A NOVEL WEB BASED APPROACH TO REDISTRIBUTE EXCESS FOOD

MINI PROJECT REPORT

Submitted by

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in partial fulfillment for the award of the degree of

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RAJALAKSHMI ENGINEERING COLLEGE,

CHENNAI

BONAFIDE CERTIFICATE

Certified that this Report titled "**A Novel Web Based Approach To Redistribute Excess Food**" is the bonafide work of **"Karan Balaji R S (210701105), Vikram S (210701504) and Kanaga Shanmugam P (210701103)"** who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

This project introduces a web app designed to reduce food waste and help those in need by connecting food donors with local NGOs. Built with HTML, CSS, Javascript and PHP, the application provides an easy-to-use platform where people, restaurants, and businesses can post details about extra food they have. This includes information like the type of food, how much there is, when it expires, and where it's located.

NGOs can use the app to see a list of available food donations nearby. They can book the donations they need and arrange to pick them up from the donor's location. This simple process helps NGOs quickly find and collect food, saving time and resources.

The application aims to make the redistribution of surplus food more efficient, ensuring that excess food gets to those who need it and reducing waste. It includes features for real-time updates and easy communication between donors and NGOs, creating a responsive and dynamic food distribution network.

To ensure security and accountability, the app requires users to sign up and log in. By using this technology, the project not only makes food redistribution more effective but also encourages community involvement and responsibility. It empowers individuals and organizations to actively fight food waste and hunger, promoting a more sustainable and fair food system for everyone.

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Karan Balaji R S
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Kanaga Shanmugam P

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LIST OF ABBREVIATIONS

NGO	Non-Government Organization
PC	Personal Computer
FAO	Food and Agriculture Organization
HTML	Hyper Text Markup Language
PHP	Hypertext Preprocessor
GPS	Global Positioning System

CHAPTER 1
INTRODUCTION

1.1 PROBLEM STATEMENT

Food waste and food insecurity are significant issues in many communities. Surplus food from individuals, restaurants, and businesses often goes to waste while many people lack sufficient food. There is a need for an efficient system to connect food donors with local NGOs that can redistribute this surplus to those in need. Existing methods are often inefficient, time-consuming, and lack real-time coordination. This project aims to develop a user-friendly web application to streamline the donation process, reduce food waste, and ensure timely distribution to those experiencing food insecurity.

1.2 SCOPE OF THE WORK

This project involves developing a mobile application using React Native to facilitate the connection between food donors and local NGOs. The app will enable donors to post surplus food details and locations, while NGOs can view, book, and collect donations efficiently. Key features include real-time updates, user authentication, and seamless communication. The project aims to reduce food waste, improve redistribution logistics, and enhance community engagement in combating food insecurity.

1.3 AIM AND OBJECTIVE

The aim of this project is to develop a mobile application using React Native that connects food donors with local NGOs to efficiently redistribute surplus food, thereby reducing food waste and addressing food insecurity. The app will enable donors to post details and locations of excess food, and NGOs to view, book, and collect donations promptly. Key objectives include implementing real-time updates and notifications for seamless communication, ensuring secure user authentication, optimizing collection logistics based on location data, and promoting community engagement and awareness about the importance of reducing food waste and combating hunger.

1.4 RESEARCH

This project has been developed through widespread secondary research of accredited standard papers, business journals, white papers, and conference papers. Significant resources are required to achieve an efficacious completion of this project.
The following prospectus details a list of resources that will play a primary role in the successful execution of our project:

- A properly functioning workstation (PC, laptop, net-books etc.) to carry out desired research and collect relevant content.
- Unlimited internet access.
- Unrestricted access to the university lab in order to gather a variety of literature including academic resources.

1.5 MOTIVATION

Food waste and food insecurity are major issues, with vast amounts of edible food discarded while many people go hungry. This project aims to bridge this gap by developing a web application that connects food donors with local NGOs for efficient food redistribution. The motivation is to create a sustainable solution that reduces waste, alleviates hunger, and fosters community engagement. By taking advantage of technology, we aim to make it easy for individuals and businesses to donate surplus food, thereby promoting a culture of sharing and responsibility, and contributing to a more equitable and sustainable food system.

