of the food that is left over where the donors can give the detail of food, its prepared time, the quantity of food that is left, the type of food and further description and instructions of how the food can be stored and distributed.

### 3.3.7. Database

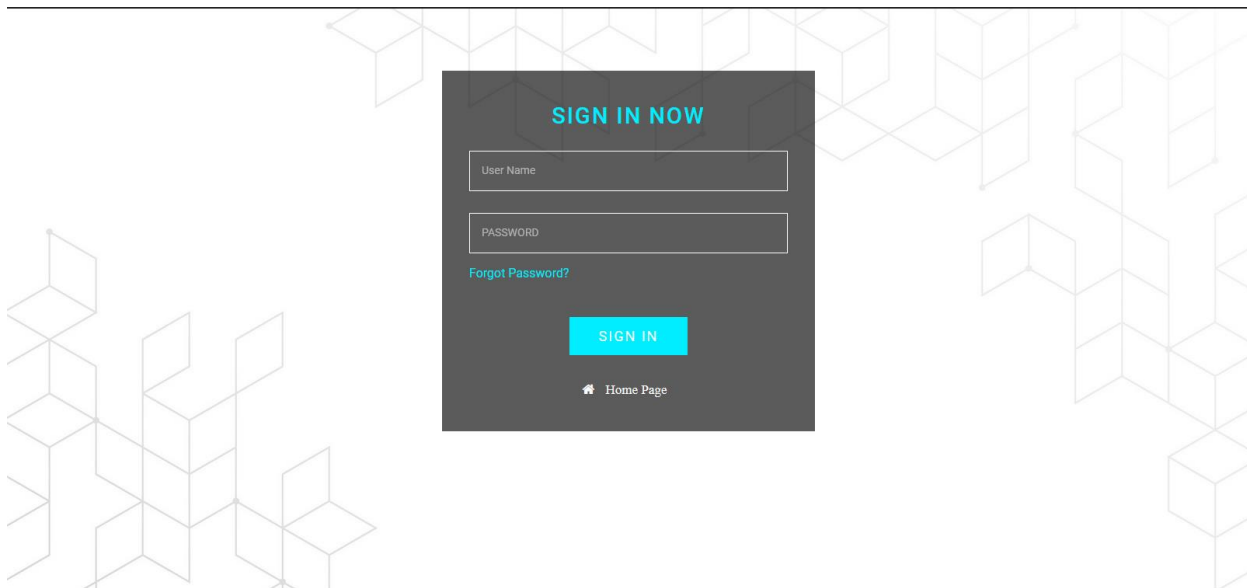
```
mysql> select * form c ;  
ERROR 1064 (42000): You have an error in your SQL syntax; check the  
mysql> select * from c ;  
+-----+-----+  
| name          | email          |  
+-----+-----+  
| Vedant Ranade | vedantrm@gmail.com |  
| Adarsh Murali | andrew123@gmail.com |  
| Shubhankar Gite | Sgite123@gmail.com |  
| trishank       | tashikar@gmail.com |  
+-----+-----+  
4 rows in set (0.00 sec)  
  
mysql>
```

