

Food Share Portal

Project report submitted in partial fulfillment of the requirement for the degree of
Bachelor of Technology

In

Computer Science and Engineering

By

Manditya Singh(141251)

Mayank Abrol(141220)

Navpreet Kaler(141209)

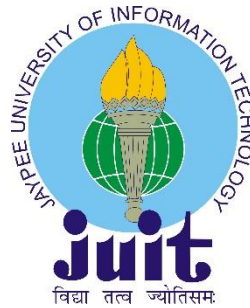
Parth Ahuja(141202)

Rohan Sharma(141301)

Syed Adil Alam(141218)

Sarthak Nagpal(141295)

to



Department of Computer Science & Engineering and Information Technology

Jaypee University of Information Technology

Waknaghat, Solan-173234, Himachal Pradesh

Certificate

Candidate's Declaration

I hereby declare that the work presented in this report entitled “Food Share Portal” in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering submitted in the department of Computer Science & Engineering and Information Technology**, Jaypee University of Information Technology Wanknaghat is an authentic record of my own work carried out over a period from under the supervision of Ms.Sona Bhandary.

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Manditya Singh(141251)

Mayank Abrol(141220)

Navpreet Kaler(141209)

Parth Ahuja(141202)

Rohan Sharma(141301)

Syed Adil Alam(141218)

Sarthak Nagpal(141295)

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Supervisor Name:

Designation:

Department Name:

Dated:

ACKNOWLEDGEMENT

Behind every achievement lies an unfathomable sea of gratitude of those who energized us, without whom it would never have come into existence. We would like to express our special thanks of gratitude to our Project Mentor Ms. Sona Bhandary who gave us the golden opportunity to do the innovative project. This helped us in doing a lot of research and we came to know about so many things and new concepts. Her advices have always lighted our path whenever we got stuck in our work. We cannot forget to thank our Batch Owner for her encouragement and time support and guidance. We would also like to thank all the faculty and staff of CSE department, JUIT Waknaghat, Solan for their support and help in providing the resources which were required. Also, we would like to extend our sincere esteems to all staff in classes for their timely support.

TABLE OF CONTENTS

Chapter No.	Title	Page No.
1.	Introduction	1
	1.1 Introduction	
	1.2 Problem Statement	
	1.3 Objectives	
	1.4 Methodology	
	1.5 Organization	
2.	Literature Review	4
3.	System Development	21
	3.1 Hardware Requirements	
	3.2 Software Requirements	
	3.3 System Development Model	
	3.4 Entity Relationship among table	
	3.5 Sequence diagram	
	3.6 Use Case Diagram	
4.	Algorithms and Performance analysis	27
	4.1 Algorithms	
	4.2 Performance Analysis and Results	
5.	Conclusions	35
	5.1 Conclusion	
	5.2 Future Scope	

ABSTRACT

The problem of food wastage is spreading in our country at an alarming rate. According to the stats, Indians waste as much food as is consumed by the entire UK and this can be easily evidenced by the mammoth garbage bins and refuse heaps we see every day. This all is the result of unthrifty expenditure of food at our big fat Indian weddings, family functions, lavish parties, hotels etc. According to the United Nations, 40 percent of the food produced in our country is wasted and still we have millions of people who go to sleep unfed. They are in a dire need of nourishment and as a solution to this we are proposing an idea where we can distribute food to such people through web itself. This paper presents an internet-based application wherein left over food, instead of being trashed is shared to the ones who need it. In our application, donor registers and then informs nearby NGO to collect their waste food and NGO further delivers that food to the starving folks.

LIST OF ABBREVIATIONS

NGO	Non-Governmental Organization
IDE	Integrated Development Environment
JDK	JAVA Development Kit
JRE	JAVA Runtime Environment
DTD	Document Type Definition
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheet
DAO	Data Access Object
JS	Java Script

CHAPTER 1

INTRODUCTION

1.1 Introduction

Food wastage is not only the manifestation of hunger and starvation but also of the economic enigmas associated with it. The affluent living and changing lifestyles is one of major cause of this wastage.

35 % of the global population between 3-16 years' age group are undernourished native in India. UNICEF stats that, approximately half the Indian population between 3-16 years' age group have below BMI (Body Mass Index) weight. As stated above, the 40 percent of the food is wasted and that is enough to feed approximate 300 million people – if executed, can definitely make a huge difference. According to municipal solid waste, municipal landfills are excessively filled with the waste food only. India was ranked as the 78th hungriest nation.

So the conspicuous solution is sharing this waste food instead of dumping it. This project helps in the achieving the same. It is a web based application that aims at charity through donations.

The location of the NGOs is entered manually and that of the donor's current position is fetched automatically using geo location. It will give us the coordinates (longitude and latitude) of the current position of the device and then will be converted to the proper address format.

1.2 Problem Statement

Keeping in view this amount of food wastage, this project contributes in minimize this wastage by donating it instead of disposing it. Whenever food is left over in large amount at any event, function or a restaurant, the owner will register himself to our website and after logging in, he/she will share the food details and select the nearby NGO. The selected NGO is notified who

require the google maps to fetch the NGOs within certain distance. Location of the food donor is also fetched automatically using maps.

1.3 Objectives

- To register the NGO and the food donor.
- NGO and restaurant is able to login.
- Restaurant is able to share details of the food to be donated.
- Restaurant/donor is able to fetch the list of nearby NGOs (within 15km).
- The selected NGO should be notified with the food details.

1.4 Methodology

This part covers the detailed procedure required to make the project productive. In order to access the project, SDLC (Software Development Life Cycle) is used.

Its main components are:

Planning:

- Collection of data.
- Hardware and software requirements.

Design:

- Converts the SRS into the system architecture which is viable and potent.

Analysis:

- Investigate the performance.
- Conclusion identification.

Implementation:

- Implement the test cases and test the project.
- Complete execution and implementation of project.

1.5 Organization

Chapter 1 highlights the importance of the project in preventing the food wastage. It emphasizes on the facts about how much food is wasted daily and still how many people still sleep unfed. So this project is a rescue for such a pathetic situation.

Chapter 2 explains about the skills required to make the project.

Chapter 3 describes about the system development which is one of the prime aspect of the project. It, in detail, explains about the development model, use case diagrams, hardware and software requirements as well as sequence diagrams required to explain the flow of actions.

The implementation and the algorithm is explained in **chapter 4** along with performance analysis. Methods as well as results are displayed for the complete analysis.

Finally, **chapter 5** concludes everything we did in the project as well as any further scope if it has.

CHAPTER 2

LITERATURE SURVEY AND METHODOLOGY

We are using Agile Software Development Life Cycle model for our project. Today Agile Model has overcome the limitations of the older Waterfall Model which restricted the changes once the project started. Most of the software development companies have oriented towards the Agile Model which is incremental and adaptive in nature.

Need for Agile approach:

- 1.Older models discouraged changes once project started.
- 2.Innovation involved was less.
- 3.Required big teams.
- 4.Working product could only be delivered at end.
- 5.Less interaction between the clients and developing team.

Agile software Development includes a small cross functional team of 6-10 members, which is self-organizing and cooperates with each other to give a partially working software to client after each sprint. It promotes adaptation to changes, continuous improvement, better interaction among client and developers and an early deliverable product.

Terminologies associated:

- 1.Product Backlog: It includes the requirements that are needed to develop a software.
- 2.Sprint Backlog: It consists of the tasks which the team will be doing in coming sprint.
- 3.Sprint: A project is divided into small units of time duration for completion of specific user stories. Each such unit is called a sprint. At end of each sprint a small deliverable is given to client.

Advantages of Agile Methodology:

1. Team and clients frequently interact with each other.
2. Changes are welcomed and is iterative in nature.
3. Working software delivered after every sprint.
4. Better cooperation and motivation among team.
5. Customer is satisfied by his involvement and can suggest changes.

For execution of this project, CSS, HTML, Java Script, Bootstrap, Angular JS, JSP was used.

2.1 HTML (Hyper Text Markup language)

Hyper Text is the text which is displayed on a computer which refers to some other text or image that any user can access whereas markup language is a collection of tags which assists the web browser in displaying text in a document.

HTML is a markup language that browsers use to interpret and combine text, images, and other styles into visual or audible web pages. Usual characteristics for every webpage of hypertext markup language are present in the browser, and these characteristics can be changed by the web developer with additional use of CSS.

HTML can publish documents with texts, headlines, images, videos, animations, etc., create forms as well as access online information via hyperlinks.

