VIT Hostel food waste management System

J COMPONENT FINAL REPORT

Submitted in the fulfilment for the J

Component of

INTERNET AND WEB PROGRAMMING

in

B.Tech. Computer Science and Engineering

by

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1. INTRODUCTION

1.1 PURPOSE

Our main purpose of this project is to make a user friendly and efficient web application for managing food waste in mess and to help the needy. Around 67 million tons of food is wastedin India every year and roughly one third of the food produced in the world for human consumptionevery year gets wasted. And hence the food sharing system is implemented so that food wastage is less.

1.2 SCOPE

To design and develop an interactive system for users to manage the food waste that occurs in mess.

It is within the scope of the Software Requirements Specification to describe the specific system requirements of the food sharing project. This would include performance requirements, system constraints. Any specific detail that is needed about the standards or technology used to define these requirements, constraints.

It is also outside the scope of this document to describe in any detail at all how certain mentioned standards or technologies work and operate.

1.3 REFERENCES

NAME	**REFERENCES**
SIMPLE MAIL TRANSFER PROTOCOL	https://www.javatpoint.com/simple-mail-transfer-protocol#:~:text=SMTP%20stands%20for%20Simple%20Mail,based%20on%20e%2Dmail%20addresses.
BCRYPT HASHING	https://www.geeksforgeeks.org/how-to-use-bcrypt-for-hashing-passwords-in-php/#:~:text=The%20bcrypt%20is%20a%20password,create%20a%20new%20password%20hash.
HASHING PASSWORDS	https://danboterhoven.medium.com/why-you-should-use-bcrypt-to-hash-passwords-af330100b861
USE OF SESSION STORAGE IN PHP	https://www.w3schools.com/php/php_sessions.asp

1.4 DATA DICTIONARY

Data Dictionary Attribute	**Detail**
Name	NGO user’s data
Aliases	NGO details
Where used / How used	To store details of NGO type of users. To login / register a user as NGO type and then view the system according to it.
Description	Id - int (5) - UNIQUE - NOT NULL - stores the id of the NGO
	Name - varchar (30) - NOT NULL - stores the name of the NGO
	Email - varchar (50) - NOT NULL - stores the email address of the NGO
	Address - varchar (60) - NOT NULL - stores

	the address of the NGO
	Phno - varchar (10) - NOT NULL - stores the primary phone no of the NGO
	Phno2 - varchar (10) - stores the secondary phone no of the NGO
	Pass - varchar (70) - NOT NULL - stores the 60 char long hashed password of the NGO user

Data Dictionary Attribute	**Detail**
Name	Mess user’s data
Aliases	Mess details
Where used / How used	To store details of Mess type of users.To login / register a user as NGO type and then view the system according to it.
Description	rid – int (5) - UNIQUE - NOT NULL - stores the id of the Mess
	rname – varchar (30) - NOT NULL - stores the name of the Mess
	remail – varchar (50) - NOT NULL - stores the email address of the Mess
	raddress – varchar (60) - NOT NULL - stores the address of the Mess
	rphno – varchar (10) - NOT NULL - stores the primary phone no of the Mess
	rphno2 – varchar (10) - stores the secondary phone no of the Mess
	rpass – varchar (70) - NOT NULL - stores the 60 char long hashed password of the Mess user

Data Dictionary Attribute	**Detail**
Name	Food item data
Aliases	food item
Where used / How used	To store details of all food items, present in the system. Data is added here once a mess adds it.Data from here is used to view the NGO for selection. This data is viewed in the histories of both NGOs and Mess.
Description	fid – int (8) - UNIQUE - NOT NULL - stores the id of food item
	ftype – varchar (30) - NOT NULL - stores the type of food item
	fname – varchar (30) - NOT NULL - stores the name of food item
	fquantity – int (5) - NOT NULL - stores the quantity of food item
	fweight- int (5) - NOT NULL - stores the total weight of food item
	fcooktime - datetime - NOT NULL - stores the date and time when food item was cooked
	fexptime - datetime - stores the date and time when food will approximately expire
	fspick - time - NOT NULL - stores approx start of pickup time
	fepick - time - NOT NULL - stores approx end of pickup time
	fpeople – int (5) - NOT NULL - stores value of approx no. of people that can be fed
	fdescp – varchar (80) - stores food description
	fstatus – int (1) - NOT NULL - stores status of food item [0 means item has not been selected by any NGO, 1 means it has been

	selected by a particular NGO]
	rid – int (5) - NOT NULL - stores the id of related mess that added item to system
	nid – int (5) - stores the id of related NGO that wants to pick up the item

2. SPECIFIC REQUIREMENTS

2.1. FUNCTIONAL REQUIREMENTS

2.1.1. The mess after login in can add the food item

2.1.2. The mess will specify all the details regarding the food item which has been added

2.1.3. Details such as address, contact number, email, delete item and password can be modifiedby both the Mess and NGO.

2.1.4. View history can be viewed by both mess and NGO.

2.1.5. NGO can search for the food item by based on various filters (e.g., number of people fed,location and expiration date etc.).

2.1.6. NGO can add pickup time.

2.2 STIMULUS RESPONSE

Authentication (registration, login, forgot password)

User Actions	System Actions
(1) User clicks on Register button	
	(2) System redirects to the registration page
(3) User enters all the details required to create an account.	
	(4) System performs all data type validations and saves all the information in the database, and redirects to login page
(5) Users can enter registered email and password and click on submit to login.	
	(6) System checks if the user has entered the correct credentials. If correct credentials are entered the system redirects to the respective user homepage (NGO's or Mess).
	(7) If wrong credentials are entered the system displays an error message.
(8) The user can try to enter the correct credentials or click on the "Forgot Password" button to change login credentials.	

(9) If user clicks on forgot password.	
	(10) User redirected to forgot password page.
(11) User enters registered email.	
	(12) An email is sent to the user using SMTP regarding password change, which contains the current hashed password of user.
(13) User enters current hashed password, and new password. Then clicks on the submit button.	
	(14) If the password hash is correct, new password is updated in the database and user is redirected to either NGO or Mess page (based on the type).

Select Item (NGO Specific)

User Actions	**System Actions**
(1) User clicks on the View/Select item on the navbar.	
	(2) System Fetches the details of the items posted by various mess and are available. (Basically items with status = 0)
(3) User can view items posted by themess.	
(4) Users can enter the food item id in the input field to select the item and place its order.	
	(4) The particular food item is associated with the NGO account and database updated. (The status of that particular item now becomes 1)

Add Item (Mess Specific)

User Actions	**System Actions**

(1) User clicks on the Add item on the navbar.	
	(2) The input fields for adding the item details are displayed,
(3) User enters the item details in the input field such as type, name, quantity, Cooked Time, Expiration Time, Feasible Pickup time and description of the item. And then clicks on submit button.	
	(4) System validates each input field and after correct validation adds the item to the database. User is alerted about successful addition. This item is now visible to the NGO Users.

Modify Details

For NGO and Mess users both

User Actions	**System Actions**
(1) User clicks on Modify Details tab in the navbar	
	(2) System fetches and displays personal details from database where user id = id of currently logged in user (stored in session storage)
(3) Clicks on one of the ‘edit’ buttons	
	(4) New input field appears below current details along with update button
(5) Enters new value	
(6) Clicks on update button	
	(7) New value updated in the database and shown on screen and then ‘Successful updating’ alert on screen upon correct validation, otherwise : user mistake prompted
(8) Enters old password once and new password twice and clicks on ‘update’ button	

	(9) Verification : if both new passwords match or not & if old password matches the one in database
	(10) If verification fails : mistake is alerted to user, otherwise : ‘successful password change’ prompted

View History

For NGO users

User Actions	**System Actions**
(1) User clicks on View History tab on the navigation bar	
	(2) System fetches food item details from database where NGO id of food item is equal to the id of currently logged in user
	(3) Details of previously selected food items are shown in a list like format

For Mess users

User Actions	**System Actions**
(1) User clicks on View History tab on the navigation bar	
	(2) System fetches food item details from database where NGO id of food item is equal to the id of currently logged in user
	(3) Details of previously selected food items are shown in a list like format with green color as background for selected items (status id=1) and red color for items not yet selected (status id=0)

Sign Out

User Actions	System Actions
(1) User clicks on Sign Out button on the navigation bar	
	(2) Variables in the session storage are cleared
	(3) User relocated to login page

2.3 PERFORMANCE REQUIREMENTS

PERFORMANCE REQUIREMENT	DESCRIPTION
UI/UX	For the system, it should have good user interface so that a random person can easily understand and use it without any difficulty
RESPONSE TIME	The system should give response to user requests within a maximum of 5 seconds and should give the prediction with a max of 20 seconds.

2.4DESIGN CONSTRAINTS

DESIGN CONSTRAINTS	DESCRIPTION
WEB SERVER	Since this project is a web-based system, it will contain all the constraints under W3 guidelines
SMTP	Our project follows Simple Mail Transfer Protocol guidelines.

2.5NON-FUNCTIONAL REQUIREMENTS

There are a lot of software requirements specifications included in the non-functional

requirements of this project, which contains various processes, namely Security, Performance, Maintainability, and Reliability.

Security
Login Id is given to both mess and NGO for security reasons
Administrator rights - Modification such as delete user can only be done by admin(according to our project, person who is managing database). Admin can also view the user's details.

Performance
The system provides acknowledgement in one second after the user has scannedtheir card and after they have logged in.
Capacity- The system can support 100 people at once.
User-Interface- The user interface acknowledges within five seconds.
Conformity-The system needs to ensure that the guidelines of the Microsoftaccessibilities are followed.

Maintainability
Back-Up- The system offers the efficiency for data back-up.
Errors- The system will track every mistake as well as keep a log of it.

Reliability
Availability- The system is available all the time

2.6STANDARD COMPLIANCE

STANDARD COMPLIANCE	**DESCRIPTION**
W3C	WORLD WIDE WEB CONSORTIUM Recommendations published by the World Wide Web Consortium (W3C), such as HTML/XHTML, Cascading Style Sheets (CSS), image formats such as Portable Network Graphics (PNG) and Scalable Vector Graphics (SVG), as well as accessibility technologies like WAI-ARIA.

HTTPS	Websites should follow secure HTTPS protocol guidelines. WHATWG Standards and Living standards published by the Web Hypertext Application Technology Working Group (WHATWG), such as the HTML Living Standard, DOM Standard, Encoding Standard and URL Standard.
ISO	ISO Standards published by the International Organization for Standardization (ISO), such as JPEG

2.7 DECOMPOSITION DESCRIPTION

Module Decomposition

The Food Sharing System is decomposed into two modules, NGO and the MESS module:

NGO Module: In this module NGO users can view and select items. NGO users can modify their details as well as view their history.

MESS Module: The mess users can add food items with their details such as quantity, expiry date, type and people fed etc. The mess users can view history, delete itemsand can also modify details.

LOGIN Module: The login module contains credentials of all users (both NGO and Mess).