CHAPTER 2
LITERATURE SURVEY

The challenge of food waste and food insecurity has been extensively studied, with significant research highlighting its global impact. According to the Food and Agriculture Organization (FAO), approximately one-third of all food produced for human consumption is wasted each year, which amounts to about 1.3 billion tons [1]. This occurs alongside widespread food insecurity, where millions of people globally lack access to sufficient, safe, and nutritious food.

Food waste occurs at various stages of the supply chain, from production and post-harvest handling to processing, distribution, and consumption. Gustavsson et al. emphasize the critical need for strategies to minimize waste at each stage [2]. Similarly, Parfitt et al. highlight the potential for reducing waste through improved supply chain management and consumer behavior changes [4].

The redistribution of surplus food is a promising approach to addressing both food waste and food insecurity. Research by Papargyropoulou et al. advocates for a hierarchical approach to food waste management, prioritizing food redistribution to those in need over other waste management strategies [5]. Reynolds et al. further demonstrate the environmental and economic benefits of food rescue operations, underscoring their role in supporting food-insecure populations [6].

Technological advancements have facilitated more effective food redistribution. Applications like OLIO and platforms such as Feeding America leverage technology to connect food donors with recipients, showcasing the potential of digital solutions in reducing food waste and enhancing food security. Studies by Charlebois et al. and Aschemann-Witzel et al. support the use of digital tools to streamline food redistribution processes, improve efficiency, and increase the reach of food rescue initiatives [7], [8].

Our project builds on these insights by developing a web-based platform using HTML, CSS, JavaScript, and PHP to facilitate food donations. The platform is designed to streamline the donation process, making it easier for food donors to post surplus food and for NGOs to view and book these donations. By integrating features such as real-time updates, secure user authentication, and efficient logistics management, the platform aims to enhance the effectiveness of food redistribution efforts within communities.

CHAPTER 3

SYSTEM DESIGN

3.1 DEVELOPMENT ENVIRONMENT

3.1.1 HARDWARE SPECIFICATIONS

This project uses minimal hardware but in order to run the project efficiently without any lack of user experience, the following specifications are recommended

Table 3.1.1 Hardware Specifications

PROCESSOR	Intel Core i5
RAM	4GB or above (DDR4 RAM)
GPU	Intel Integrated Graphics
HARD DISK	6GB
PROCESSOR FREQUENCY	1.5 GHz or above

3.1.2 SOFTWARE SPECIFICATIONS

The software specifications in order to execute the project has been listed down in the below table. The requirements in terms of the software that needs to be pre-installed and the languages needed to develop the project has been listed out below.

Table 3.1.2 Software Specifications

FRONT END	HTML, CSS, Bootstrap, JavaScript
BACK END	Python, Php
SOFTWARES USED	Visual Studio, XAMP
DATABASE	MySQL