The skeleton of an HTML page is:

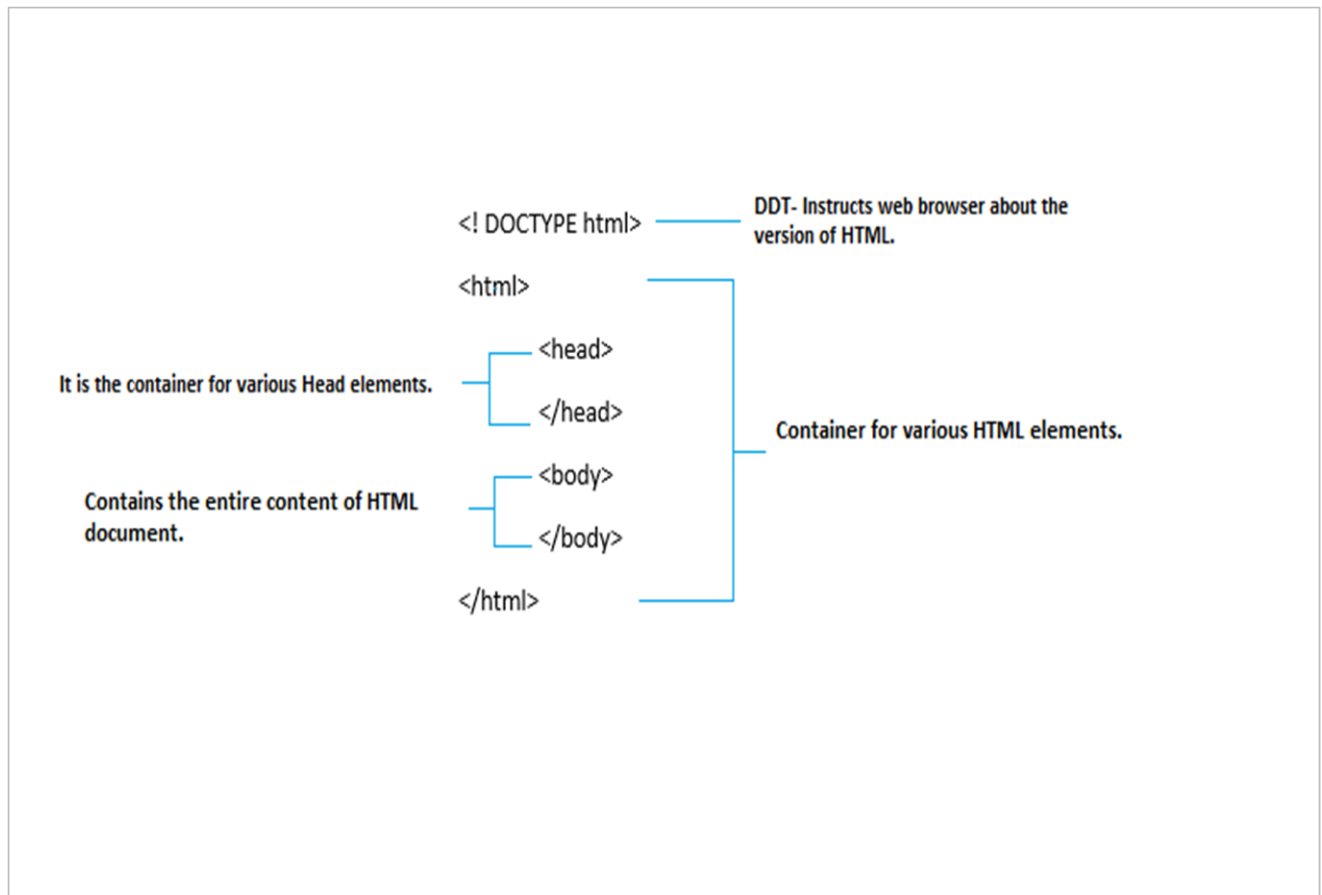


Figure - 2.1

Markup language contains of many key components, that includes those called “tags” (and their attributes), character references and entity references. Syntax of HTML contains opening and closing tags like `<h1>` and `</h1>`, although few shows empty elements and are unpaired, for example `` tag. Another vital component of the markup language is the HTML document type declaration, which activates standards mode rendering.

Several tags, generally needs the closing end tag for the very commonly used para element `<p>`, are not compulsory. Hypertext markup language browser can infer the closure for the last of an element from the information and the structural regulations by the HTML standard. These rulesets are difficult and not widely understood by most HTML programmers.

2.2 CSS (Cascading Style Sheet)

Cascading Style Sheet is designed to allow the segregation of presentation and data, that includes layout, colors, and fonts. This segregation can customize information comprehensibility, gives immense flexibility and control in the specification of presentation attributes, enable many web pages to share formatting by specifying the appropriate CSS in a separate cascading file, and reduce difficulty and repetition in the structural data.

Before CSS, nearly all displayable characteristics of HTML documents were maintained within the HTML markup. All attributes like font colors, background styles, element alignments, borders and sizes had to be explicitly delineate, often frequently, within the HTML. CSS lets programmers move much of that data to another file, the style sheet, resulting in considerably simpler HTML.

Inheritance is a vital feature in style sheet. Inheritance is the procedure by which properties are registered not only to a particular element, but also to the files that are using the style sheet. Inheritance depends on the document tree, which is the lineup of XHTML elements in a page constructed on looping. Descendant files inherit style sheet property values from any ancestor item containing them. Descendant item contains text-corresponding properties, but box-related functionalities are not inherited. Functionalities that can be inherited are color, font, line-height, text-indent, text-transform, white-space and word-spacing, text-align. Properties that cannot be inherited are background, border, display, float and clear, height, and width, margin and -width, outline, overflow, padding, position, text-decoration, vertical-align and z-index.

We can design good webpages using html and CSS but it has many disadvantages as well. Despite the fact that CSS is good with all programs, the level of similarity differs with each. This implies certain CSS highlights may not be bolstered by a few programs. So every time you plan a site, you have to guarantee that its appearance stays uniform crosswise over programs. All undertaking level applications are tremendous and hard to keep up. They have numerous site pages with various styling necessities. A few CSS templates are required for styling those pages. It is hard to oversee them, as the program similarity may fluctuate.

In CSS we can use a property “all” to set the values of all the properties to their initial values. But it isn’t compatible with browsers like internet explorer. So this is where we need something better to work with and this is where CSS frameworks come into existence. CSS frameworks are nothing but the complete package which makes the designing of webpages easier and makes web

pages supportive in all the browsers that we use. So, here we introduce Boot Strap - the CSS framework.

2.3 Boot Strap

Whenever you come across beautiful websites, it is the color, the background and many more things but most importantly it is the responsiveness of the webpages that attracts you the most. We have learnt so far that we can use all the stylings using the html and CSS. But, many a times we experience the different layouts for different sizes in the same website. The layout not only changes with size but also the device size i.e. whether the device is extra small like smartphones or medium ones like tablets or large computer desktops. This is possible with the help of Boot Strap only.

Boot Strap makes the styling more perfect. Using html and CSS also we could place buttons and other fields in our webpages but bootstrap makes them look more appropriate. In a way it makes your styling better as well as makes your webpages responsive thereby increasing its usability. Boot Strap makes us familiar with many classes that helps us doing so. It is actually a toolkit and that too open source that can be used to design webpages along with html, CSS and JS. It makes front end designing faster and easier. We are discussing about the responsiveness of the webpages but we actually need to know what responsiveness is. Responsiveness is making our webpages flexible for all window sizes i.e. making them to adjust in all the devices ranging from smartphones to large desktops.

Boot Strap is very advantageous to use for web designing. Anyone who is having the basic knowledge about html and CSS can work with the Boot Strap. In Boot Strap, the core framework also includes the mobile-first styles. It doesn't matter whichever browser you are using Boot Strap works with all of them. In the mobile first styles even the proper touch zooming is ensured.

It offers a lot many things like the most important Grid system, various typography classes and many UI components. Let us explore them in brief. If we talk about the responsive web pages, it provides us the best viewing experience in all devices. There isn't any content loss and moreover the content is not haphazardly arranged in any of the devices, instead the proper layout that has been set using boot strap is followed. So basically the layout will change its size depending on

the browser of the device that we are using and this scaling of layout includes the scaling of all the images also.

If we want to render all the content in the webpage properly, then we can use container classes. For placing the contents, we have 2 classes: first the container class-it is of fixed size and width but if we want to fit it to the whole screen i.e. the full width of the browser of the device we can use the second one i.e. the container-fluid class. Boot Strap also provides us the grid layout i.e. the screen can be divided into rows and columns. Using grid layout, we can divide the container into rows and rows can be further divided into columns. In Boot Strap each and every class matters a lot. If we divide the view into container and then row it gives us a different view as compared to the view directly divided into row and the difference in this case is due to padding. Similarly, if we divide container into row and then row into columns it gives us a different view where as if a container is directly divided into columns its entirely different. The column size is variable and can be varied with respect to the requirements. The grid layout can be adjusted for all sizes of devices i.e. for extra small devices-mobile phones, for small devices-tablets, for medium size devices-small laptops, for large devices-laptops, desktops etc. But, the maximum number of columns in a row could be 12 of equal sizes.

Typography refers to all the textual content that we add to our webpages. If we consider the typography in Boot Strap, the font size of and style is slightly changed as compared to the one in simple html and CSS. The headings have a size larger than that in simple html. Even the keyword “small” can be used in the headings so as to include the secondary text. We have various classes for setting up the size, alignment, and even transformations of text. The size of the text can be varied as we discussed above. We can even check for the alignment of the text whether we need to place it in the center of the division, left or right depending upon our requirements. Even if we want to emphasize on our text or provide some kind of additional information through it, like success message in green or error in red, we have many classes defined for the same. We can also transform the text to uppercase or lowercase using specific classes.

Using Boot Strap, we can add special designing to the tables also. If we want to make the bordered table or a compact one or even if we want to use hover for the rows, we have specific classes for each one of them. We can enhance the responsiveness of the tables also using

responsive class of table. Similarly, we can use classes to make images responsive and even change their shape to circular or image with rounded corners or thumbnail images.