Concurrent Process Decomposition

This project consists of one dependent and one independent module:

Independent Module: AUTHENTICATION, MESS Dependent

Module: NGO

There are seven processes in Food Sharing System, they are:

1. REGISTRATION: The users have to first register themselves i.e., giving details such as name, e-mail, phone number and password
2. LOGIN: The user can then login with the password that they have created.
3. FORGOT PASSWORD: If the users forgot their password, they can click on forgot option to reset their password
4. ADD ITEM: This process can be only accessible to the mess users as they add theitem
5. SELECT ITEM: This process can be only accessible to the NGO users as they can select the item according to their requirement.
6. VIEW HISTORY: This process can be accessible for both NGO and mess users.
7. MODIFY DETAILS: This process can be accessible for both NGO and mess users asthey can modify their details.

Data Decomposition

The following are the three major data components, NGO, Mess and Food itemsinformation.

NGO: The following details contain information regarding the NGO users

- ID- Stores the id of the user- integer int (5)
- Name- Stores the name of the NGO – varchar (30)
- Email- Stores the email address of the NGO - varchar (50)
- Address - Stores the address of the NGO - varchar (60)
- Phno - Stores the primary phone number of the NGO - varchar (10), pattern : pattern="[1-9]{1}[0-9]{9}"
- Phno2-Stores the secondary phone number of the NGO - varchar (10), pattern : pattern="[1-9]{1}[0-9]{9}"
- Password - Stores 60 char long hashed password of the NGO - varchar (70)

MESS: The following details contain information regarding mess users

- rid- Stores the id of the mess user - integer int (5)
- rname-Stores the name of the mess - varchar (30)
- remail- Stores the email address of the mess - varchar (50)
- raddress- Stores the address of the mess - varchar (60)
- rphno - Stores the primary phone number of the mess - varchar (10), pattern: pattern="[1-9]{1}[0-9]{9}"
- rphno2 - Stores the secondary phone number of the mess - varchar (10), pattern: pattern="[1-9]{1}[0-9]{9}"
- Rpass - Stores 60 char long hashed password of the NGO - varchar (70)

FOOD ITEMS: The following details contain information regarding food items:

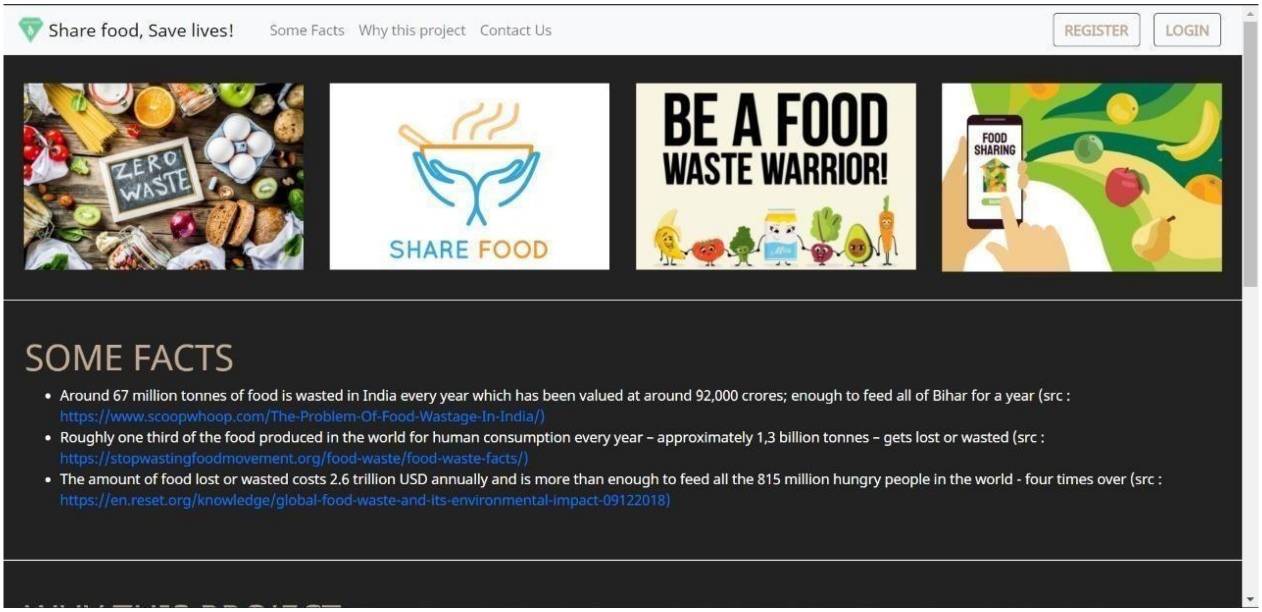
- fid - Stores the id of the food item - integer int (8)
- ftype - Stores the type of the food item - varchar (30)

- fname - Store the name of the food item - varchar (30)
- fquantity - Stores the quantity of food item - integer int (5)
- fweight - Stores the weight of the food item - integer int (5)
- fcooktime - Store the time and date of the food item - date and time
- fexptime - Stores the expiry date and time of when the food will approximately expire - date and time
- fspick - Stores approximate start of pickup time - time
- fepick - Stores approximate end of the pickup time - time
- fpeople - Stores the value of approximately number of people that can be fed - integer int (5)
- fdescp - Stores the food description - varchar (80)
- fstatus - Stores the status of the food item - int (1) [0 means item has not been selected by any NGO, 1 means it has been selected by a particular NGO]
- rid - stores the id of the related mess that is added item to system - int (5)
- nid - Stores the id of the related NGO wants to pick up the item - int (5)

3. INTERFACE DESCRIPTION

3.1 Module Interface

User Interface Design of landing page –



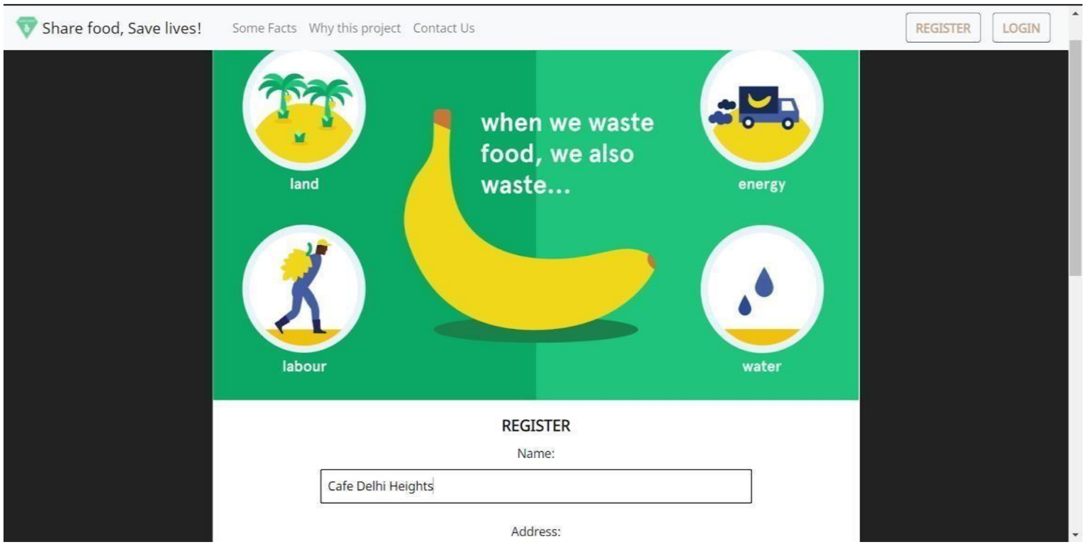
SOME FACTS

- Around 67 million tonnes of food is wasted in India every year which has been valued at around 92,000 crores; enough to feed all of Bihar for a year (src : https://www.scoopwhoop.com/The-Problem-Of-Food-Wastage-In-India/)
- Roughly one third of the food produced in the world for human consumption every year – approximately 1,3 billion tonnes – gets lost or wasted (src : https://stopwastingfoodmovement.org/food-waste/food-waste-facts/)
- The amount of food lost or wasted costs 2.6 trillion USD annually and is more than enough to feed all the 815 million hungry people in the world - four times over (src : https://en.reset.org/knowledge/global-food-waste-and-its-environmental-impact-09122018)

AUTHENTICATION MODULE

Register Sub-module

User Interface Design

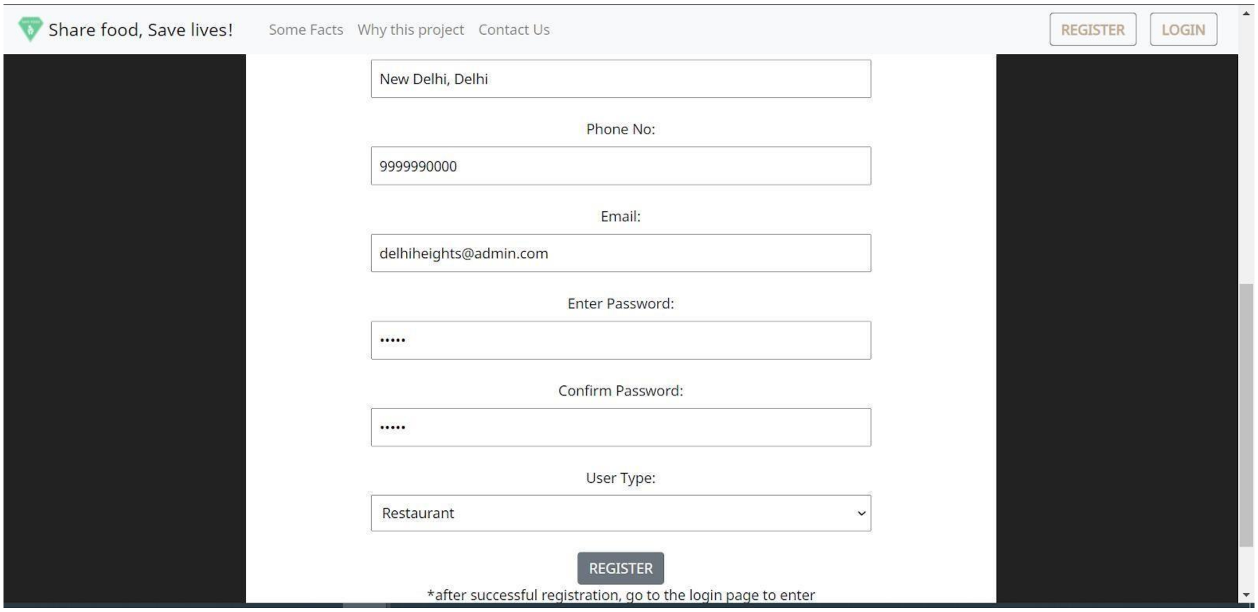


REGISTER

Name:

Cafe Delhi Heights

Address:



New Delhi, Delhi

Phone No: 9999990000

Email: delhiheights@admin.com

Enter Password: •••••

Confirm Password: •••••

User Type: Restaurant

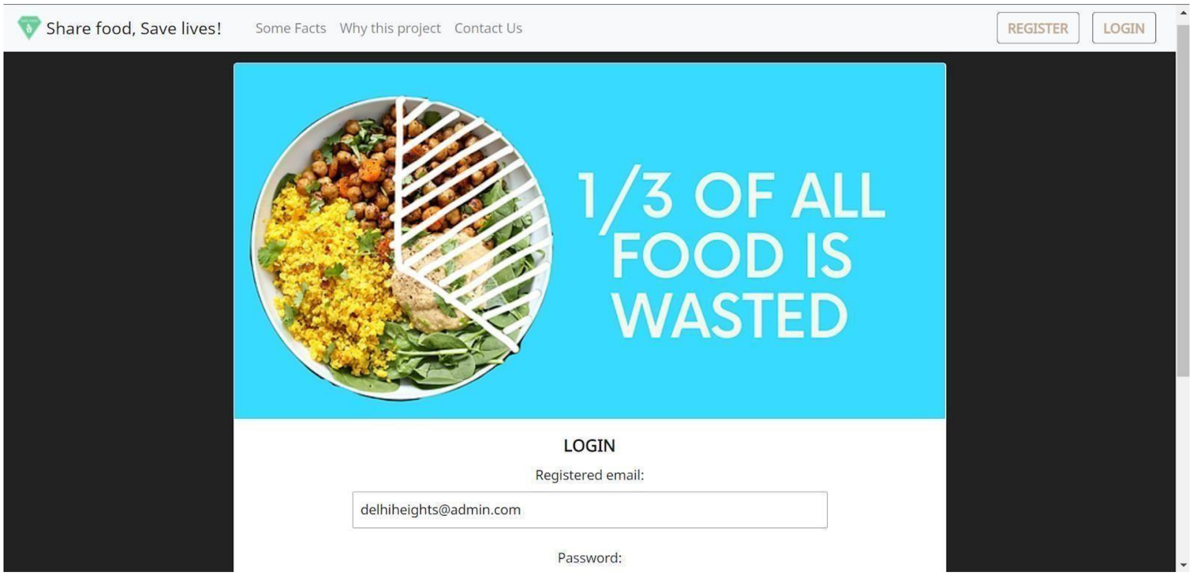
*after successful registration, go to the login page to enter

Description

The Register User Interface can be accessed from the landing page of the website. The above UI allows the user to enter his/her details in order to be registered on the website. The user can either register as an NGO or a Mess type. The user provides the following details other than user type, namely: Name of user, Phone No, Address, Email and then they enter a password and then retype it to confirm registration.

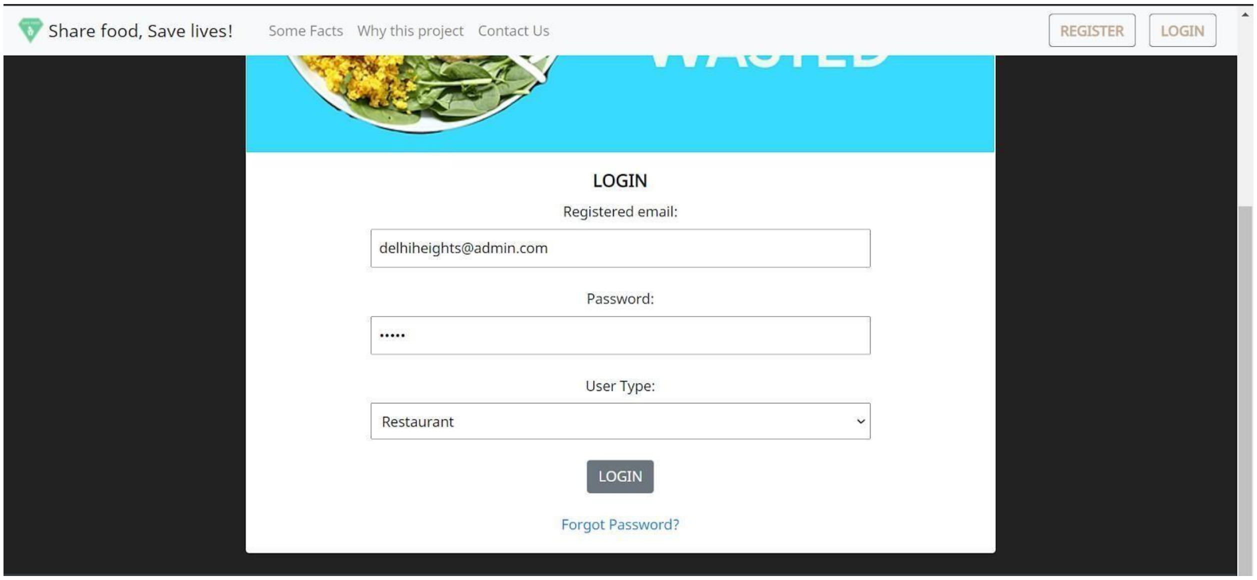
3.3 Login Sub-module

User Interface Design



Registered email: delhiheights@admin.com

Password:



LOGIN

Registered email: delhiheights@admin.com

Password: •••••

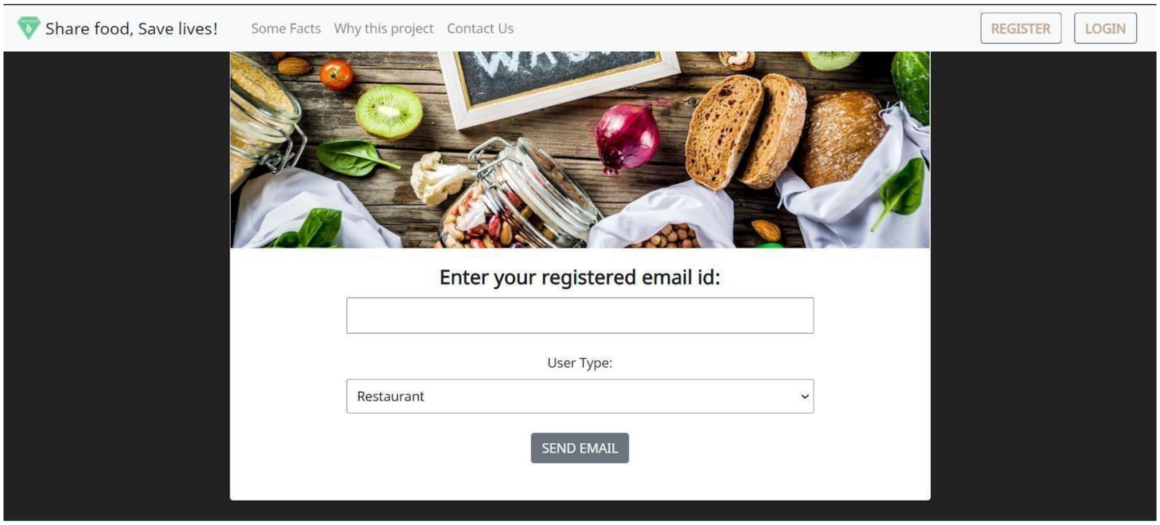
User Type: Restaurant

Description

The Login User Interface can be accessed either via landing page or from the registration page as well. This page allows the user to type in his/her registered email id along with their password and their user type. They then click on the login button to view further actions.

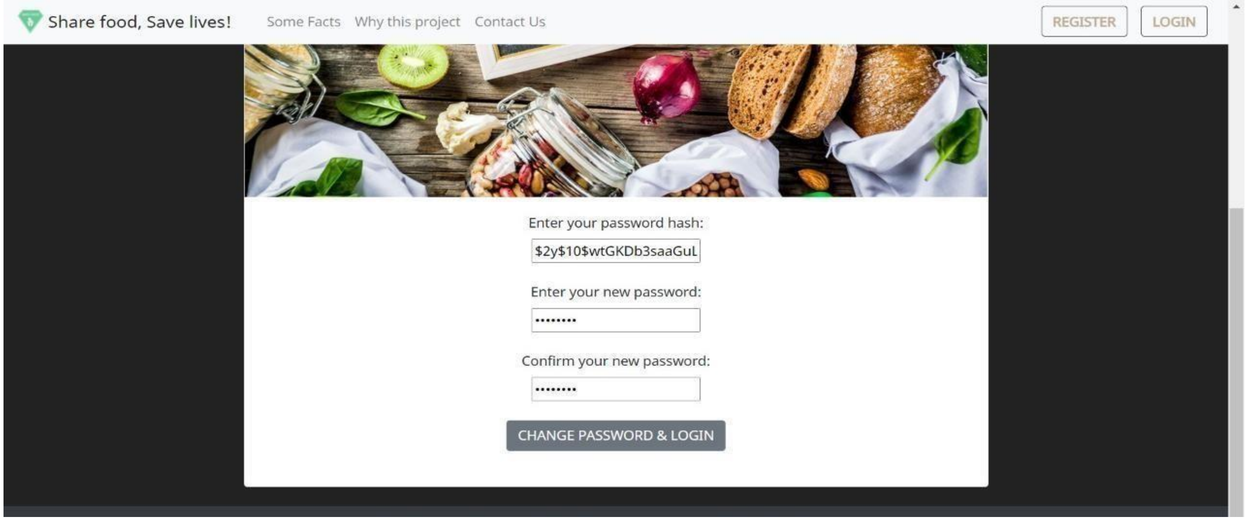
3.4 Forgot password Sub-module

User Interface Design



Enter your registered email id:

User Type: Restaurant



Enter your password hash:
$2y$10$wtGKDb3saaGuL

Enter your new password:
••••••••

Confirm your new password:
••••••••

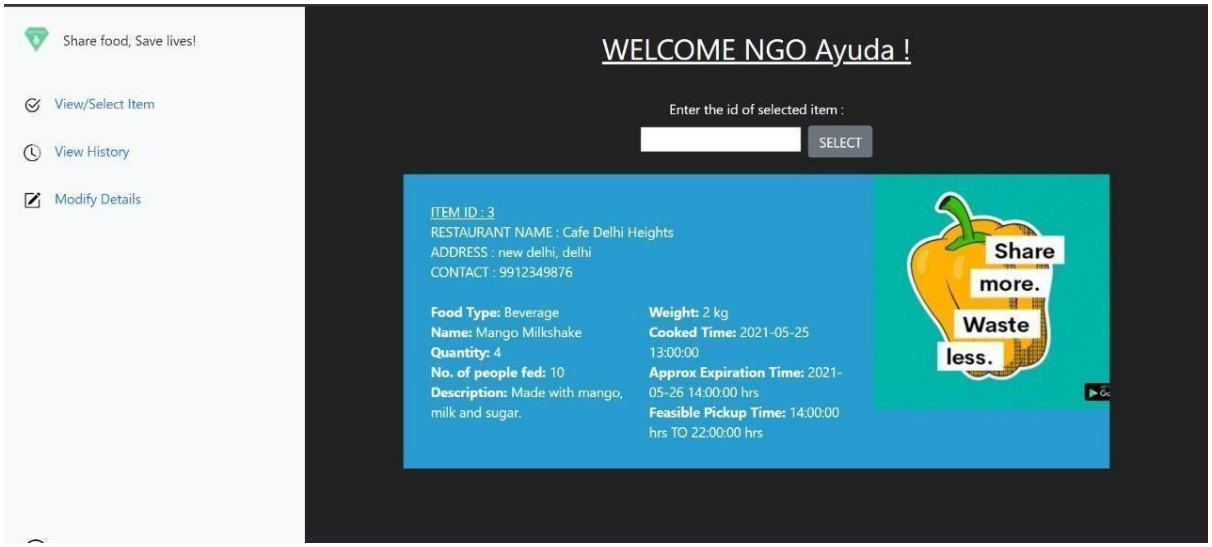
Description

The Forgot Password page can be accessed via the Login page. The UI of this page allows the user to enter their respective registered user id and select their user type. After clicking on the 'send email' button they are redirected to the second page (given above) wherein they enter their hashed password and a new password twice. There is also a 'change password and login' button in the end to submit their details.