*Figure 3.3.7.1. Screenshot of Database*

MySQL table showing the storage of data inputted for the website

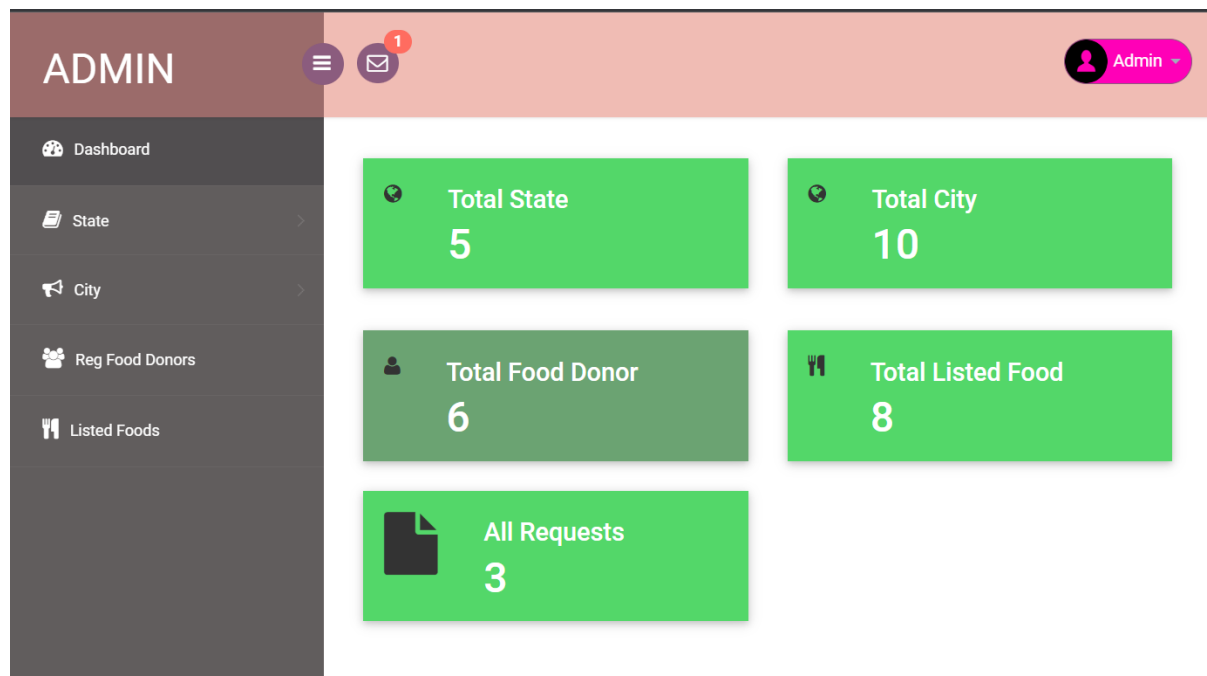
## 3.4. Mini Project 1b

### 3.4.1. Admin login



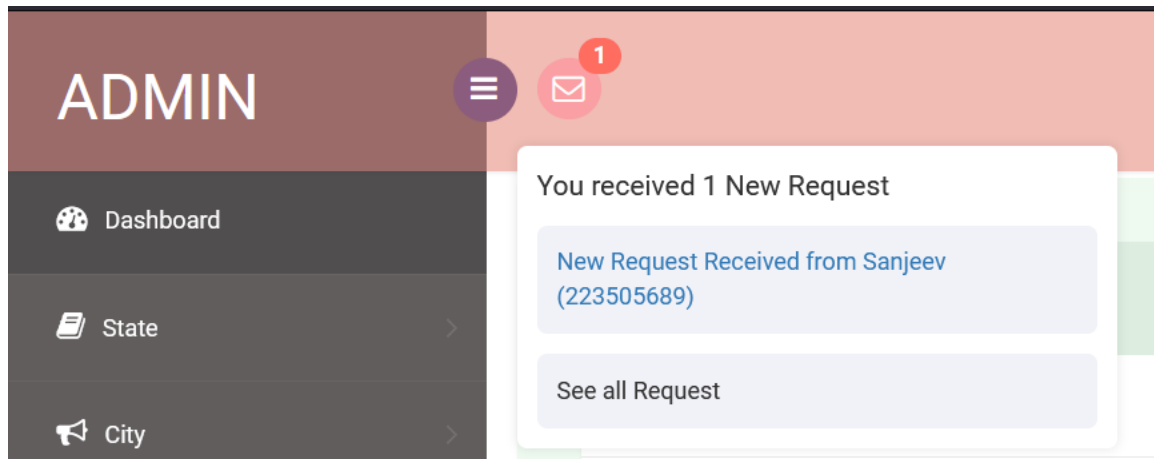
This is our admin page . It is a secure login portal that provides access to privileged information and administrative functions of a website or application. Only the Admins can sign in from these.

### 3.4.2. Admin Page




This is the admin page , in this we have the dashboard and the admin can see what requests are pending and how many deliveries delivered . The admin can access the location and the food which are available .

### 3.4.3. Request notification



Here a notification window that alerts administrators of incoming requests that require their attention. Here the admin can also see who have sent the request and whether to see other requests or not .

### 3.4.4. Food Request

FOOD DETAILS			
Food Id #330170905			
Register By	Anuj Rane	Registered Mobile Number	778412231
Registered Email	anuj@gmail.com	Contact Person	Rahul
Contact Person Moible Number	1478523699	State Name	Maharashtra
City Name	Pune	Description	its of 20 kg , its from wedding best served in 5 hours
Pick Up Date	2022-01-23	Pick Up Address	H 23423 Sector 10
Image			

This pages displays all the details of a food request which have been saved in the database . Here we cand see details like Donor's name , email id , contact no , location , address , and the details of the food which are to be donated . The admin can also see the image of the food if the donor have uploaded .