Suppose we need a sign up or log in form in our web pages or even any other simple form, we can use Boot Strap classes to make the designing of UI components better. All the UI components like radio buttons, checkboxes can be made visually better and even be aligned in the same horizontal line or the vertical line. The designer buttons are available too and can be used with the help of various button classes. The most important component of the webpage the navigation bar can be made responsive with the help of Boot Strap classes only. Hence Boot Strap has in a way everything that we need to style our web pages and make our website attractive enough for the viewers and the users.

We can also display our dynamic content or dynamically route it to other pages. This could be done either using Angular JS or JSP.

2.4 Angular JS

AngularJS is a JavaScript framework. It is written inside the HTML document enclosed in a <script> tag. It extends HTML attributes with the directives and further binds data to HTML.

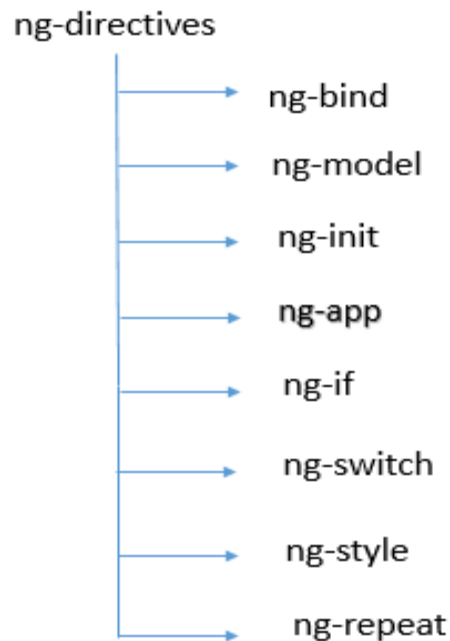
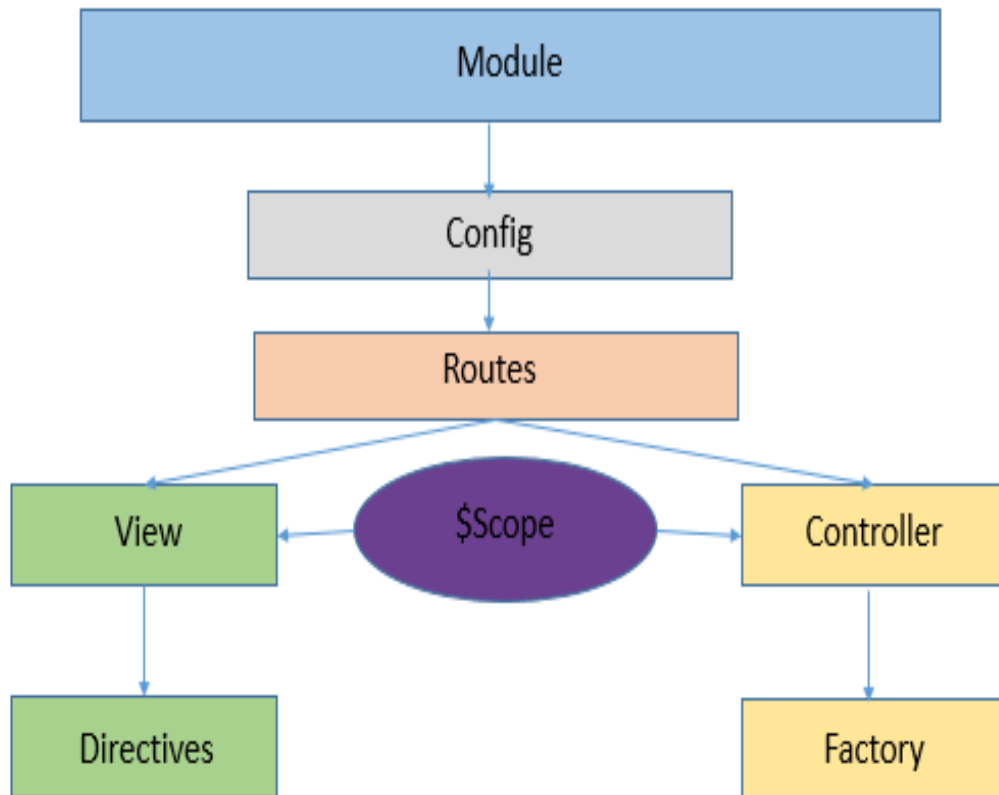


Figure- 1.2

- The ng-app directive is used to initialize the application.
- The ng-model directive binds the data entered in HTML. It's like a JavaScript object which can hold the values entered in HTML form.
- The ng-init directive is used to initialize the application data.
- The ng-bind directive is used to retrieve data from the model.
- The ng-if directive is used to manipulate the DOM by writing the conditions.
- The ng-switch directive is used for the same purpose as ng-if by displaying the multiple options.
- The ng-style directive is used to style some text.
- The ng-repeat directive is used to create a DOM element for every iterated element.

2.4.1 Modules, scopes and controllers



2.4.1.1 Modules

Module act as a container for different parts of the web app-services, filters, directives, controllers, etc. Applications contains a main method that instantiates and binds the different parts of the application together. Unlike other applications Angular JS doesn't have a main method. Rather modules are specified in such a way that how an application should be bootstrapped. There are enormous benefits to this approach:

- Declarative processes are easier to comprehend.
- Code can be packaged as reusable modules.
- Since, Modules delay execution order of loading module is random.
- Unit tests only loads relevant modules, which keep them fast.
- To override configuration, end to end tests use modules.

2.4.1.2 Scopes

Scope is an object that refers to the application model. Scopes copies the DOM structure of the application. Scope propagate events. Scope are able to watch expressions. Few characteristics of scope are as follows:

- \$watch- Scope provide APIs to scrutinize model mutations.
- \$apply- Scope provide APIs to disseminate any model changes through the system.
- Scopes supply context against which expressions are calculated.
- Scopes are used to limit access to the properties of web app components while supplying admission to shared properties.

2.4.1.3 Controllers

In AngularJS, a controller is defined by a JS constructor function that is utilized to augment the Angular JS scope. Controller are joined to the document object model in several ways. For every way, AngularJS will start a new object, using the defined controller's constructor junction.

- ngController- A new child scope is generated and is made available as an injectable parameter to controller.
- Route controller- It is used in \$route definition.
- The controller of component or regular directive.

2.4.2 Built in filters in AngularJS

There are various in built filters in AngularJS such as:

- Filter- Chooses a subset of things from exhibit and returns it as another cluster.
- Currency- Arranges a number as a money (ie \$2,897.68). At the point when no cash image is given, default image for current district is utilized.
- Number- Configures a number as content.
- Date- Configures date to a string in light of the asked for organize.
- JSON- Enables you to change over a JavaScript question into JSON string.

- Lowercase- It converts any string to lowercase.
- Uppercase- It converts any string to uppercase.
- Order By- Returns an exhibit that contain things from the predefined gathering, requested by a comparator work in light of the qualities registered utilizing the articulation predicate.

2.4.4 Directives and their Corresponding Scopes

Directives follow the scope hierarchy. At the application level, ng-app directive created a scope called as \$root scope. But some directives in angular like ng-repeat, ng-if, ng-view will create a new scope, which will be added as a child to their parent's scope.