NGO MODULE

3.5 Select Item Sub-module

User Interface Design



WELCOME NGO Ayuda !

Enter the id of selected item :

ITEM ID : 3
RESTAURANT NAME : Cafe Delhi Heights
ADDRESS : new delhi, delhi
CONTACT : 9912349876

Food Type: Beverage
Name: Mango Milkshake
Quantity: 4
No. of people fed: 10
Description: Made with mango, milk and sugar.

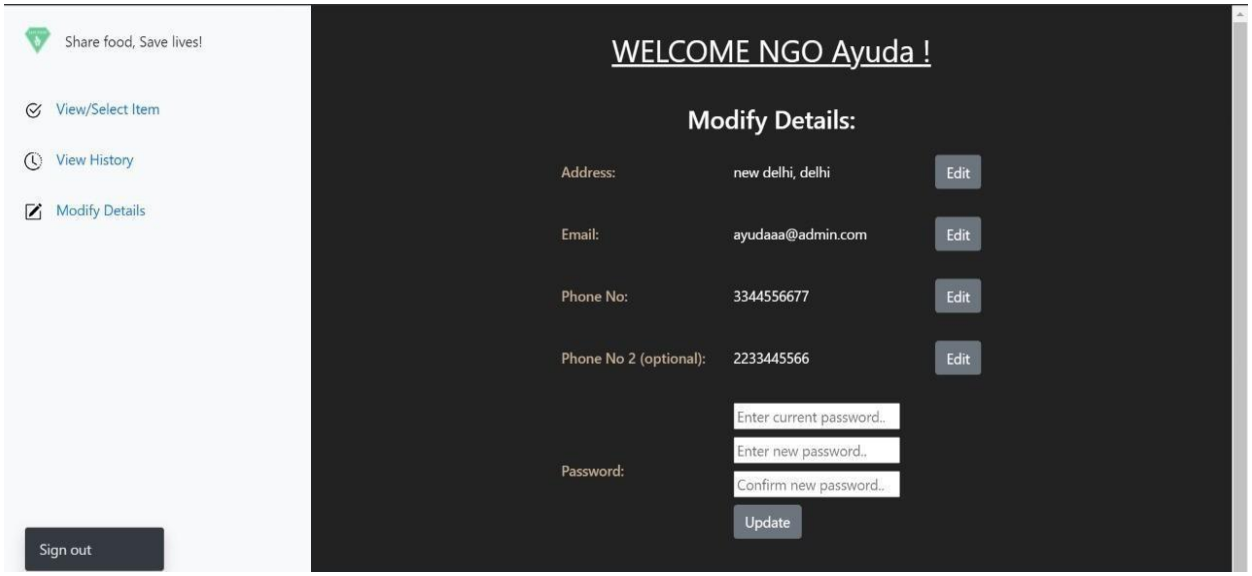
Weight: 2 kg
Cooked Time: 2021-05-25 13:00:00
Approx Expiration Time: 2021-05-26 14:00:00 hrs
Feasible Pickup Time: 14:00:00 hrs TO 22:00:00 hrs

Description

The Select Item page can be accessed via the navigation bar (white bar on the left in the above image) once the user has been successfully logged in as an NGO. The User Interface of this page has an input field wherein the user types the ID of the food item they wish to select. There is also a ‘submit’ button to then submit the ID. The details below the search bar are non-interactive and can only be viewed. The navbar links can be used to go to new pages.

3.6 Modify details Sub-module

User Interface Design



WELCOME NGO Ayuda !

Modify Details:

Address: new delhi, delhi

Email: ayudaaa@admin.com

Phone No: 3344556677

Phone No 2 (optional): 2233445566

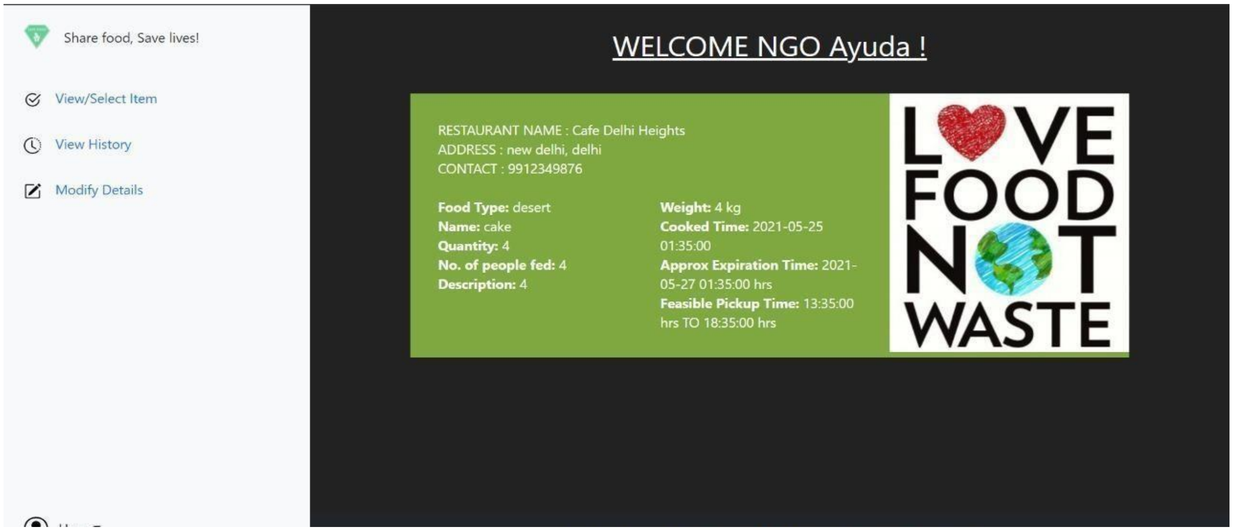
Password:

Description

The NGO Modify Details page can be accessed via the navigation sidebar. The UI of this page includes 4 ‘Edit’ buttons (each button is used to modify the details printed on the left). On click of edit button, one new input field along with ‘Update’ button appears. There are then 3 input fields (first for entering an old password, the other two are for typing in a new password). The last interaction is the ‘Update’ button which when clicked changes the password of the user after validation. The sign out option (present on navbar) can also be seen in the above image.

3.7 View History Sub-module

User Interface Design



WELCOME NGO Ayuda !

RESTAURANT NAME : Cafe Delhi Heights
ADDRESS : new delhi, delhi
CONTACT : 9912349876

Food Type: desert
Name: cake
Quantity: 4
No. of people fed: 4
Description: 4

Weight: 4 kg
Cooked Time: 2021-05-25 01:35:00
Approx Expiration Time: 2021-05-27 01:35:00 hrs
Feasible Pickup Time: 13:35:00 hrs TO 18:35:00 hrs

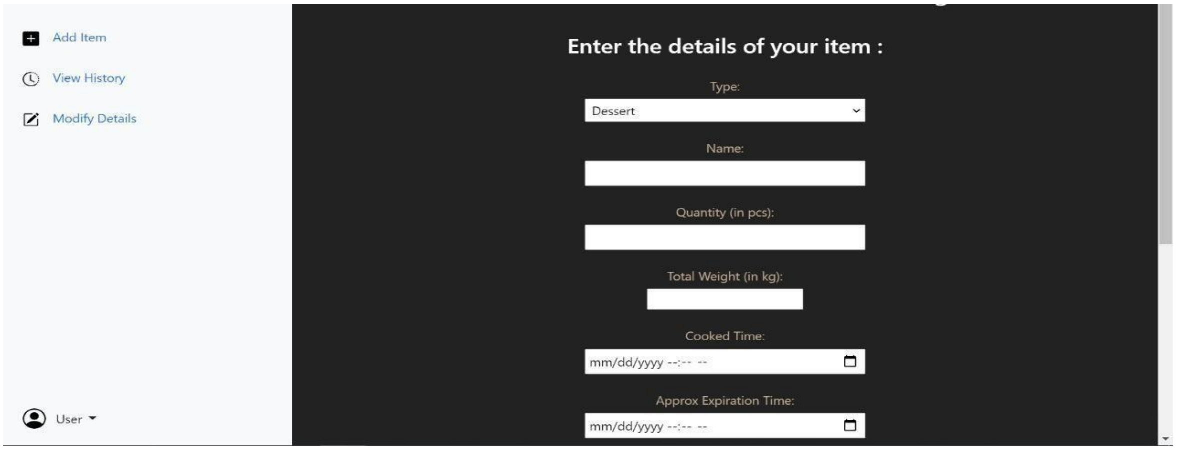
Description

The NGO View History page can be accessed via the side navigation bar. The UI of this page is non-interactive and users can only view their history. Though they can click on any of the other 3 links (view item, modify details, and SIGN OUT) on the nav bar to go to a new page.