### 3.4.5. Food details

ADMIN									
<div>Dashboard</div> <div>State</div> <div>City</div> <div>Reg Food Donors</div> <div>Listed Foods</div>									
S.NO	Food Id	Register By	Register Mobile Number	Contact Person Number	Contact Person Mobile Number	Food Items	Request Date	Status	Action
1	330170905	Anuj Rane	778412231	Rahul	1478523699	Panneer Khorma	2022-01-22 14:54:51	accept	<a href="#">View Details</a>
2	372165116	Raj Kumar	1234567890	Khushbu	9874563210	Dal Maknhi	2022-12-22 15:50:35	reject	<a href="#">View Details</a>
3	244559044	Sahil Chavan	98997812311	Anuj Rane	9852364710	Chicken Biryani	2022-09-24 11:56:22	In process	<a href="#">View Details</a>
4	234234232	Raj Kumar	1234567890	Vedant Ranade	12313123112	Bundi LAddo	2023-03-15 23:44:44	reject	<a href="#">View Details</a>
5	123231212	Rahul	9090823223	Vedant	9989112312	Veg	2023-03-15	In	<a href="#">View</a>

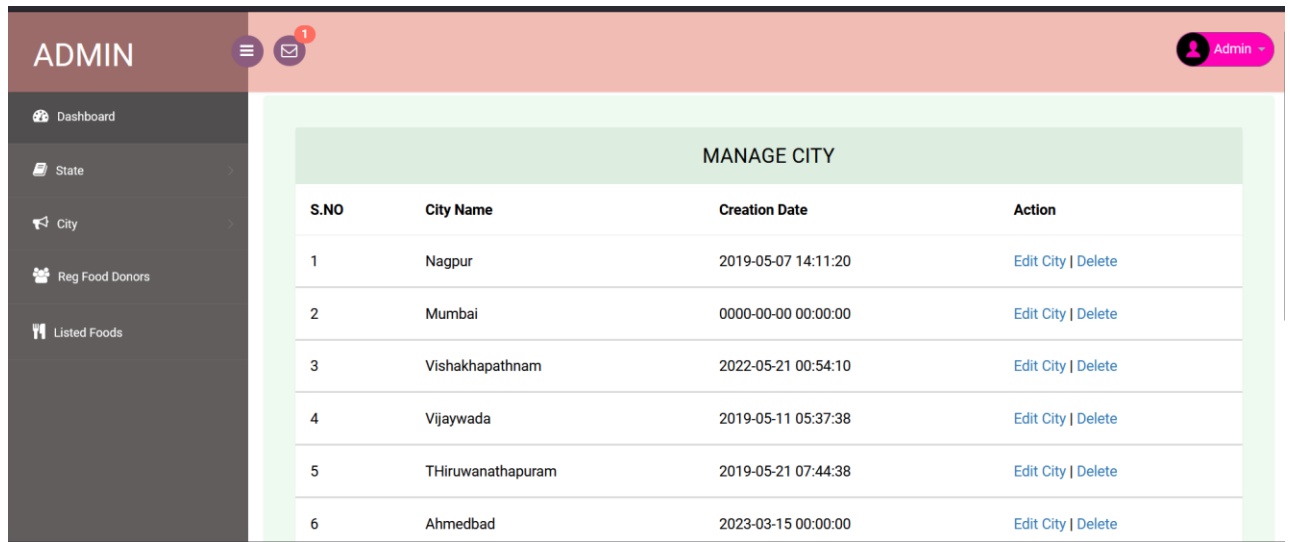
In this page the admin get to see all the details of food donations have been registered . here the admin also sees all the data like , food id , donor's name , contact number , and also the privileges in the action field where the admin can decide whether to accept the request or not .

### 3.4.6. Food Donor details

ADMIN				
<div>Dashboard</div> <div>State</div> <div>City</div> <div>Reg Food Donors</div> <div>Listed Foods</div>				
FOOD DONOR DETAILS				
S.NO	Full Name	Mobile Number	Email	Registration Date
1	Rahul Kushwaha	9090823223	rhikushwaha@gmail.com	2021-11-18 20:16:41
2	Khusbu Singh	9929334321	ksbusing@gmail.com	2022-06-18 02:42:21
3	Raj Kumar	1234567890	rjkmr@gmail.com	2021-11-10 16:42:21
4	Anuj Rane	778412231	anuj@gmail.com	2021-11-11 10:13:21
5	Sahil Chavan	98997812311	sahil@gmail.com	2022-04-21 04:55:11
6	vedant	9324526912	v@gmail.com	2023-04-16 11:00:09

This is the food donor's page where all the details on the food donor's is being displayed like the serial number , name , mobile number , email and the registration date .