3.2 SYSTEM DESIGN

3.2.1 ARCHITECTURE DIAGRAM

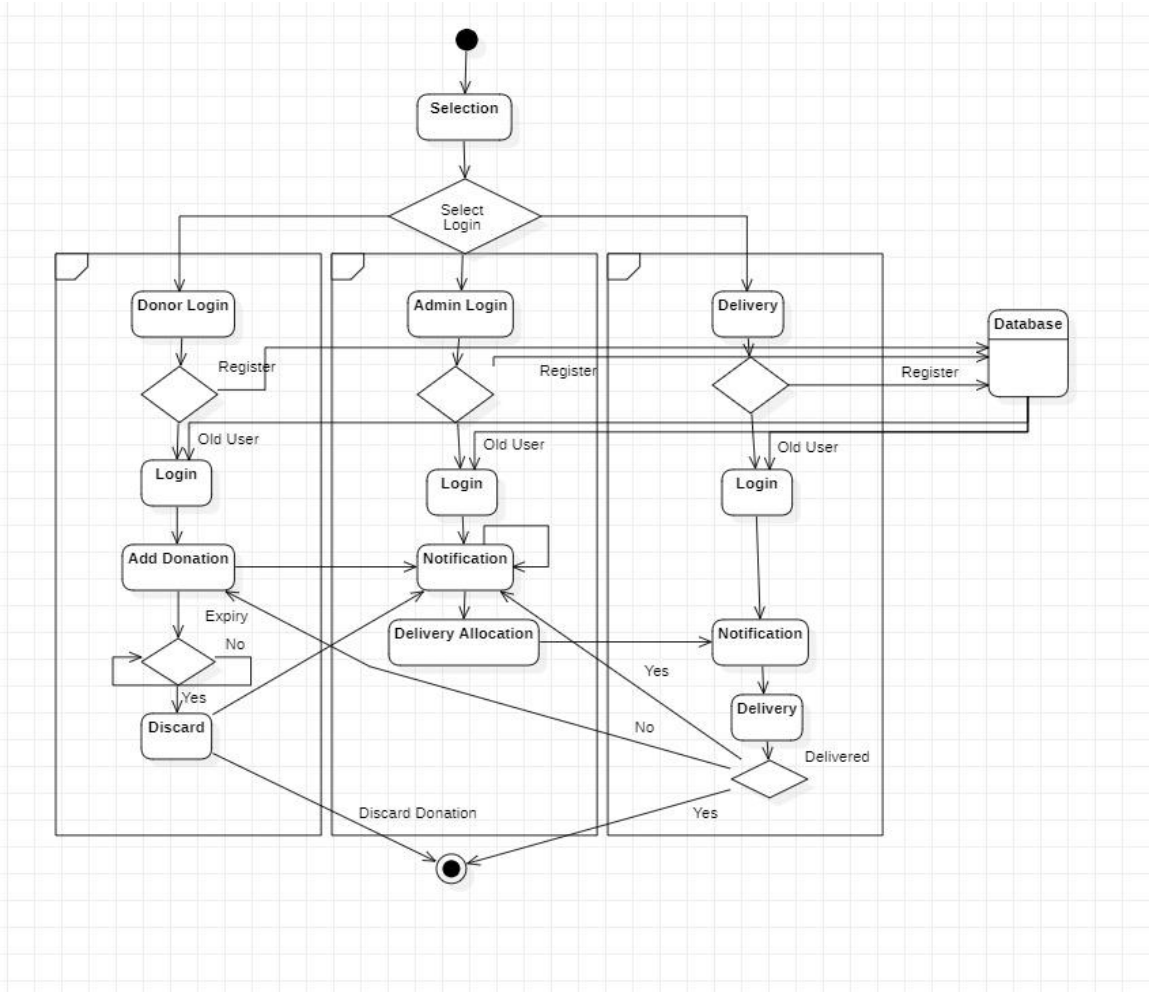

Fig 3.2.1 Architecture Diagram

The three separate modules provide distinct functionalities for each module. The donor module allows an user to login and contribute with a donation. If a donation is not booked within a specified time, it expires and is discarded out of the system. The admin module will allow the admins to manage donations and allocate them to delivery partners and the delivery module will ensure the donation reaches the specific location.

CHAPTER 4

PROJECT DESCRIPTION

4.1 METHODOLOGY

The methodology for our web development project to facilitate food donations involves using HTML, CSS, JavaScript, and PHP to create an efficient and user-friendly platform. Our approach begins with identifying the key user groups: food donors, NGOs, and delivery personnel, and understanding their specific requirements. We start by gathering detailed requirements from stakeholders and planning the application structure, including defining user roles, features, and the overall workflow.

The design phase involves using HTML and CSS to create an intuitive and accessible user interface. Wireframes and prototypes are developed to visualize the application's layout and user experience. Backend development is carried out using PHP, where we set up a secure user authentication system, handle data storage, and manage communication between different modules. The backend processes the data, handles donations, and facilitates interactions between donors, NGOs, and delivery personnel.

For the frontend development, JavaScript is used to create dynamic and interactive elements on the web pages, including forms for food donations, lists of active donations, and booking functionalities for NGOs. JavaScript ensures a smooth user experience by enabling real-time updates and interactions. We then integrate all components to build a cohesive application that allows food donors to post donations, NGOs to view and book donations, and delivery personnel to manage pickups and drop-offs.