3.8 MESS MODULE

Add Item Sub-Module

User Interface Design



Enter the details of your item :

Type:
Dessert

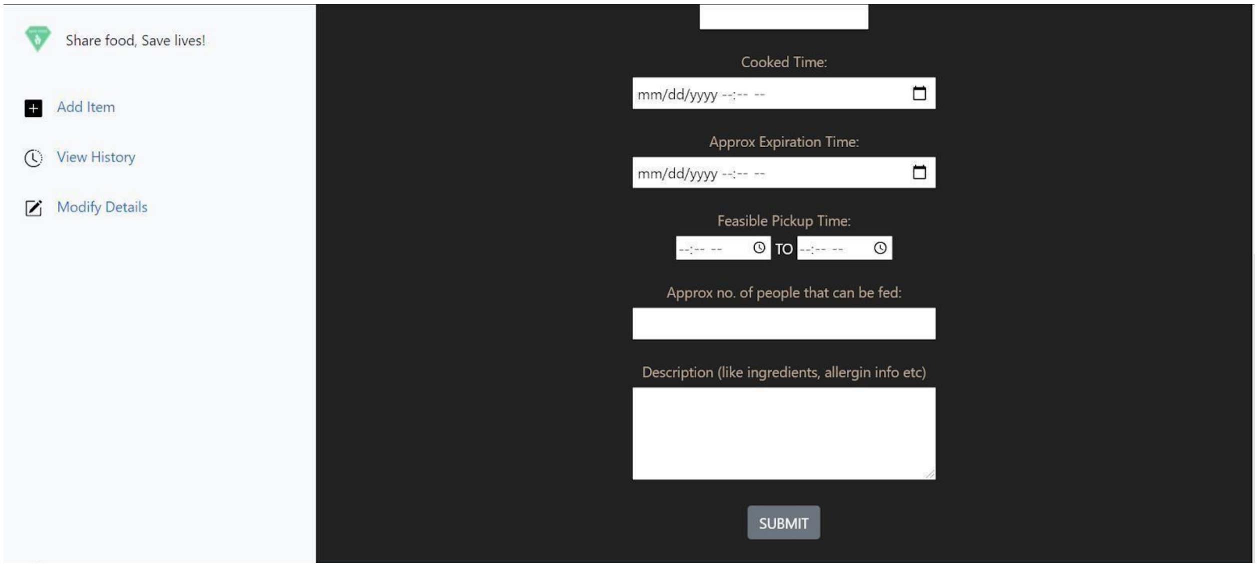
Name:

Quantity (in pcs):

Total Weight (in kg):

Cooked Time:
mm/dd/yyyy --:-- --

Approx Expiration Time:
mm/dd/yyyy --:-- --

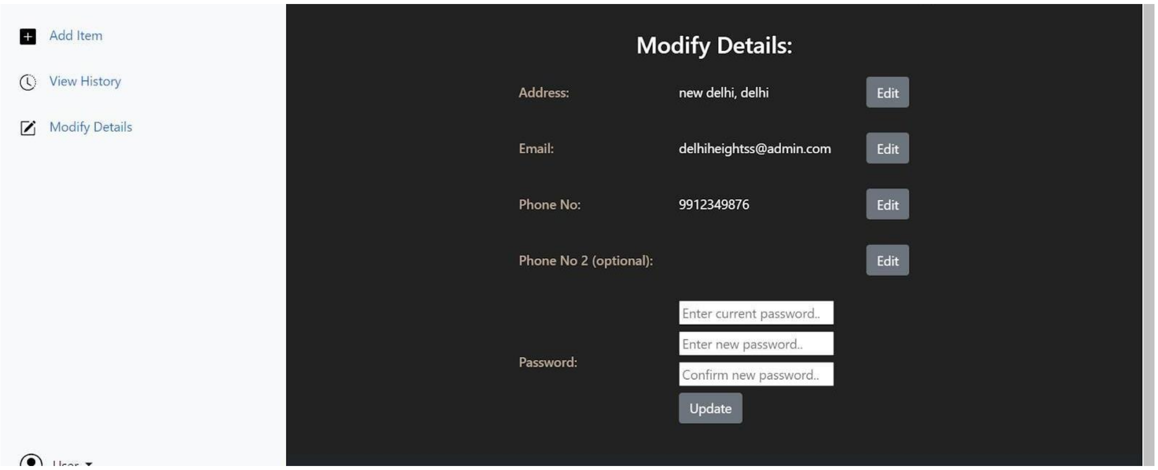


Description

The Mess Add Item page can be accessed via the side navigation bar after successful login as a mess user. The UI of this page includes the input fields for following labels: food type (user can only select from a list of types), food name, food quantity, total weight, date and time when it was cooked, approx. expiration time, feasible pickup time range, approx. no of people fed and description of food item. There is a 'submit' button at the end. Also, the other 3 links on the navbar (namely: SIGN OUT, modify, and view history) can be clicked to go to new pages.

3.9 Modify details Sub-Module

User Interface Design



Modify Details:

Address: new delhi, delhi

Email: delhiheightss@admin.com

Phone No: 9912349876

Phone No 2 (optional):

Password:

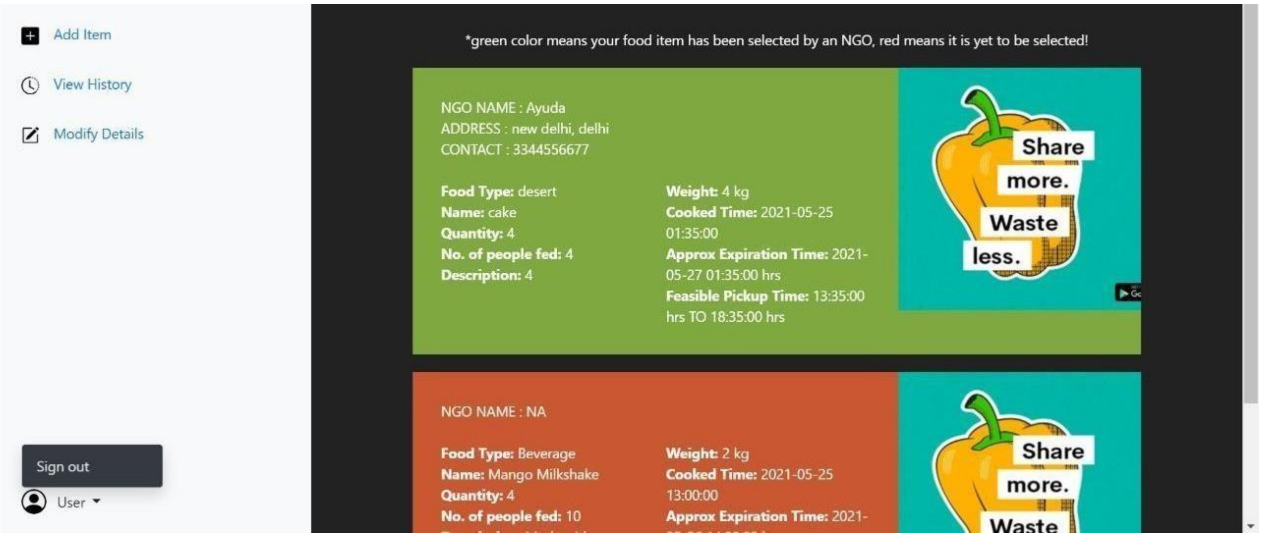
Description

The Mess Modify Details page can be accessed via the side navbar. The UI of this page includes 4 ‘Edit’ buttons (each button is used to modify the details printed on the left). On click ofedit button, one new input field along with ‘Update’ button appears. There are then 3 input fields (first for entering an old password, the other two are for typing in a new password). The last interaction is the ‘Update’ button which when clicked changes the password of the user after validation.

3.10 View history Sub-Module

User Interface Design

Description



*green color means your food item has been selected by an NGO, red means it is yet to be selected!

NGO NAME : Ayuda
ADDRESS : new delhi, delhi
CONTACT : 3344556677

Food Type: desert
Name: cake
Quantity: 4
No. of people fed: 4
Description: 4

Weight: 4 kg
Cooked Time: 2021-05-25 01:35:00
Approx Expiration Time: 2021-05-27 01:35:00 hrs
Feasible Pickup Time: 13:35:00 hrs TO 18:35:00 hrs

NGO NAME : NA

Food Type: Beverage
Name: Mango Milkshake
Quantity: 4
No. of people fed: 10

Weight: 2 kg
Cooked Time: 2021-05-25 13:00:00
Approx Expiration Time: 2021-

The NGO View History page can be accessed via the side navigation bar. The UI of this page is interactive and users can only view their history. Items listed in ‘green’ color means that they have been selected by an NGO whereas the ones in ‘red’ color have not been selected yet. The user can still click on any of the other 3 links (view item, modify details, and SIGN OUT) on the nav bar to go to a new page.

4. Process Interface

4.1 Register Process Description

The main objective of the Register sub-module is to take in the details of the incoming users and store them in the database. This is an independent module and a part of the authentication module. It is the primary step for every user if they want to use the website. The user provides details like: name, address, contact no, e-mail, user type (either NGO or mess) and a password (the password is saved in the database only after being hashed using crypt hashing algo to safeguard the users' privacy from even the database manager/developer etc.). Once the user clicks on 'Register' button, their details are validated according to the constraints provided during the codingof this part and based on that the user either receives prompts to correct their details (for ex: contactno should only be of 10 digits etc.) or else "registered successfully" message is displayed.

4.2 Login Process Description

The user comes to the Login sub-module when they want to be authenticated as either a registered NGO or mess to go to the NGO or mess pages respectively. This sub-module is dependent on the Register sub-module. The user enters their registered email and password, alongwith user type and then this sub-module interacts with the database to authenticate user login. If the details provided match with one of the details in the database, the user is successfully logged in.

4.3 Forgot Password Process Description

The objective of this sub-module is to help the user to log in even when they have forgotten their password. This sub-module is also dependent on the register sub-module. The following steps are involved here :

- The user enters their registered e-mail id and user type.
- On click of submit button, an email is sent to the user which contains the 60 character long crypted password of the user. The user is also relocated to the next page.
- Users then copy pastes their old passwords' hash in the first input field.
- The next two input fields are for a new password.
- Once the user clicks on the login button, their hash is correctly verified from the database.
- Upon successful verification, the user's password is updated and they are logged in.

4.4 Modify details Process Description

This sub-module is present for both NGO and Mess types of users and thus a part of both NGO and Mess modules. This sub-module is dependent on the Register and Login sub- modules. Its objective is to let the users modify their personal details (address, contact no, email) in case any of them changes after registration. They can also change their password whenever theywish to use this sub-module. Whichever (except password) field the user wants to modify they should click on the respective ‘edit’ button present on the right. After that, a new input field is shown just below the edit button in which the user types new details. Upon proper validation of the particular details, it is updated in the database after clicking on the submit button.

4.5 View history Process Description

This sub-module is also present for both NGO and Mess users. This sub-module is dependenton the register and login sub-modules. Objective of this module is to let the users view all items they have added to the website (in case of mess) or selected (in case of NGO). In the case ofmess, all items are viewed with a ‘green’ background but in the case of NGOs, there are twopossible background colors that signify different things. Green color means that some NGO has selected their particular food item to be picked up. Red color means that their added item has not yet been selected by any NGO. This module fetches data from the database based on the id of thelogged in user and shows their history.

4.6 Add Item Process Description

This sub-module is only present in the Mess module. It is a dependent sub-module which is dependent on login and register sub-modules. Its objective is to take in details from the user regarding the food item and save them in the database. The following steps are involved here:

- The user selects food type from a menu list.
- They then type in details like food name, food quantity, approx. no of people fed, food description and total weight. Then they select date and time when it was cooked, approx. expiration date and time, and feasible pickup time range.
- On clicking the submit button, all fields are validated according to their respectivetypes and on successful validation, the item is added to the database.

4.7 Select Item Process Description

This sub-module is only present in the NGO module. It is a dependent sub-module which is dependent on login and register sub-modules. Its objective is to allow users to select favorable food items for pickup. The following steps are involved here:

- User enters a food item ID of a favorable item.

- If a valid ID is entered, the item gets selected after fetching details from the database. The NGO can then pick it up, this particular item won't then be availablein the view list of other NGOs.