### 3.4.7. City List

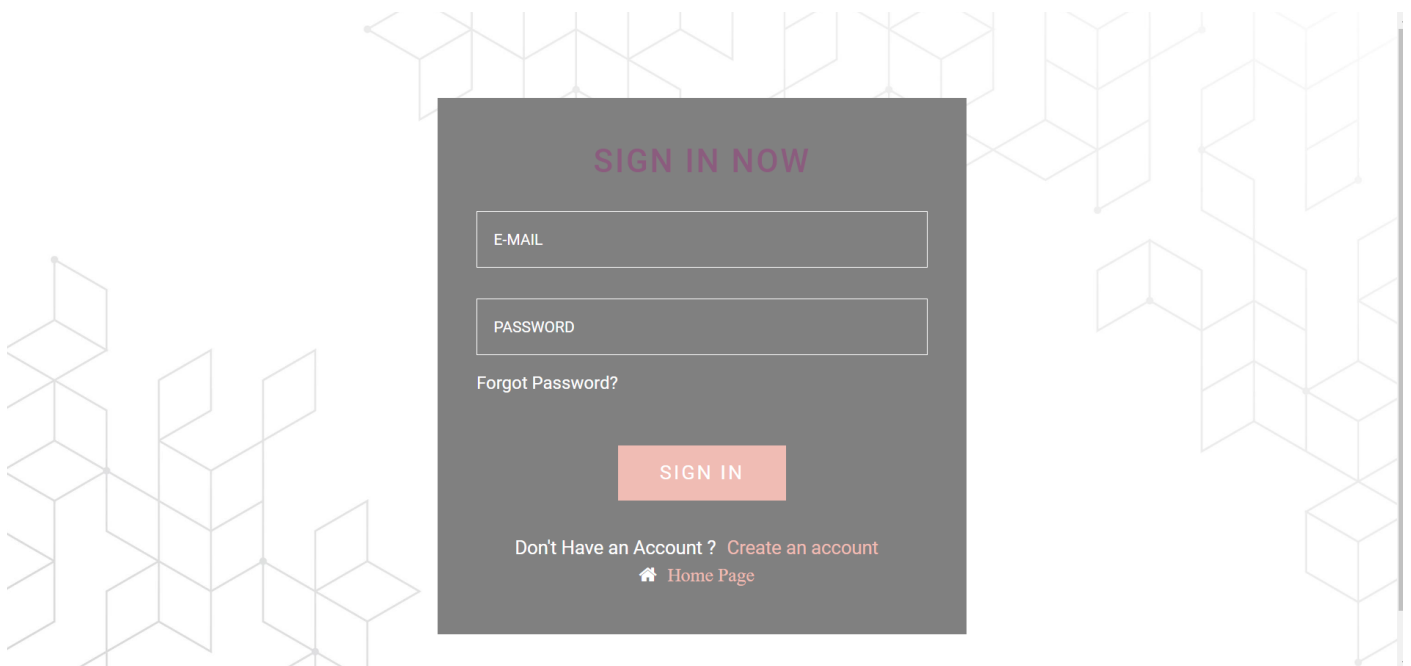


The screenshot shows the ADMIN interface with a sidebar menu on the left containing 'Dashboard', 'State', 'City', 'Reg Food Donors', and 'Listed Foods'. The main content area is titled 'MANAGE CITY' and displays a table with 6 rows of city data. Each row includes an S.NO, City Name, Creation Date, and an Action link ('Edit City | Delete').

S.NO	City Name	Creation Date	Action
1	Nagpur	2019-05-07 14:11:20	<a href="#">Edit City   Delete</a>
2	Mumbai	0000-00-00 00:00:00	<a href="#">Edit City   Delete</a>
3	Vishakhapathnam	2022-05-21 00:54:10	<a href="#">Edit City   Delete</a>
4	Vijaywada	2019-05-11 05:37:38	<a href="#">Edit City   Delete</a>
5	THiruwanaathapuram	2019-05-21 07:44:38	<a href="#">Edit City   Delete</a>
6	Ahmedbad	2023-03-15 00:00:00	<a href="#">Edit City   Delete</a>

The city list displays all registered cities, including their name, creation date, and available actions, such as editing or deleting the city record.