Throughout the development process, we conduct continuous testing to ensure the application is secure, reliable, and performs well across different devices and browsers. User feedback is gathered to make iterative improvements, ensuring the final product meets the needs of all stakeholders. This comprehensive approach ensures a robust and efficient platform that effectively reduces food waste and helps address food insecurity.

4.2 MODULE DESCRIPTION

4.2.1 USER MODULE:

The User module is for people who want to donate their extra or leftover food to help reduce food waste. It accepts donations from places like marriage halls, restaurants, or individuals. Users can register, log in, and donate food through this module. They can choose the type and amount of food they want to donate, and the system will match their donation with nearby people or organizations in need. Users can also see a list of their past donations. The information from the User module is sent to Admin module for further processing.

4.2.2 ADMIN MODULE:

The Administrator module is for trusts, NGOs, and charities registered on the platform. It helps system administrators manage the food distribution process. When users donate food, the admin module gets this information and lists it for NGOs and charities to choose from. Admins can view and manage the list of received donations, including the type and amount of food. NGOs and charities can select the donations they need and request a pickup through the Delivery module. The admin module tracks these requests and keeps records of which organizations have received which donations.

4.2.2 DELIVERY PERSON MODULE:

The Delivery Person module is for people who want to help with the food donation process by providing pickup and delivery services. Delivery personnel can register on the platform. This module allows them to see which NGOs and charities need food donations picked up and dropped off. It shows the pickup and drop-off locations for each food donation, making it easy for delivery personnel to provide their services.