5. DETAILED DESIGN

5.1 Module Detailed Design

Mess

Mess Description

The mess users can do the following operations first as registration and then logging into theportal. Once the mess have successfully logged in, they can add an item i.e., adding a food item with their details such as type of food, quantity etc. They can also delete food items. Modification is also available, the mess user can modify details like their address, number, email, etc. They can view the history of the food items and profile as well.

5.1.1 NGO

NGO Description

The NGO users can register by entering all the details and then logging into the portal. Once the user has successfully logged in, the user can view the items available and then can select the item which they want. This is the main process of the NGO user. The NGO user can also view the history of all the items selected previously by that NGO user. The NGO user can also view their profile as well as modify their details.

5.1.2 Food item

Food Item Description

Mess class is related to the food item. The mess users have to add the details like weight,name quantity, type, when that item has cooked and when the item might expire. The pickup and number of the people that can be fed.

5.1.3 NGO history item

NGO History Description

The NGO history item is related to the NGO class where the NGO id, entry id and mess id. The status of the food item is available in NGO history item class as the NGO must know the statusof the food item i.e., is food item available or not has been taken by any other NGO user. Status can have two values 0 and 1, 0 means item has not been selected by any NGO, 1 means it has beenselected by a particular NGO.

Mess history item

Mess History Description

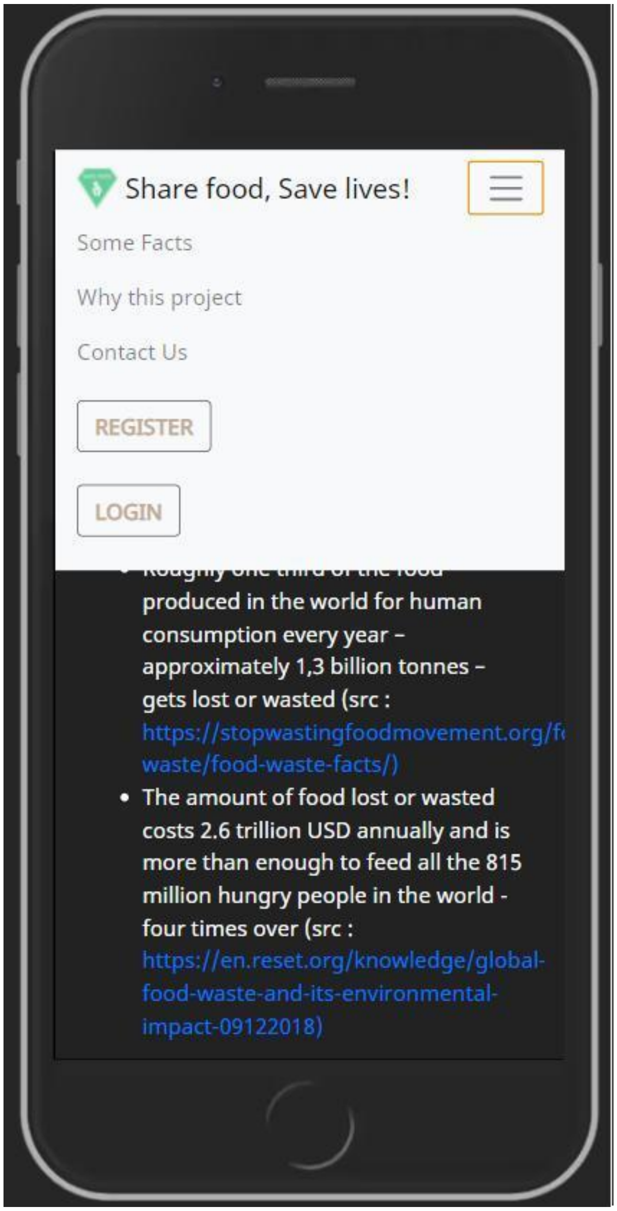
The mess history item class is related to the mess class because the mess should know the NGO id, entry id and the status. The mess can know which NGO has taken the fooditem by the NGO id. The status of the food item should be known i.e., 0 means item has not beenselected by any NGO, 1 means it has been selected

TEST CASE REPORT

1. RESPONSIVENESS

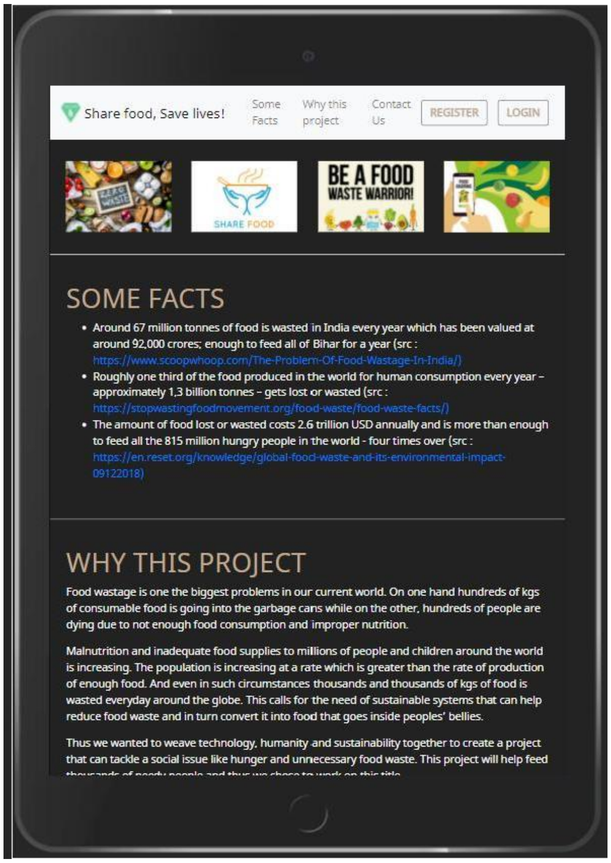
TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
1. (a)	To check if the website is responsive in different viewports	For mobile like devices (small viewport)	Should be responsive	Should be responsive	Pass
1. (b)	To check if the website is responsive in different viewports	For tablet like devices (medium viewport)	Should be responsive	Should be responsive	Pass
1. (c)	To check if the website is responsive in different viewports	For laptop/desktop like devices (large viewport)	Should be responsive	Should be responsive	Pass

TEST CASE OUTPUTS – (small viewports)



- Roughly one third of the food produced in the world for human consumption every year – approximately 1,3 billion tonnes – gets lost or wasted (src : https://stopwastingfoodmovement.org/f waste/food-waste-facts/)
- The amount of food lost or wasted costs 2.6 trillion USD annually and is more than enough to feed all the 815 million hungry people in the world - four times over (src : https://en.reset.org/knowledge/global-food-waste-and-its-environmental-impact-09122018)

TEST CASE OUTPUTS - (medium viewports)



SOME FACTS

- Around 67 million tonnes of food is wasted in India every year which has been valued at around 92,000 crores; enough to feed all of Bihar for a year (src : https://www.scoopwhoop.com/The-Problem-Of-Food-Wastage-In-India/)
- Roughly one third of the food produced in the world for human consumption every year – approximately 1,3 billion tonnes – gets lost or wasted (src : https://stopwastingfoodmovement.org/food-waste/food-waste-facts/)
- The amount of food lost or wasted costs 2.6 trillion USD annually and is more than enough to feed all the 815 million hungry people in the world - four times over (src : https://en.reset.org/knowledge/global-food-waste-and-its-environmental-impact-09122018)

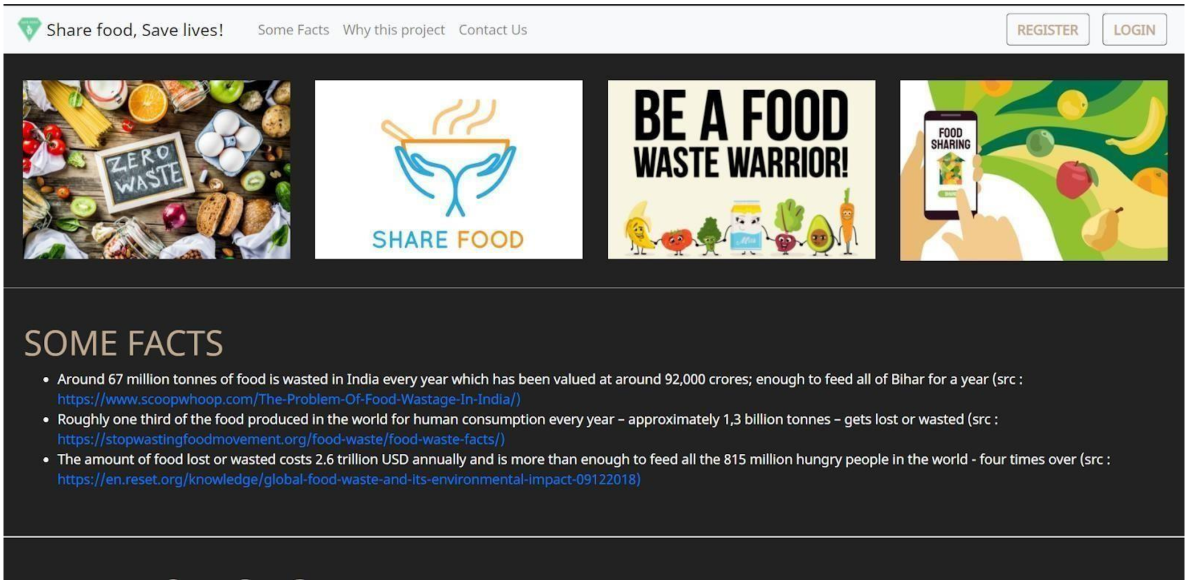
WHY THIS PROJECT

Food wastage is one the biggest problems in our current world. On one hand hundreds of kgs of consumable food is going into the garbage cans while on the other, hundreds of people are dying due to not enough food consumption and improper nutrition.

Malnutrition and inadequate food supplies to millions of people and children around the world is increasing. The population is increasing at a rate which is greater than the rate of production of enough food. And even in such circumstances thousands and thousands of kgs of food is wasted everyday around the globe. This calls for the need of sustainable systems that can help reduce food waste and in turn convert it into food that goes inside peoples' bellies.

Thus we wanted to weave technology, humanity and sustainability together to create a project that can tackle a social issue like hunger and unnecessary food waste. This project will help feed thousands of needy people and thus we chose to work on this title.