### 3.4.8. Donor Login



The screenshot shows a 'SIGN IN NOW' login form. It features input fields for 'E-MAIL' and 'PASSWORD', a 'Forgot Password?' link, a 'SIGN IN' button, and a footer with the text 'Don't Have an Account ? Create an account' and a 'Home Page' link with a house icon.

**SIGN IN NOW**

E-MAIL

PASSWORD

[Forgot Password?](#)

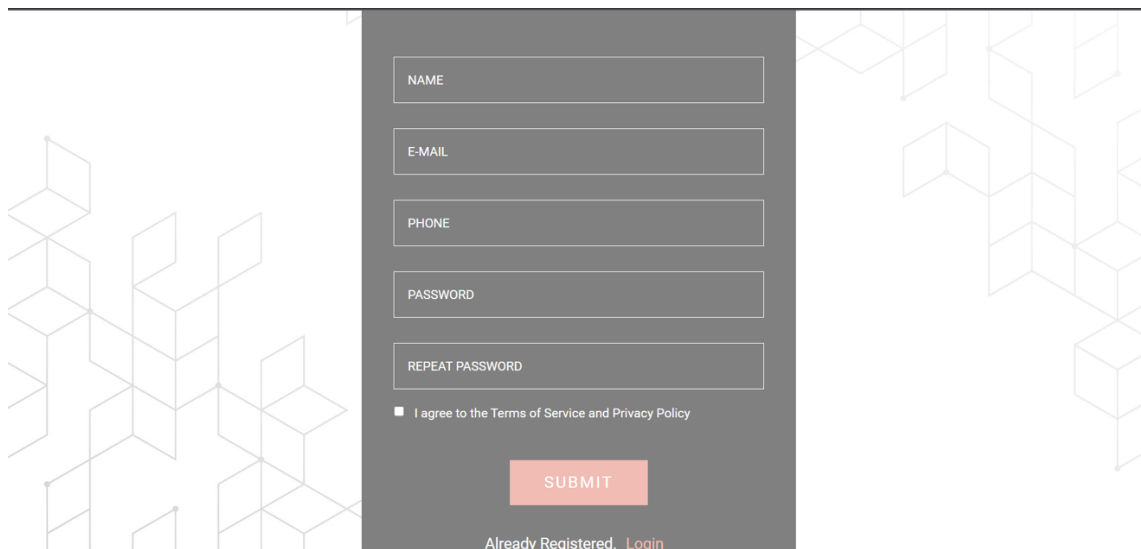
**SIGN IN**

Don't Have an Account ? [Create an account](#)

[Home Page](#)

The food donor's login page is a dedicated portal that allows registered donors to access their accounts, manage their donations, and track their contributions to the food bank. In addition to the login form, the food donor's login page features hyperlinks to the homepage of the food bank and to a registration page where new donors can create an account.