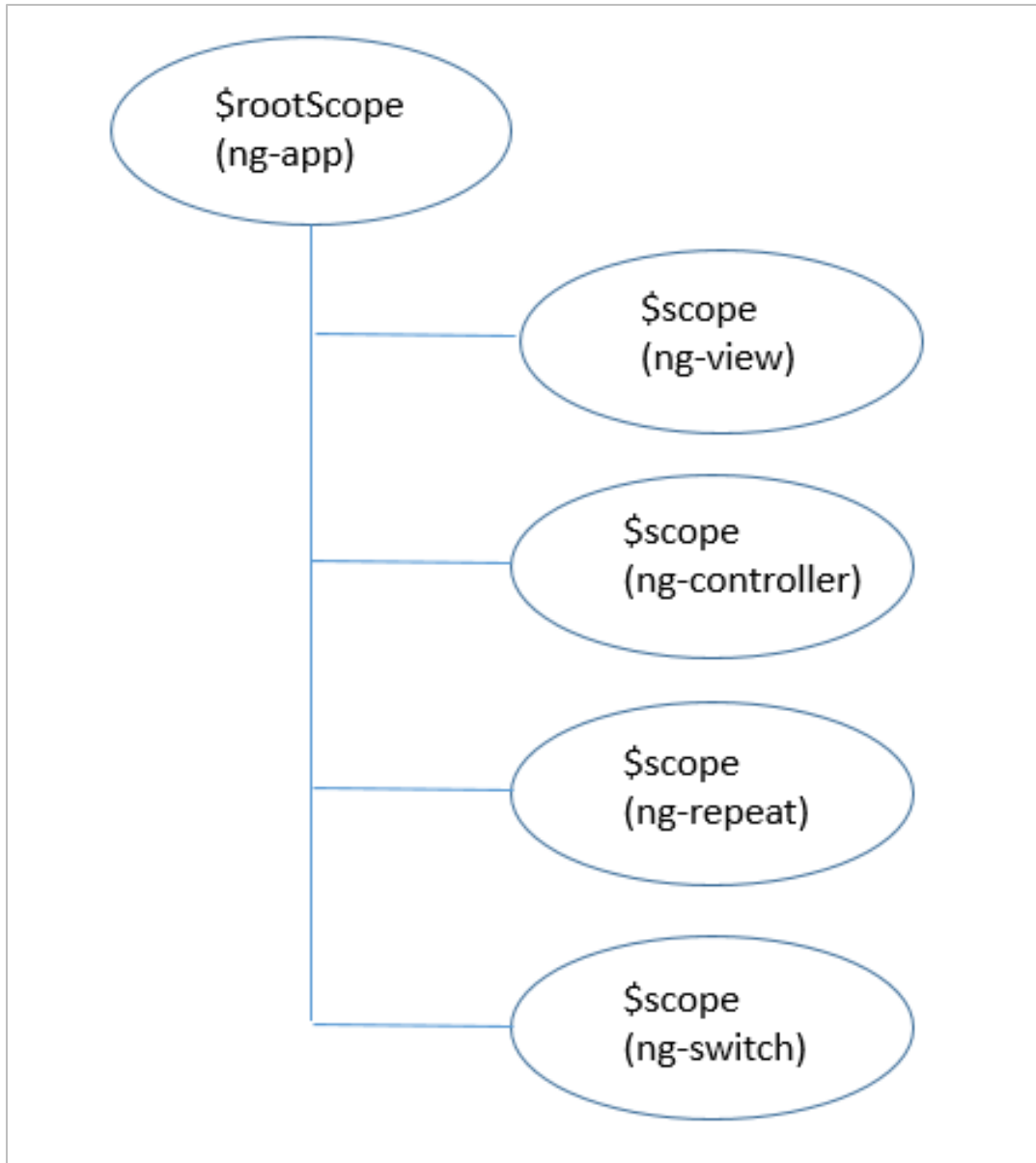


Figure- 1.3

2.5 JSP

JSP i.e. the Java Servlet Pages is used for designing web pages only but the only difference is that the web pages in this case are dynamically generated. As the name suggests, it uses java technology only. A JSP Page consists of the tags of html and tags of JSP as well. Here in JSP,

the design and the development code can be written separately thereby making them better than servlets.

A Java Server Pages segment is a sort of Java servlet that is intended to satisfy the part of a UI for a Java web application. Web engineers compose JSPs as content documents that consolidate HTML or XHTML code, XML components, and implanted JSP activities and orders. Utilizing JSP, you can gather include from clients through Webpage frames, introduce records from a database or another source, and make Webpages progressively.

JSP labels can be utilized for an assortment of purposes, for example, recovering data from a database or enlisting client inclinations, getting to JavaBeans parts, passing control amongst pages, and sharing data between demands, pages and so on.

JSP pages can be utilized as a part of blend with servlets that handle the business rationale, the model bolstered by Java servlet layout motors. At long last, JSP is an indispensable piece of Java EE, a total stage for big business class applications. This implies JSP can have an impact in the least complex applications to the most mind boggling and requesting.

There is a specific path followed by all the JSP's in their lifetime. They are compiled in the beginning. After compilation, they are initialized, and it is after this initialization that execution takes place. Once the successful execution takes place, clean ups can be done. If we consider about the compilation phase, At the point when a program requests a JSP, the JSP motor first verifies whether it needs to gather the page. In the event that the page has never been gathered, or if the JSP has been changed since it was last assembled, the JSP motor arranges the page. The aggregation procedure includes three stages –

- Parsing the JSP.
- Transforming the JSP into a servlet.
- Incorporating the servlet.

At the point when a holder stacks a JSP it summons the JSP Init() strategy before adjusting any requests. Typically, introduction is performed just once and as with the servlet init technique, you for the most part in state database associations, open documents, and make query tables in the jspInit strategy. This period of the JSP life cycle speaks to all cooperation's with demands until the JSP is wrecked. At whatever point a program asks for a JSP and the page has been

stacked and instated, the JSP motor summons the `jspService()` technique in the JSP. The pulverization period of the JSP life cycle speaks to when a JSP is being expelled from use by a container. The `jspDestroy()` strategy is what might as well be called the decimate technique for servlets. Abrogate `jspDestroy` when you have to play out any cleanup, for example, discharging database associations or shutting open records.

2.6 Google API

Google API is a set of methods and tools that can be used in various projects based on different platforms. There are many services provided by Google as API's for user's convenience.

In some cases, it is necessary to obtain the credentials from the Developers Console whereas in some the access is free.

These tools make programmers able to perform operations using google API and living within their development framework. You can use its maps API, google feeds API, google search API and google friends connect which makes it easy for customers.

2.6.1 Geocoding:

Geocoding is a service provided by Google to convert the addresses into geographic coordinates which can be displayed on the map using map markers.

Geocoding is a time and resource intensive task. For Geocoding you need a API Key.

Parameters required in Geocoding Request: Address, Key, Bounds, Language, Region, Components.

2.6.2 Reverse Geocoding:

The process of translating the location on a map into a human readable address is termed as Reverse Geocoding.

Parameters required in Reverse Geocoding: Latlng, Key, Language, Result_type, Location_type.

One thing should be ensured that no spaces exists between the latitude and the longitude values when passed in the Latlng parameter.

2.6.3 Distance Matrix API:

Service given by google that provides travel distance and time for a matrix of origins and destinations.

It returns the information based on the recommended route between start and end points, as calculated by the google Maps API and consists the duration and distance values for each pair.

Parameters required for Distance Matrix API are: Origins, Destinations, Key.

You can also specify the Travel Modes then the distances are calculated accordingly but we this isn't used within our Project.

2.6.4 JavaScript Map API:

It provides with the facility of letting the users customize maps with their own content and imagery for display on different devices.

2.7 Java Service Layer:

The above discussions complete our front end technologies used for the application but, if we consider the backend, then we need to check for java code that we have used for the development. The html, CSS, Boot Strap make the front end better while JSPs and Angular make the dynamic content available for us. But, this dynamic content is generated from the back end only i.e. the database. The front end validations are mandatory and have been included but we also need to perform such operations in the back end. Also, we need to have an interface between the database and the front end. It is the service layer of the Java Enterprise Application and DAO layer of Java Enterprise Application that are responsible for actual interfacing between both of them.

If Service layer is considered, it first of all needs the bean class, which demarcates the objects where we can store the information that has been retrieved from the front end. So, the API layer does the interfacing between the controllers of angular and the service, it sends the data to the service layer and retrieves the same from there wherever required. The service layer actually receives the data, but now to further pass on this data to DAO layer, we need objects. Hence, bean class is needed.

When the data is received from the API file, the service layer first creates a bean class object, and stores all the data to the data fields in the objects. If any validations are to be performed, the validator can be added. Once the validations are done, an object of DAO class can be created using Factory class, and from there depending upon the operation, the function of DAO layer can be called.

2.8 Java DAO Layer

Once the object of DAO layer is used to call the function in the DAO implementation class, the function needs to be defined here. It is the DAO layer where the sessions are created and data is saved to or retrieved from the databases directly. But, the data received here was in the form of objects of bean class but we cannot insert the bean class object directly to the tables present in our database. So, we construct Entity classes that have been mapped with the tables that we are using to store our data. So, in persistence tier, i.e. the DAO layer we basically create entity class objects, store the whole data into their data fields and it is these objects that are used to write data to the tables, thereby making our input and output possible. In the DAO layer, we can use Hibernate and create queries and basically perform all the operations that are needed to be performed for the project.

2.8.1 Hibernate

Using Hibernate within a java application, we can store and retrieve data from/to a database. Such activities where a program needs to associate with outer situations like records, database, I/O gadgets, and so forth are called as Input/output (I/O) tasks. In an I/O task source and goal can be anything that holds, creates or devours information, e.g. document framework, application program, fringe gadgets like console, comfort, and so forth. Java I/O API utilizes streams to perform I/O tasks. Stream is a succession of information, which streams from source to goal. The

information can be of various kinds like basic bytes, crude information writes, Java objects, and so forth. Hibernate is an open source ORM execution for Java engineers which takes after JPA measures.

The mapping of the Entity class with the tables is the part of Hibernate only. The primary key column is mapped with the corresponding instance variable and the other instance variables are mapped with the corresponding columns in the table. Once the mapping is done and the properties configured all we need to do is, follow some of the steps to perform the persist operation. Initially, we have to create the instance variables of session and sessionFactory and then define the context of the transaction. Once this is done then, we can add the data to the data fields of the entity objects, but this should be done in an open transactions and then the session and sessionFactory can be closed. Transaction interface provides a variety of method that can be used like begin()-to begin a transaction, commit()-to save the changes and rollback()-to undo the changes.

Similarly, if the data has to be retrieved from the database, it could be done in the same way. But, the data can only be retrieved within a session and that too only in entity object. Information can be recovered from the database table as far as comparing substance example by conjuring the get() strategy for Session interface. If we consider the get() method, It restores the occasion of the given substance class with the given identifier esteem. It returns invalid if there is no such record exist in the database. There is another method called the load() method. If we need to delete the details or any record from the database then we have the delete() function. For erasing the client subtle elements of the recovered client (stage 4), you have to summon delete() technique for the Session interface. It acknowledges the protest which should be erased (recovered substance question). The delete() technique ought to be summoned inside a dynamic transaction .The delete() strategy causes the execution of SQL DELETE when you commit() the Hibernate Transaction.

CHAPTER 3

SYSTEM DEVELOPMENT

3.1 Hardware Requirements

The minimum requirements needed to perform operations are:

- Intel Pentium Processor at 2Ghz or higher.
- RAM 256MB or more.
- Hard disk capacity 10GB or more.