TEST CASE OUTPUTS - (large viewports)



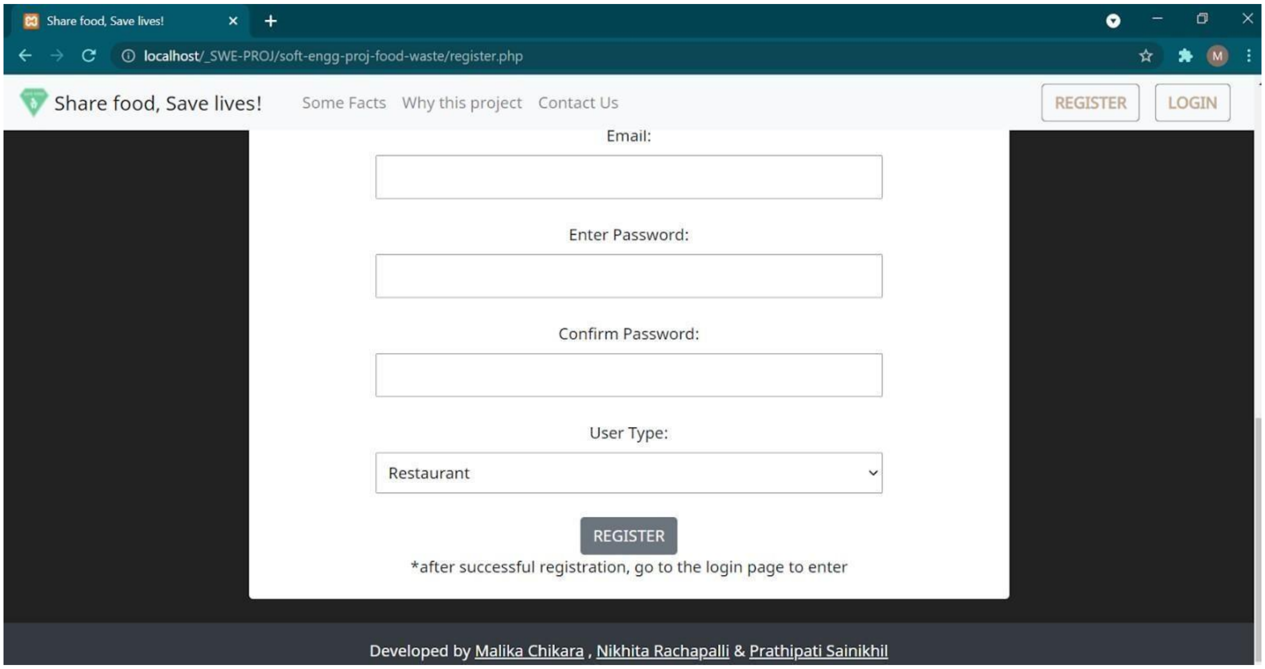
SOME FACTS

- Around 67 million tonnes of food is wasted in India every year which has been valued at around 92,000 crores; enough to feed all of Bihar for a year (src : https://www.scoopwhoop.com/The-Problem-Of-Food-Wastage-In-India/)
- Roughly one third of the food produced in the world for human consumption every year – approximately 1,3 billion tonnes – gets lost or wasted (src : https://stopwastingfoodmovement.org/food-waste/food-waste-facts/)
- The amount of food lost or wasted costs 2.6 trillion USD annually and is more than enough to feed all the 815 million hungry people in the world - four times over (src : https://en.reset.org/knowledge/global-food-waste-and-its-environmental-impact-09122018)

2. COMPATIBILITY WITH ALL BROWSERS

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
2. (a)	To check if the website is compatible/responsive with various browsers	For google chrome	Should be compatible	Should be compatible	Pass
2. (b)	To check if the website is compatible/responsive in different viewports	For Mozilla Firefox	Should be compatible	Should be compatible	Pass
2. (c)	To check if the website is compatible/responsive in different viewports	For Microsoft edge	Should be compatible	Should be compatible	Pass

TEST CASE OUTPUT - (Google Chrome)



Email:

Enter Password:

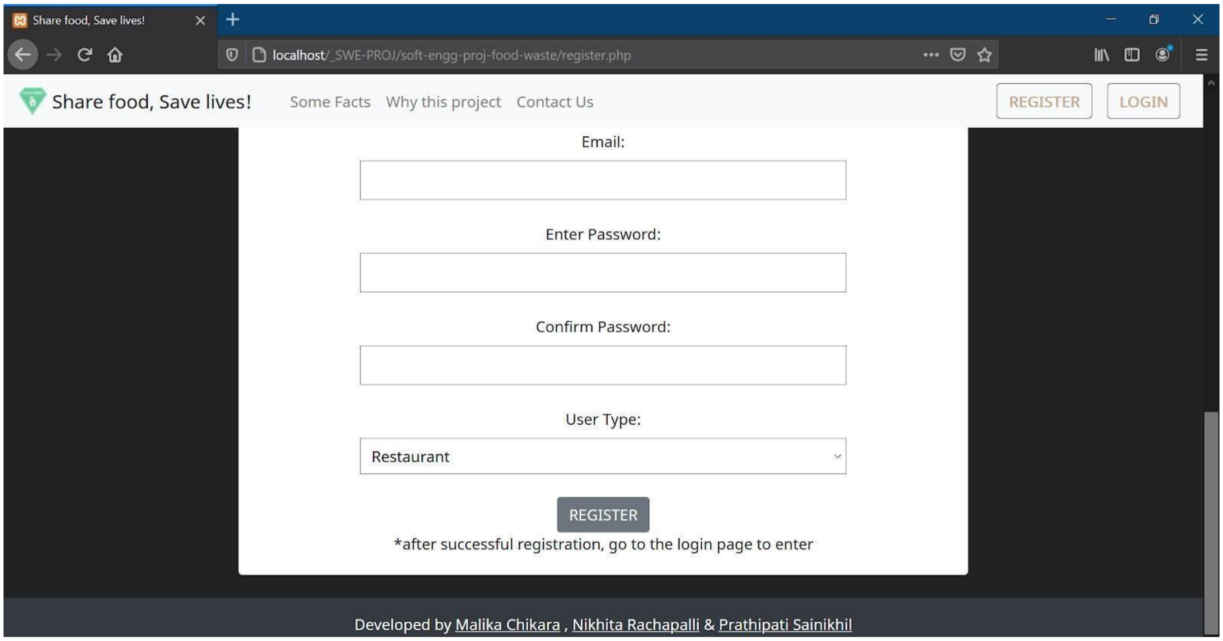
Confirm Password:

User Type: Restaurant

*after successful registration, go to the login page to enter

Developed by Malika Chikara , Nikhita Rachapalli & Prathipati Sainikhil

TEST CASE OUTPUT - (Mozilla Firefox)



Email:

Enter Password:

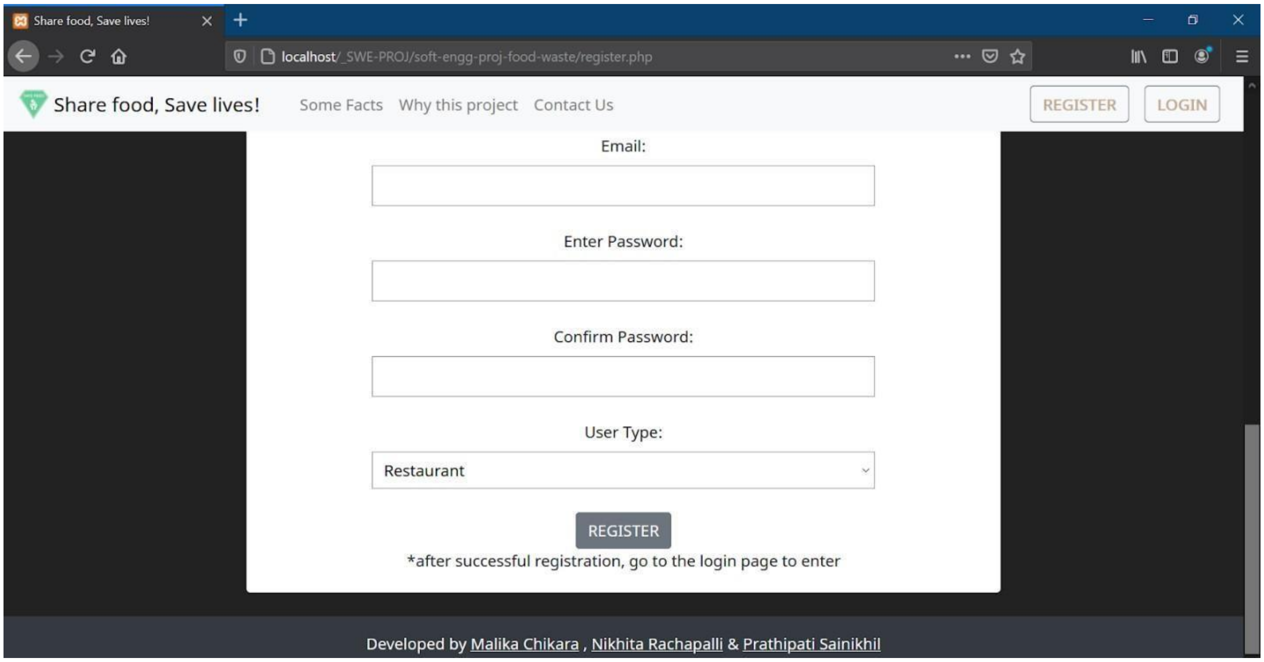
Confirm Password:

User Type: Restaurant

*after successful registration, go to the login page to enter

Developed by Malika Chikara , Nikhita Rachapalli & Prathipati Sainikhil

TEST CASE OUTPUT - (Microsoft Edge)



Email:

Enter Password:

Confirm Password:

User Type:

Restaurant

*after successful registration, go to the login page to enter

Developed by Malika Chikara , Nikhita Rachapalli & Prathipati Sainikhil

3. FORGOT PASSWORD & MAIL

TEST CASE ID	TEST CASE OBJECTIVE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	TEST PASS/FAIL
3.(a)	To check if unregistered user can use the forgot password mechanism	Email: newone@gmail.com	‘Email not found’ alert box	‘Email not found’ alert box	Pass

3.(b)	To check if email gets sent to registered user for forgot password mechanism	Email: sethineha246@gmail.com	‘Email successfully sent’ alert box and redirect to enter-pass page	‘Email successfully sent’ alert box and redirect to enter-pass page	Pass

4. REGISTRATION

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
4.(a)	To check valid registration	Name: Cafe Bistro Address: New Delhi, Delhi Phone No: 9910533558 Email: cafebistro@gmail.com Enter password: admin Confirm password: admin User Type: Mess	Registration successful alert box	Registration successful alert box	Pass

4.(b)	To check validation of “Name” input field	M@@87ja	Invalid name error prompted to user because special characters included	Invalid name error prompted to user because special characters included	Pass
4.(c)	To check the validation of “Address” input field	If the address length is more than 50 characters Or ##@@	Invalid Address error is prompted	Invalid Address error is prompted	Pass
4.(d)	To check the validation of “Phone” input field	9090909	Invalid Phone error is prompted because only 7 digits number given	Invalid Phone error is prompted because only 7 digits number given	Pass
4.(e)	To check the validation of “Password” input field	If password length is above 30 characters	Invalid Password error is prompted	Invalid Password error is prompted	Pass
4.(f)	To check the validation of email input field	nam@@gmail.com	Invalid Email error is prompted	Invalid Email error is prompted	Pass