CHAPTER 5

IMPLEMENTATION AND RESULTS

5.1 IMPLEMENTATION

Fig 5.1.1 Landing Page

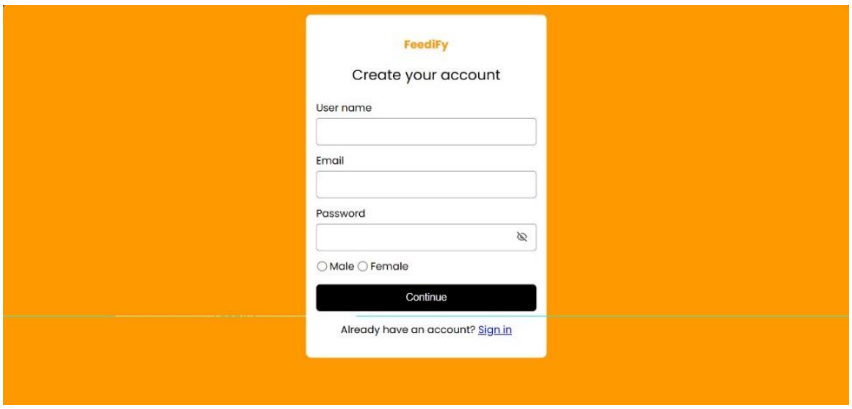

Fig 5.1.2 Registration Page

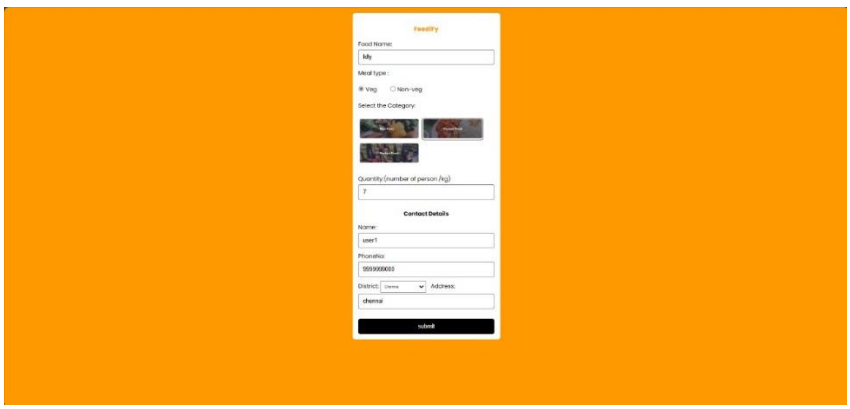

Fig 5.1.3 Donation Page

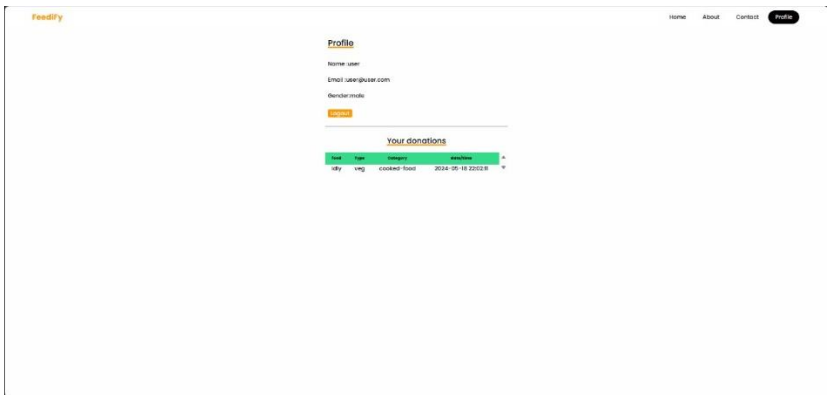

Fig 5.1.4 Your Donations Page

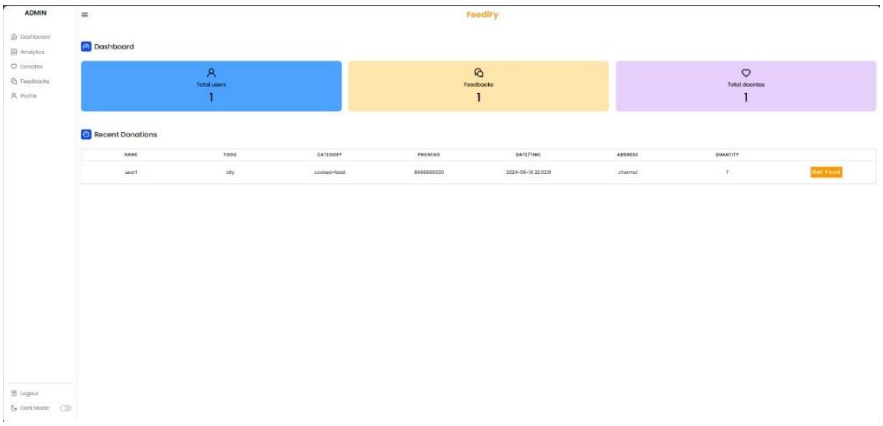

Fig 5.1.5 Admin Page

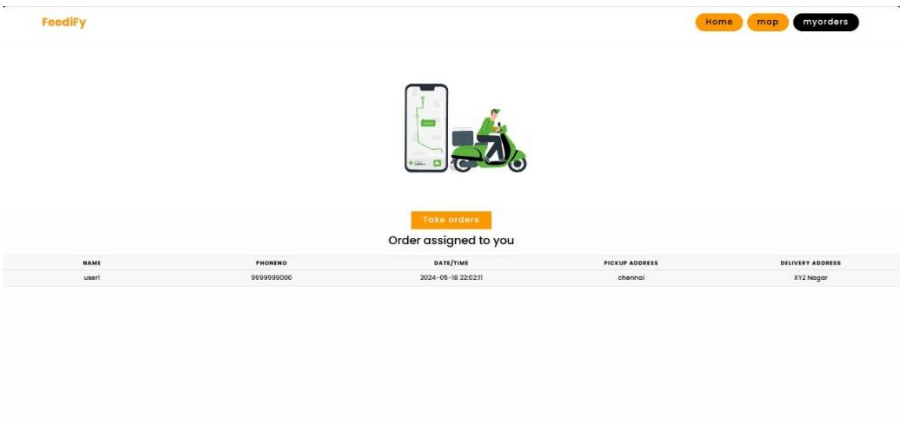

Fig 5.1.6 Delivery Person Page

5.2 RESULT

The project successfully developed a mobile application using React Native to connect food donors with local NGOs, facilitating efficient redistribution of surplus food. Users can easily register, log in, and donate excess food by specifying its type and quantity. The system matches these donations with nearby NGOs and charities. The Administrator module manages the distribution process, listing available donations and tracking which organizations have received them. The Delivery Person module coordinates the pickup and delivery of donations, ensuring timely and accurate distribution. This application helps reduce food waste and address food insecurity by creating a seamless, community-driven food redistribution network.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENTS

6.1 CONCLUSION

This project successfully addresses the critical issues of food waste and food insecurity by developing a comprehensive web application using HTML, CSS, JavaScript, and PHP. The application provides a user-friendly platform where food donors, including individuals, restaurants, and businesses, can post details about their surplus food, specifying the type, quantity, and location. Local NGOs can access this information, view active donations, and book the ones they need for collection.

The Administrator module plays a crucial role in managing the food distribution process, receiving donation details from the User module, listing available donations for NGOs, and tracking which organizations have taken which donations. This ensures an organized and efficient redistribution system. Additionally, the Delivery Person module coordinates the logistics of picking up and delivering the donations, displaying the pickup and drop-off locations to ensure timely and accurate distribution.

Through this web application, the project significantly reduces food waste and enhances food security by streamlining the donation process and making it easier for surplus food to reach those in need. It fosters community engagement and responsibility, encouraging individuals and businesses to participate in creating a more sustainable and equitable food system. By leveraging web technologies, the project creates a robust and efficient network for food redistribution, benefiting both donors and recipients.

6.2 FUTURE ENHANCEMENTS

To further improve the web application, several future enhancements are planned. Developing mobile applications for iOS and Android will increase accessibility and convenience for users. Real-time GPS tracking for delivery personnel will allow for monitoring of donations during transit, ensuring timely deliveries. Introducing a user feedback system will enhance trust and reliability within the network by allowing donors, NGOs, and delivery personnel to rate and review each other. Automated SMS and email notifications will keep users informed about donation statuses and updates.

APPENDIX

SOURCE CODE:

Login.php:

```
<?php
session_start();
include 'connection.php';
// $connection = mysqli_connect("localhost:3307", "root", "");
// $db = mysqli_select_db($connection, 'demo');
if (isset($_POST['sign'])) {
  $email = $_POST['email'];
  $password = $_POST['password'];
  $sanitized_emailid =  mysqli_real_escape_string($connection, $email);
  $sanitized_password =  mysqli_real_escape_string($connection, $password);
  // $hash=password_hash($password,PASSWORD_DEFAULT);

  $sql = "select * from login where email='$sanitized_emailid'";
  $result = mysqli_query($connection, $sql);
  $num = mysqli_num_rows($result);
  if ($num == 1) {
    while ($row = mysqli_fetch_assoc($result)) {
      if (password_verify($sanitized_password, $row['password'])) {
        $_SESSION['email'] = $email;
        $_SESSION['name'] = $row['name'];
        $_SESSION['gender'] = $row['gender'];
        header("location:home.html");
      } else {
        // echo "<h1><center> Login Failed incorrect password</center></h1>";
      }
    }
  } else {
    echo "<h1><center>Account does not exists </center></h1>";
  }
}
?>
```

Home.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Food Donate</title>
    <link rel="stylesheet" href="home.css">
```

```
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">
</head>
<body>
    <header>
        <div class="logo"><b style="color: #ff9900;">FeediFy</b></div>
        <div class="hamburger">
            <div class="line"></div>
            <div class="line"></div>
            <div class="line"></div>
        </div>
        <nav class="nav-bar">
            <ul>
                <li><a href="#home" class="active">Home</a></li>
                <li><a href="about.html" >About</a></li>
                <li><a href="contact.html" >Contact</a></li>
                <li><a href="profile.php" >Profile</a></li>
                <!-- <li ><a href="fooddonate.html"  >Donate</a></li> -->
            </ul>
        </nav>
    </header>
    <script>
        hamburger=document.querySelector(".hamburger");
        hamburger.onclick =function(){
            navBar=document.querySelector(".nav-bar");
            navBar.classList.toggle("active");
        }
    </script>
    <section class="banner">
        <a href="fooddonateform.php">Dontae Food</a>
    </section>
    <div class="content">
        <!-- <h2>Love Food</h2>
        <h3>Hate Wasting</h3> -->
        <p style="font-size: 23px;">
            “Cutting food waste is a delicious way of saving money, helping to feed the world and protect the planet.”
        </p>