3.2 Software Requirements

The software required to perform the implementations are:

- Windows or Linux Operating system (Ubuntu, Fedora).
- JDK 8 and above.
- Eclipse/ NetBeans IDE
- Visual Paradigm

3.3 Software Development model

Agile development model is used for software development. It is a group of software development methods in which the SRS and its solutions evolve through collaboration between cross-functional and self-organizing teams. It encourages robust planning, mutative development, before/on time delivery, continuous improvement scope, and promotes quick and flexible response to change.

Figure 3.1 describes the methodology of this agile development model whereby each iterations delivers some features.

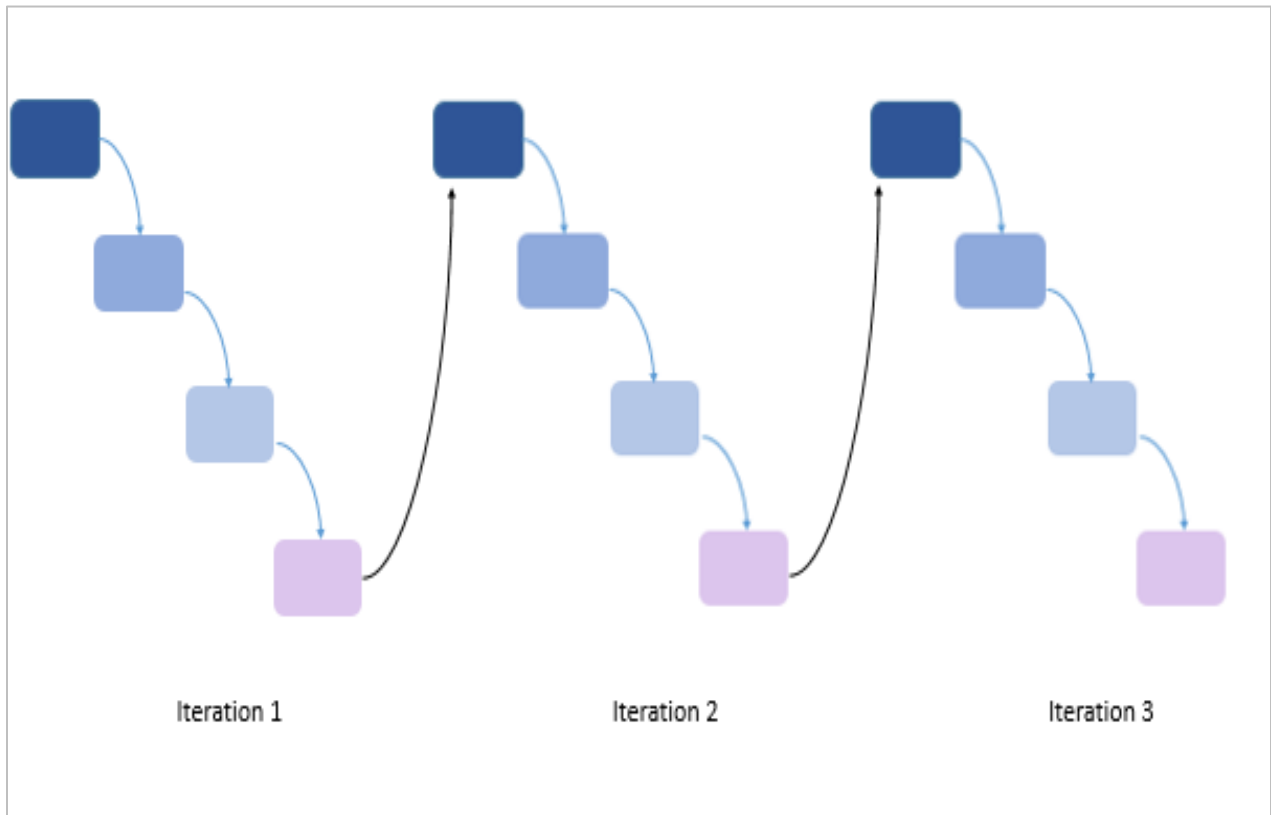


Figure 3.1

3.4 Entity relationship among the tables

Figure 3.2 represents the entity relationships among the tables.

- Food and food detail has many to one relationship.
- Food Details and restRegistration has many to one relationship.
- NGORegistration and FoodDetails has one to many relationship.

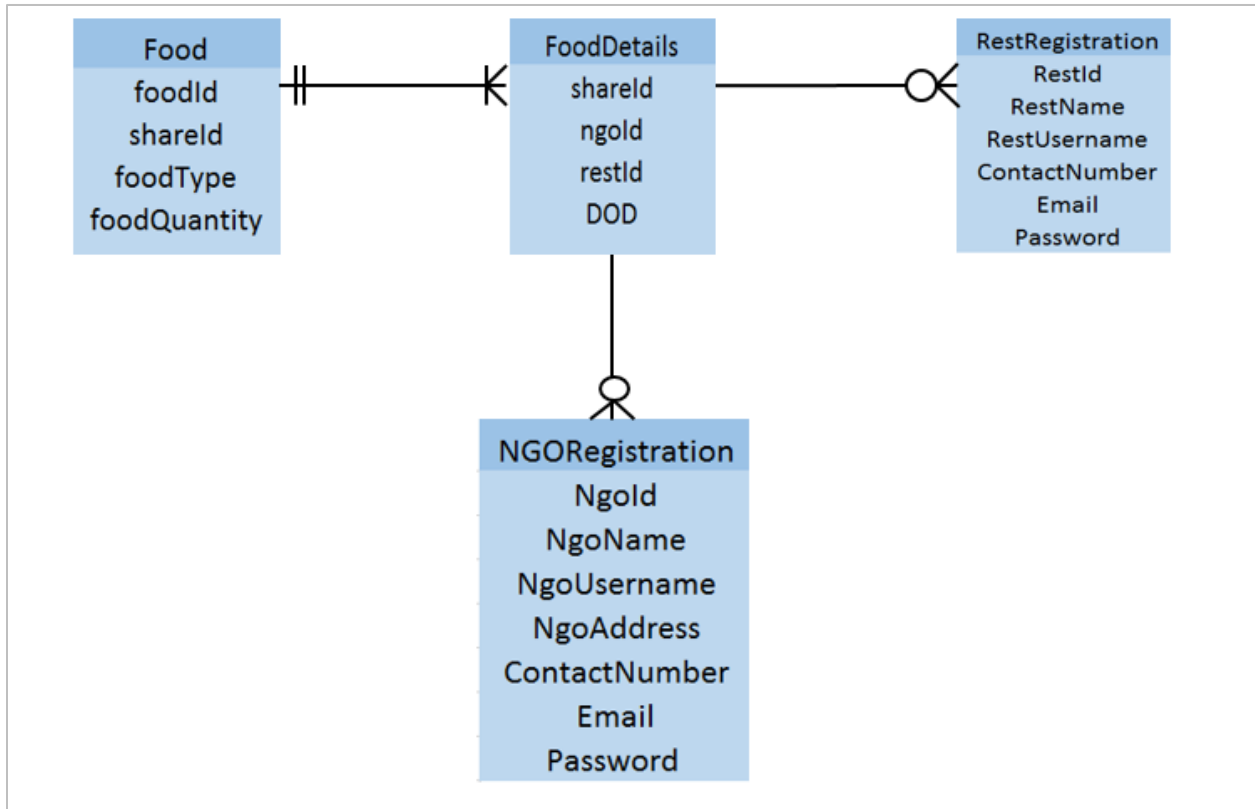


Figure-3.2

3.5 Sequence diagrams

3.5.1 Sequence diagram of login and registration of NGO and controller

Figure 3.3 represents the actions and functions involved while the user login and registers.