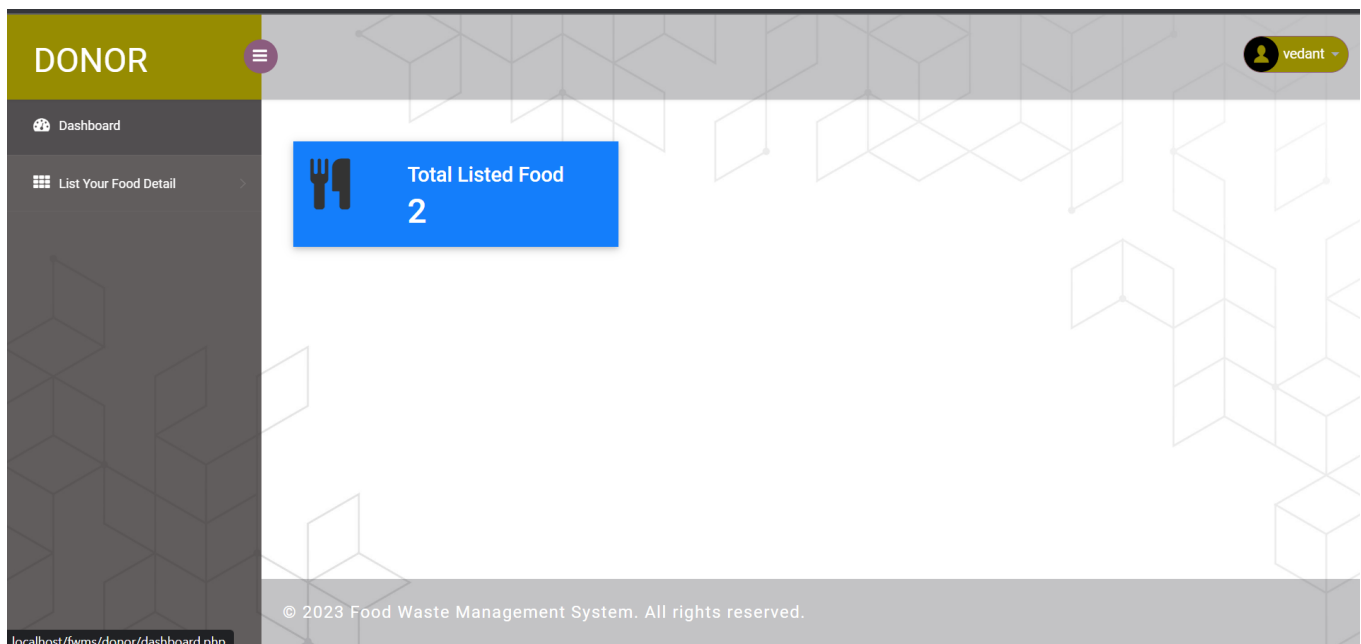
### 3.4.9. Donor Registration Page



A screenshot of a donor registration form. The form is a dark gray vertical rectangle centered on a light gray background with a faint geometric pattern. It contains five input fields: NAME, E-MAIL, PHONE, PASSWORD, and REPEAT PASSWORD. Below these fields is a checkbox labeled "I agree to the Terms of Service and Privacy Policy". At the bottom of the form is a red "SUBMIT" button. Below the button, the text "Already Registered. [Login](#)" is displayed.

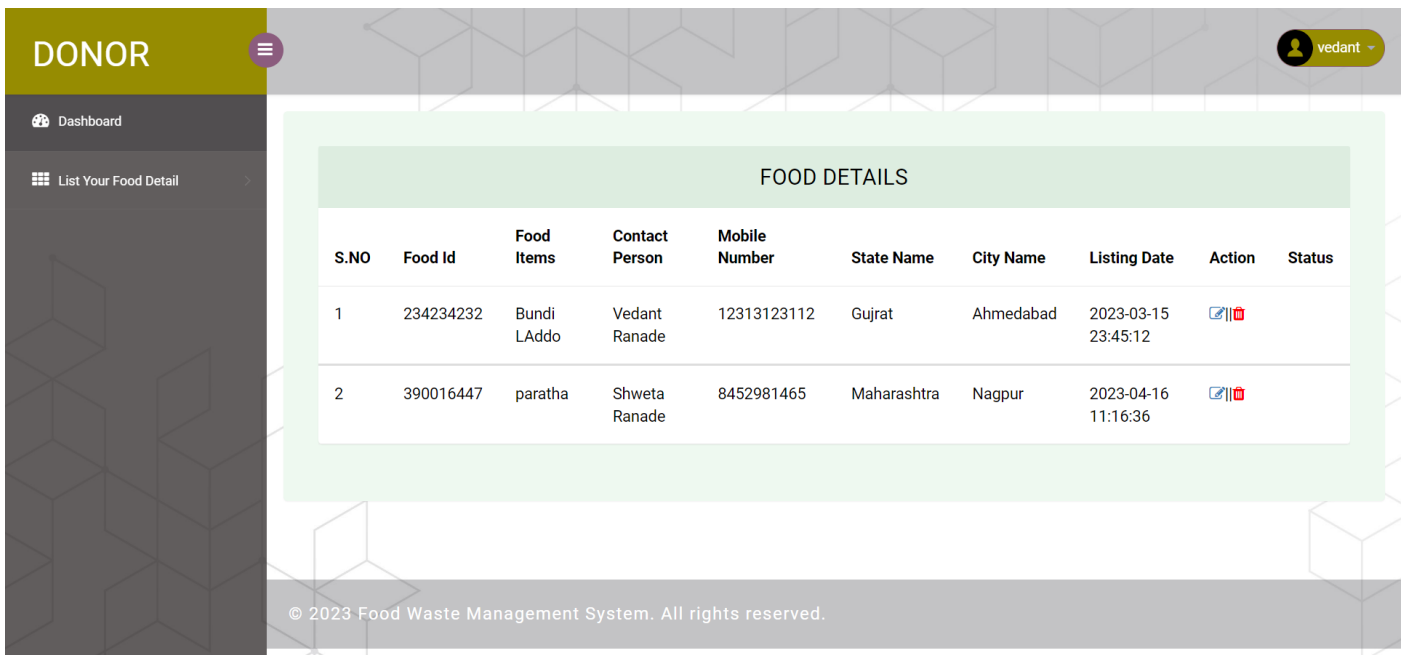
The donor registration page is a user-friendly form that collects essential information from new donors, such as their name, contact details, to facilitate the donation process and ensure a seamless experience.