    </div>
    <div class="photo">
        <br>
        <p class="heading">Our Works</p>
        <br>
        <p style="font-size: 28px; text-align: center;">"Look what we can do together."</p>
       <br>
        <div class="wrapper">
          <div class="box"><img src="img/p1.jpeg" alt=""></div>
          <div class="box"><img src="img/p4.jpeg" alt=""></div>
          <div class="box"><img src="img/p3.jpeg" alt=""></div>
        </div>
```

```
      <!-- <p style="font-size: 19px;"> The basic concept of this project  Food Waste Management is to collect theexcess/leftover food from donors such as hotels, restaurants, marriage halls, etc and distribute to  the  needy people .
      </p> -->
      <br>




   </div>
   <div class="deli" style="display: grid;" >
     <p class="heading">DOOR PICKUP</p>
     <br>
     <p  class="para">"Your donate will be immediately collected and sent to needy people "</p>
     <img src="img/delivery.gif" alt="" style="margin-left:auto; margin-right: auto;">

   </div>
   <div class="ser">
     <!-- <p class="heading">Our Services</p> -->

   </div>
   <footer class="footer">
      <div class="footer-left col-md-4 col-sm-6">
        <p class="about">
          <span> About us</span>The basic concept of this project  Food Waste Management is to collect the excess/leftover  food from donors such as hotels, restaurants, marriage halls , etc and distribute to  the  needy people .
     </p>

      </div>
      <div class="footer-center col-md-4 col-sm-6">
        <div>
          <p><span> Contact</span> </p>

        </div>
        <div>

          <p> (+00) 0000 000 000</p>

        </div>
        <div>
          <!-- <i class="fa fa-envelope" style="font-size: 17px;
          line-height: 38px; color:white;"></i> -->
          <p><a href="#"> Fooddonate@gmail.com</a></p>
        </div>

        <div class="sociallist">
          <ul class="social">
          <li><a    href="https://www.facebook.com/TheAkshayaPatraFoundation/"><img src="https://i.ibb.co/x7P24fL/facebook.png"></a></li>
```

```
          <li><a                    href="https://twitter.com/globalgiving"><img
src="https://i.ibb.co/Wnxq2Nq/twitter.png"></a></li>
          <li><a                    href="https://www.instagram.com/charitism/"><img
src="https://i.ibb.co/ySwtH4B/instagram.png"></a></li>
          <li><a href="https://web.whatsapp.com/"><i class="fa fa-whatsapp" style="font-
size:50px;color: black;"></i></a></li>
         </ul>
        </div>
       </div>
       <div class="footer-right col-md-4 col-sm-6">
        <h2><span>FeediFy</span></h2>
        <!-- <h2>Food donate</h2> -->
        <p class="menu">
         <a href="#"> Home</a> |
         <a href="about.html"> About</a> |
         <a href="profile.php"> Profile</a> |
         <a href="contact.html"> Contact</a>
        </p>
        <p class="name">FeediFy &copy 2023</p>
       </div>
     </footer>


</body>
</html>
```

Login.js:

```
const container = document.querySelector(".container"),
     pwShowHide = document.querySelectorAll(".showHidePw"),
     pwFields = document.querySelectorAll("#password"),
     signUp = document.querySelector(".signup-link"),
     login = document.querySelector(".login-link");

   //   js code to show/hide password and change icon
   pwShowHide.forEach(eyeIcon =>{
      eyeIcon.addEventListener("click", ()=>{
         pwFields.forEach(pwField =>{
            if(pwField.type ==="password"){
               pwField.type = "text";

               pwShowHide.forEach(icon =>{
                  icon.classList.replace("uil-eye-slash", "uil-eye");
               })
            }else{
               pwField.type = "password";

               pwShowHide.forEach(icon =>{
                  icon.classList.replace("uil-eye", "uil-eye-slash");
               })
```