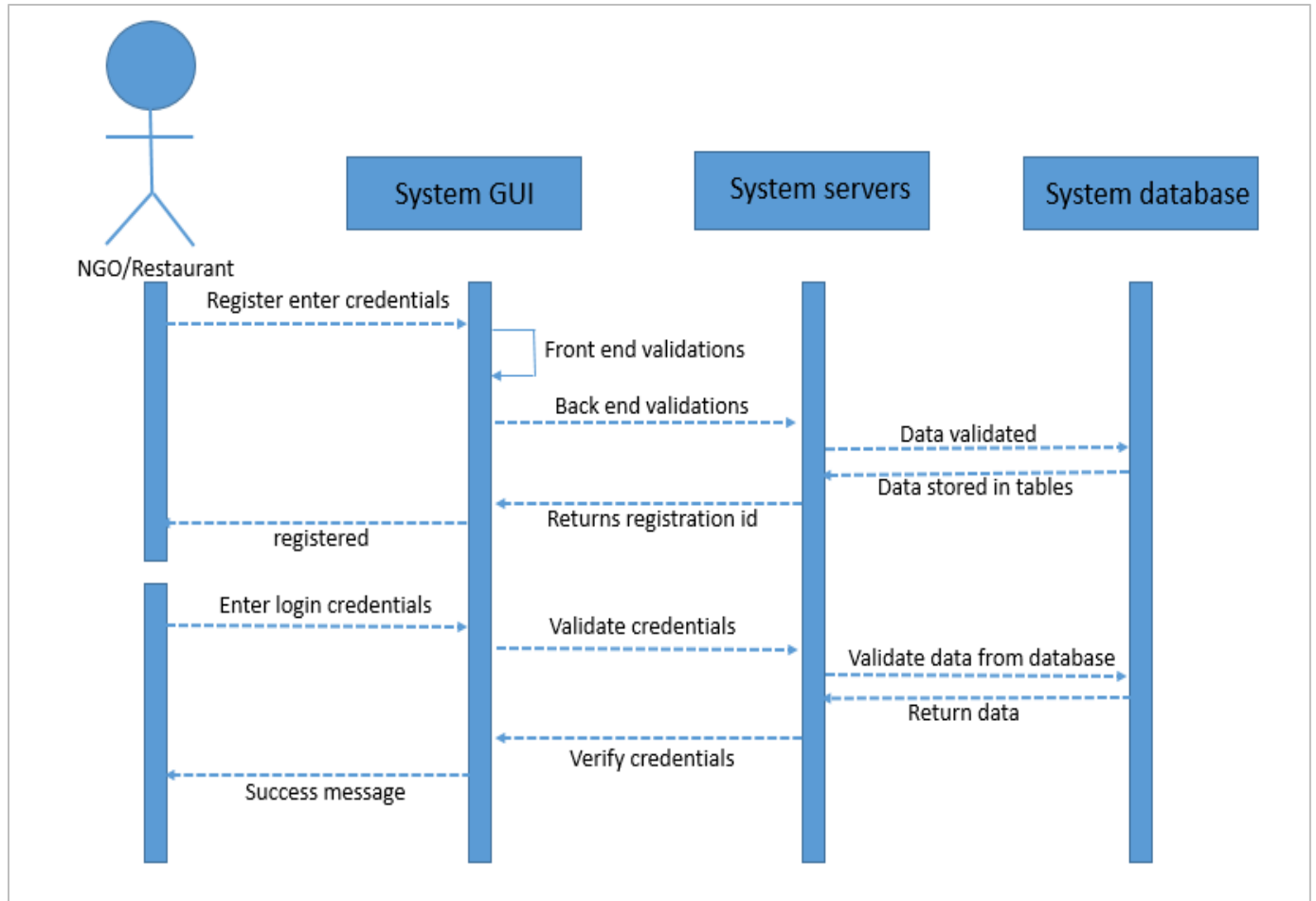


Figure-3.3

3.5.2 Sequence diagram for food donation

The activities and functions involved while donating food is represented in figure 3.4. It includes entering the food details which are stored in the database in food detail table and food table.

After successful insertion of data in the table, the message is displayed to the end user about the successful donation.

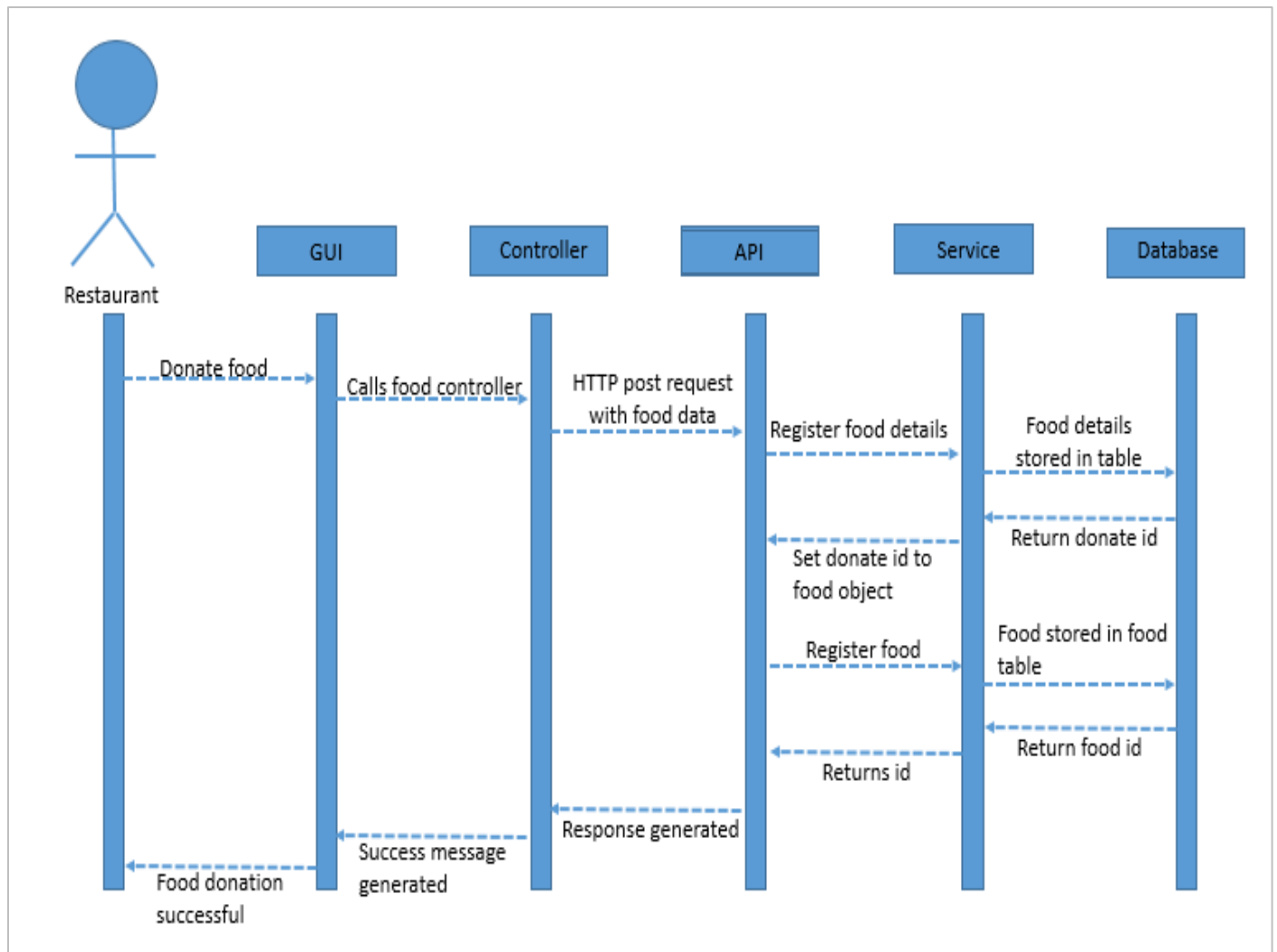


Figure-3.4

CHAPTER 4

ALGORITHMS AND PERFORMANCE ANALYSIS

4.1 Algorithm

4.1.1 Algorithm for Registration of NGO/ Restaurant

Steps:

- User clicks the registration link.
- A form appears which prompts user to fill his/her:
 1. Username
 2. Address
 3. Contact Number
 4. Email Id
 5. Password
- After filling the details, form is submitted.
- The details go to the NGOController/ RestauarantController accordingly.
- HttpPost method redirects the details to the corresponding method of API.
- From API, the service layer method 'register' is called.
- In service class method, the DAO layer method 'register' is called with form details (bean class object) sent as a parameter.

- In DAO class method, the session object is created and then following steps are performed:
 1. Entity object is created.
 2. The entity object is set with the help of bean class object.
 3. The transaction is begun with the help of session object as:
Session.getTransaction().begin()
 4. Then it is saved or persisted using:
Session.save(entity class)
 5. Finally, the transaction is committed:
Session.getTransaction().commit()
- Following the above stated steps, the registered details are stored in the NGORegistration/ RestRegistration table as shown in figure 4.1 and return the primary key 4(automatically generated).

RestId
Name
Username
Contact Number
Email Id
Password
Address

Figure-4.1

- The primary key (restId), which is auto-generated, is sent back through all the layers and finally added in the response object of API class.
- The response object displays the success message on successful registration of the user along with the registration Id.

4.1.2 Algorithm for Login

- User enters the login details which are sent to the API through corresponding controller.
- API sets the session object to the value of username.

- API calls the service layer which in return calls the DAO method ‘login’. Inside this method, with the help of HQL query, the row (username and password) from table is returned in the list.
- If the list is empty, it returns false, else it returns true and Response object is set accordingly.
- In API, the success response results in setting the window session storage value to the username and redirecting the page to the profile page in case, true value is returned.

4.1.3 Algorithm for Donating Food

- To donate food, user clicks the donate button and the controller is called wherein the window session storage value(username) is retrieved and is sent to the API along with the list of food items (food type list and is corresponding quantity list) as shown in figure 4.2.

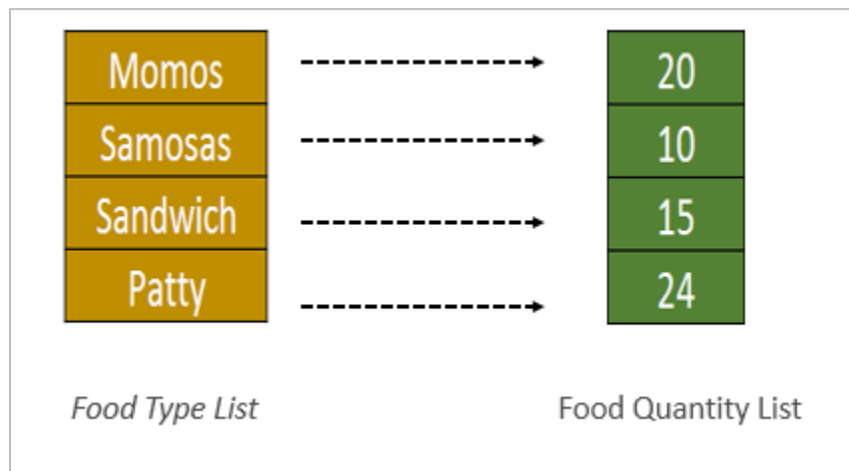


Figure-4.2

- Food bean object is set with both the lists. API calls the service method with food bean object passes as parameter. Service method further calls DAO method ‘foodDetailRegister’.