### 3.4.10. Donor Page



This is the donor page where the donor will land after logging in . This will show the total listed foods of the registered user.

### 3.4.11. Registered Food List

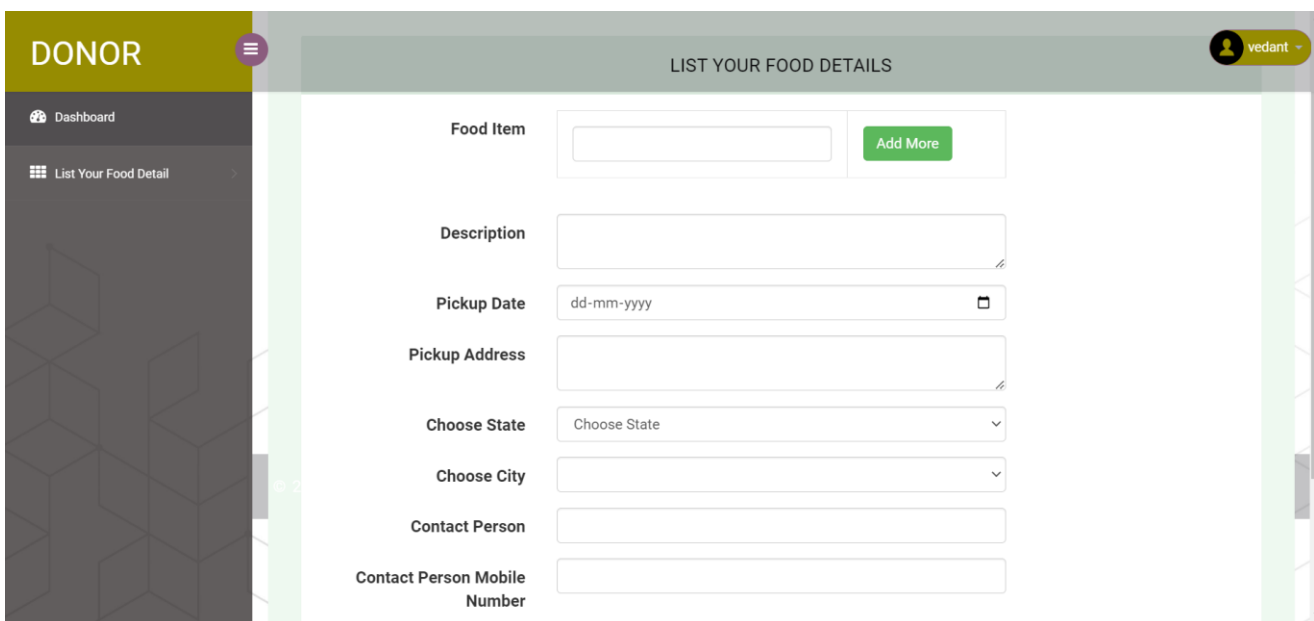


FOOD DETAILS									
S.NO	Food Id	Food Items	Contact Person	Mobile Number	State Name	City Name	Listing Date	Action	Status
1	234234232	Bundi LAddo	Vedant Ranade	12313123112	Gujrat	Ahmedabad	2023-03-15 23:45:12	 	
2	390016447	paratha	Shweta Ranade	8452981465	Maharashtra	Nagpur	2023-04-16 11:16:36	 	

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The registered food list contains detailed information about each donated item, including the food name, contact person, mobile number, state, city, listing date, available actions, such as editing or deleting the food record, and current status, indicating whether the donation is available for pickup or already claimed.