```
            }
        })
    })
})

// js code to appear signup and login form
signUp.addEventListener("click", ( )=>{
    container.classList.add("active");
});
login.addEventListener("click", ( )=>{
    container.classList.remove("active");
});
```

About.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <link rel="stylesheet" href="home.css">
</head>
<body>
    <header>
        <div class="logo"><b style="color: #ff9900;">FeediFy</b></div>
        <div class="hamburger">
            <div class="line"></div>
            <div class="line"></div>
            <div class="line"></div>
        </div>
        <nav class="nav-bar">
            <ul>
                <li><a href="home.html" >Home</a></li>
                <li><a href="#about" class="active" >About</a></li>
                <li><a href="contact.html" >Contact</a></li>
                <li><a href="profile.php" >Profile</a></li>
            </ul>
        </nav>
    </header>
    <script>
        hamburger=document.querySelector(".hamburger");
        hamburger.onclick =function(){
            navBar=document.querySelector(".nav-bar");
            navBar.classList.toggle("active");
        }
    </script>
    <style>
```

```
    .coverc{
      width: 100%;
      height: 400px;
      background:url('img/about3.jpg')no-repeat;
background-size: cover;
display: grid;
place-items:center;
padding-top: 8rem;

    }
    .title{
      font-size: 38px;
      text-align: center;
      align-items: center;
    }

    .para p{
        font-size: 23px;
        margin-left: 20px;
        margin-right: 20px;
    }
      @media (max-width: 767px) {
        .para p{
           font-size: 16px;
           /* margin-left: 10px; */
          }
        #pptslide{
            height: 200px;
            width: 300px;

        }
        #map{
          height: 200px;
            width: 300px;


        }
        #overview{
          height: 200px;
            width: 300px;
        }

    .title{
      font-size: 28px;
      margin: 10px;
      text-align: center;
      align-items: center;
    }
```

```
        }

    </style>
    <br>
    <br>
    <!-- <section class="coverc">


    </section> -->Donate
    <p class="title">"Welcome to <u>FeediFy</u> "</p>
    <br>
    <br>
    <br>
       <p class="heading">About us</p>
       <!-- <p  style=" font-size:30px ; text-align: center;" > ABOUT <span>US</span>
</p> -->

       <!-- <br> -->
      <div class="para">
       <!-- <p>"Welcome to Food Donate, India's largest and most trusted donating platform that connects donors to verified nonprofits. FoodDonate helps you become a ray of hope for people in need. Choose a cause that is close to your heart and join hands with millions of donors like you who aim to make this world a better place."</p> -->

       <p>We are a team of passionate individuals committed to addressing the issue of food waste in India. Our goal is to create a system that connects food donors with charities and NGOs, while also reducing the environmental impact of food waste.</p>
      </div>
      <br>
      <br>
<div class="map"  style="  text-align: center; padding-bottom: 50px;" >
<p  style=" font-size:30px ;" > Location  </p>
<iframe
src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d3930.2518547826
976!2d78.14534951744383!3d9.912970000000008!2m3!1f0!2f0!3f0!3m2!1i1024!2i76
8!4f13.1!3m3!1m2!1s0x3b00c5077610d357%3A0x69066b558478379a!2sThiagarajar
%20College!5e0!3m2!1sen!2sin!4v1677633156837!5m2!1sen!2sin"          width="777"
height="473" style="border:0;" allowfullscreen="" loading="lazy" referrerpolicy="no-
referrer-when-downgrade" id="map"></iframe>
    </div>
    <!-- <p class="heading"> Our Story</p>
    <div class="para">
      <p>Our journey began with a realization that food waste is a significant problem in India. According to a report by the United Nations, India is the world's second-largest food producer, yet it also has one of the highest rates of food waste. This waste has a significant impact on the environment, as well as on food security in the country.</p>
</body>
</html>
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