- This method persists the food detail entity in the table and returns the TransactionId (primary key) back to the service layer.
- The id returned is set to the food object's transaction Id. Now, again the DAO class method foodRegister is called with food bean object as a parameter.
- For each item in list, there has to be separate row in a table, thus values in both the lists are mapped to a hash map with food type as key and quantity as value.
- For each entry in map, a new row is persisted in a table with same transaction Id as shown in figure 4.3.

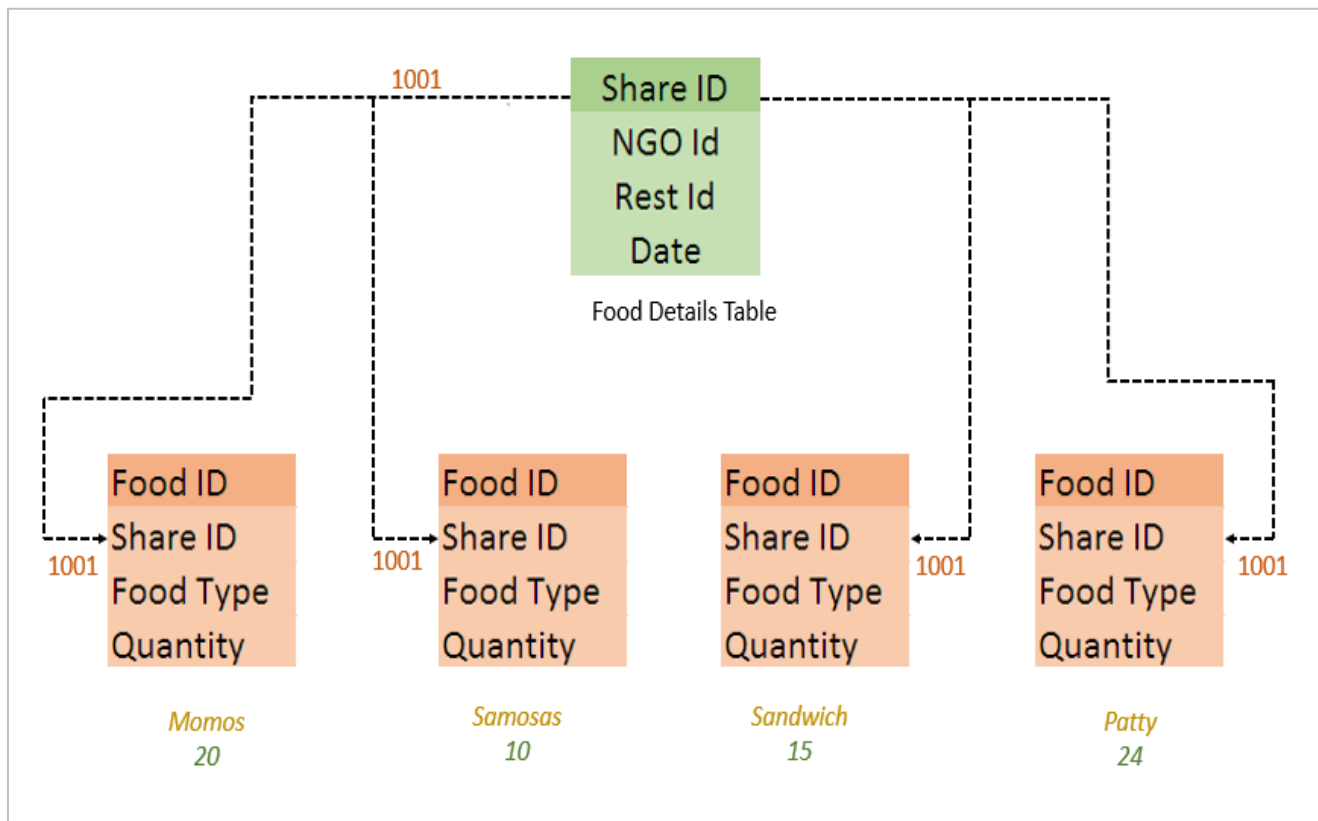


Figure 4.3

- After all entries are stored in the table, primary key of foodDetail table(donateId) is returned to the service layer and then back to the API and finally added to the response object and a success message along with this donate id is displayed to the user.

4.1.4 Algorithm for fetching NGO list

- When the user is about to Donate, the user clicks on GET NEARBY NGO button.
- This calls the JSP function where all the NGO names are fetched from the database. These values along with their location are stored into an array in JavaScript.
- The address is then passed to the Geocoder function which returns the Latitude and Longitude values of each NGO.
- The Location of the restaurant which is donating is passed to the Distance Matrix function when the Restaurant clicks on the Donate button.
- Each NGO Latlng from the JS array is passed to the Distance Matrix one by one and the distance between Restaurant and corresponding NGO is calculated.
- All the NGO's are populated into the List using JavaScript along with their distances in meters.

4.2 Performance Analysis and results

4.2.1 Home Page

Whenever the project is run, home page as shown in figure 4.4 will be displayed. It has a navigation bar containing links for home, about us, contact, donate, volunteer. It also contains statistics about malnourished people.

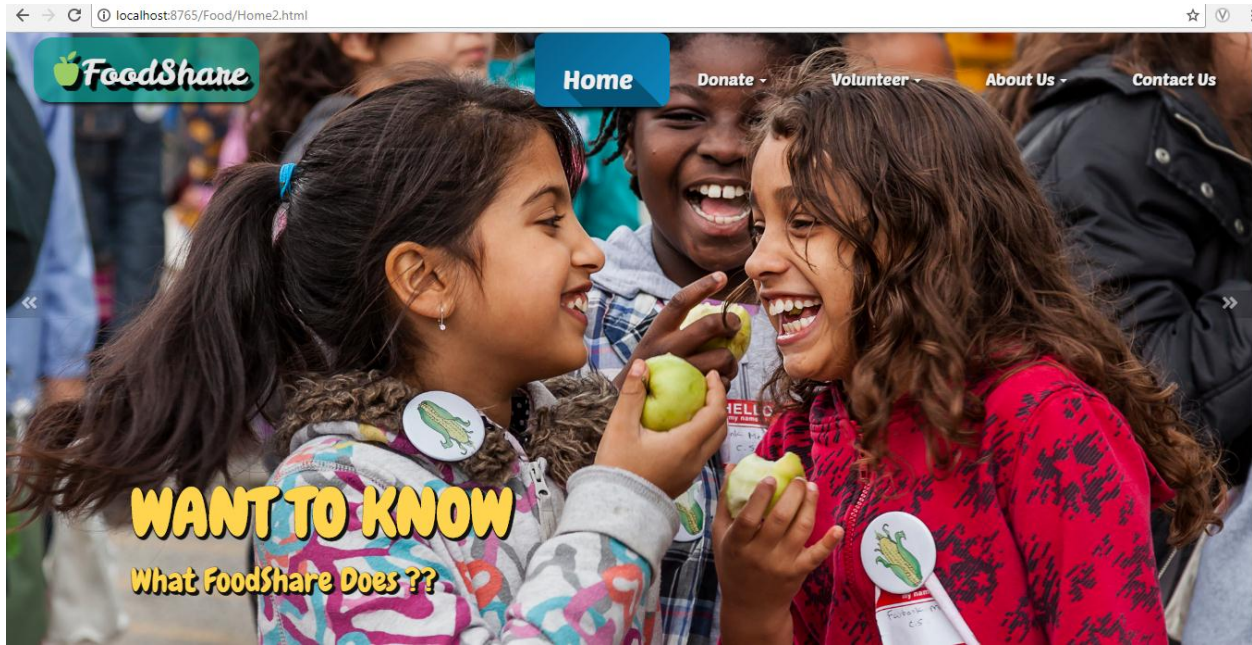


Figure-4.4(a)



Figure-4.4(b)