5. LOGIN

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
5.(a)	To check login of user when correct details entered	Email: delhiheightss@admin.com Password: admin User Type: Mess	"Login successful" alerted to user	"Login successful" alerted to user	Pass
5.(b)	To check login of unregistered user	Email: cafecafe@gmail.com Password: admin User Type: Mess	"Invalid email" alerted to user	"Invalid email" alerted to user	Pass
5.(c)	To check if user can login with incorrect password	Email: delhiheightss@admin.com Password: qwertyui User Type: Mess	"Invalid password" alerted to user	"Invalid password" alerted to user	Pass

6. ADD ITEM

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
6.(a)	To check that the item has been successfully added if all the details are added correctly.		An alert box which says "Inserted Successfully"	An alert box which says "Inserted Successfully"	Pass
6.(b)	To check if a user can add a title longer than 30 letters	qqqwwweeerrrtttyyyuuuiiiooo ppp	Name error is prompted	Name error is prompted	Pass
6.(c)	To check if a user can add special characters as a title.	@#$^	Name error is prompted	Name error is prompted	Pass
6.(d)	To check if a user can add an item weight longer than 4 digits.	11111	Quantity error is prompted	Quantity error is prompted	Pass
6.(e)	To check if a user can add an item weight longer than 4 digits.	989899	Item Weight error is prompted	Item Weight error is prompted	Pass

6.(f)	To check if a user can add an Approx no. of people that can be fed: longer than 4 digits.	987655	Approx no. of people that can be fed: error is prompted	Approx no. of people that can be fed: error is prompted	Pass
6.(g)	To check if the item has been added if some input fields are left empty		“This field is a required field” prompted to user	“This field is a required field” prompted to user	Pass

7. SELECT ITEM

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
7.(a)	To check if item gets selected by user after typing valid id and clicking “select” button	12	“Item chosen successfully” alerted to user	“Item chosen successfully” alerted to user	Pass
7.(b)	To check if item gets selected by user after typing invalid id and clicking “select” button	02345 Or $ueyi	“Entered id doesn’t exist” alerted to user	“Entered id doesn’t exist” alerted to user	Pass

8. IEW HISTORY

TEST CASE ID	TEST CASE OBJECTIVE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	TEST PASS/FAIL
8.	To check if history is displayed to the user		History is displayed	History is displayed	Pass

9. MODIFY DETAILS

TEST CASE ID	TEST CASE OBJECTIVE	TEST DATA	EXPECTED RESULT	ACTUAL RESULT	TEST PASS/FAIL
9.(a)	To check the validation of Address input field in Modify details page	Mumbai, Maharashtra	“Address updated successfully” alerted	“Address updated successfully” alerted	pass
9.(b)	To check the validation of Address input field in Modify details page	If the address length is more than 50 characters or has special characters such as !@#$	Address error is prompted	Address error is prompted	pass
9.(c)	To check the validation of email input field in Modify details page	sai@gmail.com	Email error is not prompted & “Email updated successfully” alerted	Email error is not prompted & “Email updated successfully” alerted	Pass

9.(d)	To check the validation of email input field in Modify details page	121@21@hot.com	Email error is prompted	Email error is prompted	Pass
9.(e)	To check the validation of Phone input field in Modify details page	9123456789	Phone error not prompted & “Phone updated successfully” alerted	Phone error not prompted & “Phone updated successfully” alerted	Pass
9.(f)	To check the validation of Phone input field in Modify details page	912346	Phone error is prompted	Phone error is prompted	Pass
9.(g)	To check the validation of the Old-Password input field in Modify.	If input doesn’t match current password	“Incorrect password” alerted	“Incorrect password” alerted	Pass
9.(h)	To check if password updated on correct validation, ie, (current password should be correct, new password should be	User clicks on “update” button	“Password updated successfully” alerted	“Password updated successfully” alerted	Pass

	typed correctly twice)				
9.(i)	To check the validation of the New Password input field in Modify.	If password length is above 30 characters	Password error is prompted	Password error is prompted	Pass
9.(j)	To check if user allowed to proceed after re-typing the password wrong	Click on “submit” button	“The passwords don’t match” alerted	“The passwords don’t match” alerted	Pass

10. LOGOUT

TEST CASE ID	**TEST CASE OBJECTIVE**	**TEST DATA**	**EXPECTED RESULT**	**ACTUAL RESULT**	**TEST PASS/FAIL**
10.(a)	Check if user has logged out, they must be redirected to the login page	Click on “sign out” button	Redirected to login page	Redirected to login page	Pass
10.(b)	Check if once user has logged out and tries to log back in using the back icon on the browser, they will be on the same page itself (login page)	Click on back button in browser	Remain on the same page i.e. the login page	Remain on the same page i.e. the login page	Pass

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Title of the Paper:

FOOD WASTE MANAGEMENT SYSTEM

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Keywords

User, Web Application, Sign up, Login, Profile, Management System.

Introduction

Our main purpose of this project is to make a user friendly and efficient web application for managing food waste in mess and to help the needy.
Around 67 million tons of food is wasted in India every year and roughly one third of the food produced in the world for human consumption every year gets wasted. And hence the food sharing system is implemented so that food wastage is less. To design and develop an interactive system for users to manage the food waste that occurs in mess.

It is within the scope of the Software Requirements Specification to describe the specific system requirements of the food sharing project. This would include performance requirements, system constraints. Any specific detail that is needed about the standards or technology used to define these requirements, constraints. It is also outside the scope of this document to describe in any detail at all how certain mentioned standards or technologies work and operate.

Literature survey

AUTHOR	RESEARCH PAPER	SUMMARY
ChaopingZhu[a] RuguoFan[a] MingLuo[b] JinchaiLin[a] YingqingZhang[c]	https://www.sciencedirect.com/science/article/abs/pii/S0959652620339822	This paper conducts a detailed study in which food waste can meet diverse demand if treated harmlessly while may bring severe environmental problems if managed improperly. China is currently trying to facilitate food waste harmless disposal and resource utilization by urban food waste management. However, conflicts of interest among government departments, mess andwaste disposal companies often make it difficult to achieve effective urban food waste management.

Ngoc Bao DungThi[ab]Gopalakrish nanKumar[c]Chiu-YueLin[ab]	https://www.sciencedirect.com/science/article/pii/S0301479715300256	This work aimed to provide an overview of recycling activities, related regulations, and current FW treatment technology in developing countries by following some case studies. Taiwan, has been suggested as being a successful case in terms of FW management, and is therefore a typical modelfor developing countries to follow.
Sundt, Peter	https://books.google.co.in/books?hl=en&lr=&id=uodEYYHgY2QC&oi=fnd&pg=PA7&dq=food+waste+management+system+ngo+and+restaurant&ots=dHY6ApCSf6&sig=yMf4irJIZtD5eeD44RlmELZXTkA&redir_esc=y#v=onepage&q&f=false	This work gives us an improved idea on the presentation and demonstration of the SQL point of this project

Methodology

REGISTRATION:

The main objective of the Register sub-module is to take in the details of the incoming users and store them in the database. This is an independent module and a part of the authentication module.

It is the primary step for every user if they want to use the website. The user provides details like:

name, address, contact no, e-mail, user type (either NGO or mess) and a password (the password is saved in the database only after being hashed using crypt hashing algo to safeguard the users' privacy from even the database manager/developer etc.). Once the user clicks on 'Register' button, their details are validated according to the constraints provided during the coding of this part and based on that the user either receives prompts to correct their details (for ex: contact no should only be of 10 digits etc.) or else "registered successfully" message is displayed.

LOGIN

The user comes to the Login sub-module when they want to be authenticated as either a registered NGO or mess to go to the NGO or mess pages respectively. This sub-module is dependent on the Register sub-module. The user enters their registered email and password, along with user type and then this sub-module interacts with the databaseto authenticate user login. If the details provided match with one of the details in the database, the user is successfully logged in.

Forgot Password Process Description

The objective of this sub-module is to help the user to log in even when they have forgotten their password. This sub-module is also dependent on the register sub-module. The following steps are involved here :

1. The user enters their registered e-mail id and user type.
2. On click of submit button, an email is sent to the user which contains the 60 character long crypted password of the user. The user is also relocated to the next page.
3. Users then copy pastes their old passwords' hash in the first input field.
4. The next two input fields are for a new password.
5. Once the user clicks on the login button, their hash is correctly verified from the database.
6. Upon successful verification, the user's password is updated and they are logged in.

Modify details Process Description

This sub-module is present for both NGO and Mess types of users and thus a part of both NGO and Mess modules. This sub-module is dependent on the Register and Login submodules. Its objective is to let the users modify their personal details (address, contact no, email) in case any of them changes after registration. They can also change their password whenever they wish to use this sub-module. Whichever (except password) field the user wants to modify they should click on the respective 'edit' button present on the right. After that, a new input field is shown just below the edit button in which the user types new details. Upon proper validation of the particular details, it is updated in the database after clicking on the submit button.

View history Process Description

This sub-module is also present for both NGO and Mess users. This sub-module is dependent on the register and login sub-modules. Objective of this module is to let the users view all items they have added to the website (in case of mess) or selected (incase of NGO). In the case of mess, all items are viewed with a 'green' background but in the case of NGOs, there are two possible background colors that signify different things. Green color means that some NGO has selected their particular food item to be picked up. Red color means that their added item has not yet been selected by any NGO.This module fetches data from the database based on the id of the logged in user and shows their history.

Add Item Process Description

This sub-module is only present in the Mess module. It is a dependent sub-module which is dependent on login and register sub-modules. Its objective is to take in details from the user regarding the food item and save them in the database. The following stepsare involved here:

1. The user selects food type from a menu list.
2. They then type in details like food name, food quantity, approx. no of people fed, food description and total weight. Then they select date and time when it was cooked, approx. expiration date and time, and feasible pickup time range.
3. On clicking the submit button, all fields are validated according to their respective types and on successful validation, the item is added to the database.

Select Item Process Description

This sub-module is only present in the NGO module. It is a dependent sub-module which is dependent on login and register sub-modules. Its objective is to allow users to select favorable food items for pickup. The following steps are involved here:

1. User enters a food item ID of a favorable item.
2. If a valid ID is entered, the item gets selected after fetching details from the database. The NGO can then pick it up, this particular item won't then be available in the view list of other NGOs

Results and Discussion

We have successfully implemented the project. We have made an web application which will help us feed many poor children by managing waste food OpenCV, Keras and CNN Algorithm. The application will provide a platform for both mess and NGO to contact each other and then mess can put up all the waste food they have. NGOs can then later go on the site and check all the waste food available on site. The application can sign up a new user and login an old user.

Conclusion

There was a lot of food wasted from mess from many year. Now using our application this waste food can actually be managed in a proper way and many poor people will actually be able to sleep with full bellies. This will help many NGOs to do a good deed. This software is not a business model and is done totally in good faith.

REFERNCE:

https://www.sciencedirect.com/science/article/pii/S0301479715300256

https://www.sciencedirect.com/science/article/abs/pii/S0959652620339822

https://www.sciencedirect.com/science/article/abs/pii/S0959652616301536