### 3.4.12. Food Add page



Food Item	<input type="text"/>	<button>Add More</button>
Description	<input type="text"/>	
Pickup Date	<input type="text" value="dd-mm-yyyy"/>	
Pickup Address	<input type="text"/>	
Choose State	<input type="text" value="Choose State"/>	
Choose City	<input type="text"/>	
Contact Person	<input type="text"/>	
Contact Person Mobile Number	<input type="text"/>	

The food add page form is a comprehensive data entry form that allows donors to provide detailed information about their food donation, including the food name, description, quantity, contact person, mobile number, state, city, and listing date.



### 3.4.13. PhP MyAdmin

<input type="checkbox"/>	tbladmin	★		Browse		Structure		Search		Insert		Empty		Drop	1	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/>	tblcity	★		Browse		Structure		Search		Insert		Empty		Drop	10	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/>	tblcontact	★		Browse		Structure		Search		Insert		Empty		Drop	4	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/>	tbldonor	★		Browse		Structure		Search		Insert		Empty		Drop	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/>	tblfood	★		Browse		Structure		Search		Insert		Empty		Drop	8	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/>	tblfoodrequests	★		Browse		Structure		Search		Insert		Empty		Drop	3	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/>	tblpages	★		Browse		Structure		Search		Insert		Empty		Drop	2	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/>	tblstate	★		Browse		Structure		Search		Insert		Empty		Drop	5	InnoDB	latin1_swedish_ci	16.0 KiB	-
8 tables		Sum													39	InnoDB	utf8mb4_general_ci	128.0 KiB	0 B

We utilized XAMPP to connect MySQL with our website, and through phpMyAdmin, we were able to access and view all the tables in our database.

### **3.5. Details of Software.**

- WordPress: WordPress is the simplest most popular way to create your own website or blog. It is an open-source content management system licensed under GPLv2, which means that anyone can use or modify the WordPress software for free.
- HTML: Hypertext Markup Language, a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages.

- CSS: Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML
- Plugins :- Various plugins has been used to connect database with the website and hosting the map
- MySQL is free open-sourced software under the terms of the GNU General Public License, and is also available under a variety of property licenses. MySQL was owned and sponsored by the Swedish company MySQL which was bought by Sun Microsystems (now Oracle)

### 3.6. Conclusion & Future Scope

Waste management can be defined as the "collection, removal, processing, and disposal of materials considered waste". Waste can be put into landfills, incinerated, recycled, or composted. The most sustainable way to manage waste is to recycle and compost. In conclusion, it is clear that food waste is caused by people in developed countries not valuing food, lack of technology and poor infrastructure in developing countries, poor distribution methods of food, as well as waste during cultivation and harvest. It has a significant effect on environment, economy and even has social impact. All these amounts of food thrown away is wasting the natural resources of this world and also lots of space is needed for landfilling.

Money is wasted when food is wasted which has economic impacts in countries all around the world. Social impacts such as different types of health effects on people of both poor countries as well as developed countries. It even gives the countries a bad impression when they have high amount of food wastage. Therefore, it is very important to take the necessary steps to prevent food waste. Campaigns can be arranged to help raise awareness, food can be recycled so that it can be converted to something else instead of going to waste and even establishing laws such as banning supermarkets from getting rid of their unsold products worldwide can help to reduce food wastage. Food waste has serious social and environmental implications, but many of us don't think twice about it. Our hope is that after learning more about this this prevalent problem, YOU will do what you can to make a difference.

Waste management's future includes turning waste into energy, IoT-enabled practices, improvement in monitoring systems, data collection, and much more technology-based advancements. Our motive is to be globally acclaimed so that it becomes a necessity rather than a novelty.

The contents of website could be updated in different language so that even the illiterate would be able to read and access all the facilities provided. There can be specific login for the people who are in desperate need of food and sign up for their turn

## Timeline

<b>Week 1</b>	Reviewing the topic
<b>Week 2</b>	Designing overview of project
<b>Week 3</b>	Learning CSS
<b>Week 4</b>	Learning Wordpress
<b>Week 5</b>	Learning Elementor
<b>Week 6</b>	Logical problem solving
<b>Week 7</b>	Login form build
<b>Week 8</b>	Contact7form build
<b>Week 9</b>	PPT presentation
<b>Week 10</b>	Ground survey
<b>Week 11</b>	Map integration
<b>Week 12</b>	Database input

*Table 3.5.1. Timeline of the project*

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