Registration page appears as shown in figure 4.5

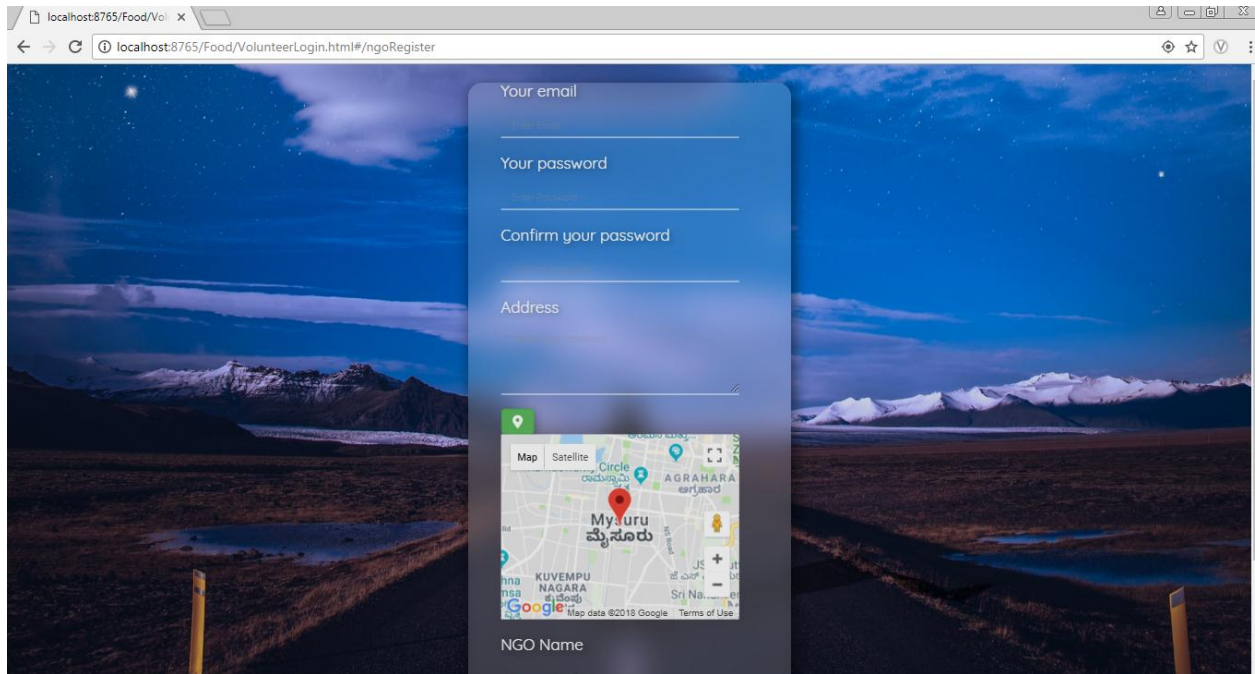


Figure 4.5

The donor after logging in, can donate food by entering the food details and then clicking the donate button as shown in figure 4.6. NGO list is fetched with the help of distance matrix and result is all the NGOs within 15km of range.

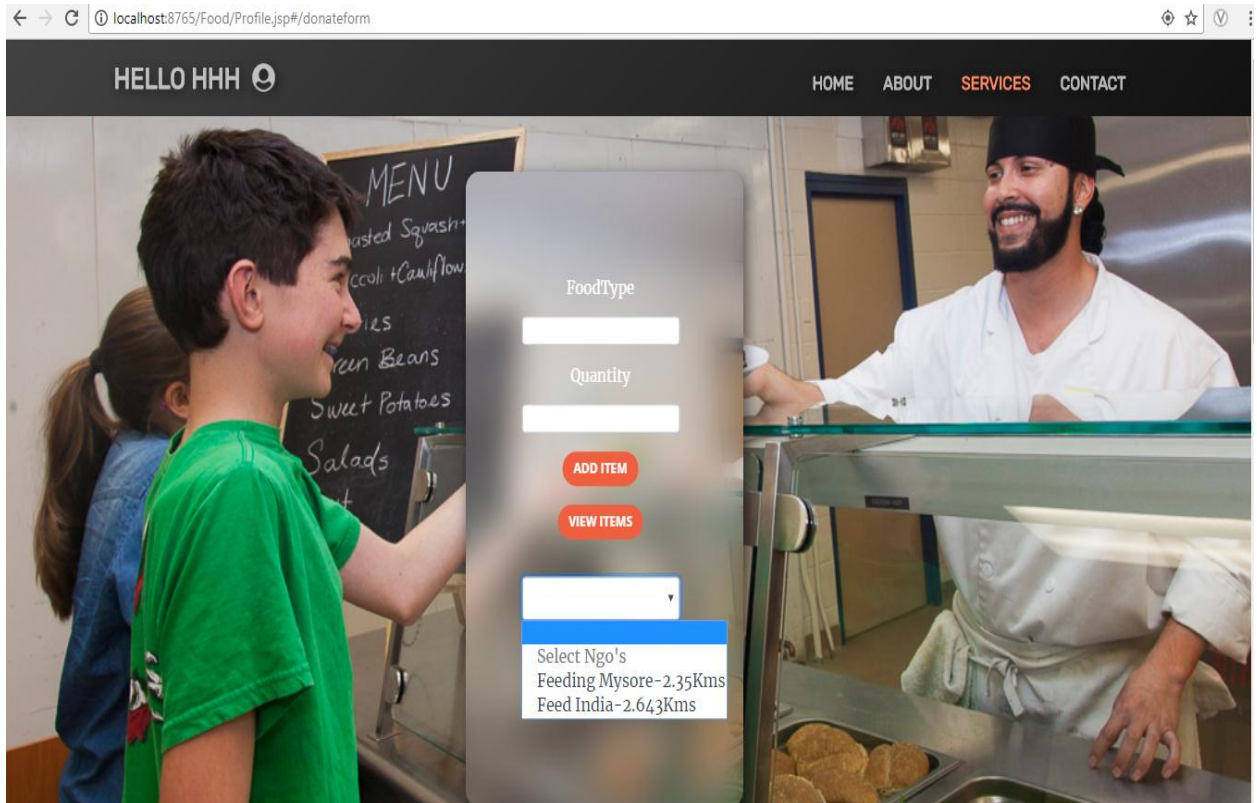


Figure- 4.6

The about page of the user is as shown in figure 4.7.

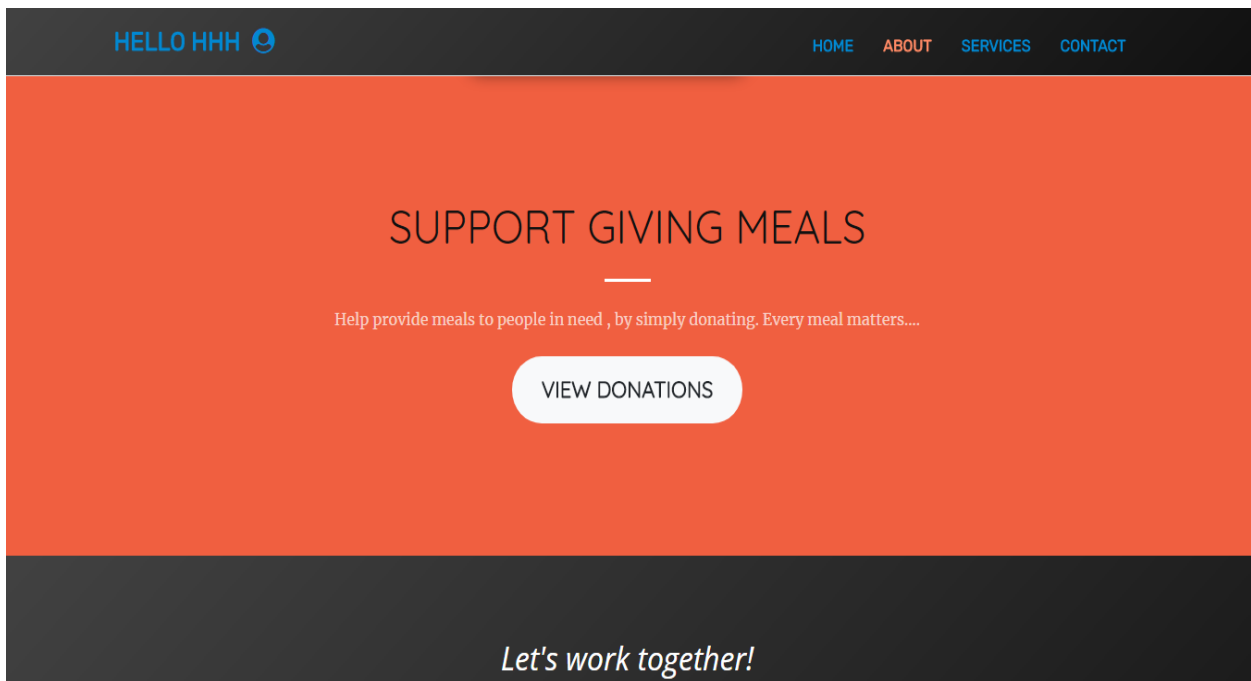


Figure 4.7

CHAPTER 5

CONCLUSION

5.1 Conclusions

Since food wastage is becoming really a serious problem, there is an urgent need to stop the wastage and instead of disposing it, it should be used to feed the hungry people around.

And we can see there is so much of food wastage during family parties, functions, weddings and of course at restaurants. In big luxurious hotels, the snacks they serve in rooms, even if they are untouched, all of that is thrown in garbage daily without considering the fact the food was unused and fresh. And if this amount of food from every hotel can be served to poor, there will be hardly any possibility of starvation in this nation. This project does

exactly the same thing- just collect food from the restaurants/ functions and serve them to the needy ones.

5.2Future Scopes

This application can be converted to the mobile app, so that it becomes easier to share food. It can be extended further by adding additional functionalities like:

- Tracking the device location of the NGO owner who is coming to collect the food.
- Once the NGO has collected the food, the time and date should be stored instantly in database for any future reference.
- After donating the food, the data should be included dynamically in the stats section of the home page so that it can be referenced by other users.
- This project has a limitation- once the user clicks add items, the previously entered items are instantly stored in the backend. We can further improve it by allowing the donor to perform changes to the data/ food details provided.

REFERENCES

[1] Eloquent JavaScript 3rd Edition by Marjin Haverbeke referred to Chapter 7th and 15th for JavaScript Concepts.

[2] Infosys Learning Platform.

[3] W3School for JavaScript Learning.

[4] Google Maps Platform

