A Project Report on

Transforming Agriculture With Technology

Submitted in partial fulfillment of the requirements for the award
of the degree of

Bachelor of Engineering

in

Information Technology

by

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Amisha Karia (15104008)
DhruvKumar Patel (15104026)
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Under the Guidance of

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UNIVERSITY OF MUMBAI

Academic Year 2018-2019

Approval Sheet

This Project Report entitled **"Transforming Agriculture With Technology"** Submitted by **"Amit Prajapati"(15104014), "Amisha Karia"(15104008), "DhruvKumar Patel"(15104026), "Lavina Budhwani"(16204019)** is approved for the partial fulfillment of the requirement for the award of the degree of **Bachelor of Engineering** in **Information Technology** from **University of Mumbai**.

Prof. Nahid Shaikh   Prof. Rujata Chaudhari
Co-Guide   Guide

Mr. Vinayak Narkar
Guide

Prof. Kiran Deshpande
Head Department of Information Technology

Place:A.P.Shah Institute of Technology, Thane
Date:

CERTIFICATE

This is to certify that the project entitled *"Transforming Agriculture With Technology "* submitted by *"Amit Prajapati"(15104014),"Amisha Karia"(15104008), "DhruvKumar Patel"(15104026),"Lavina Budhwani"(16204019)* for the partial fulfillment of the requirement for award of a degree **Bachelor of Engineering** in **Information Technology**,to the University of Mumbai,is a bonafide work carried out during academic year 2018-2019.

<div style="display:flex; justify-content:space-between;">

Prof. Nahid Shaikh
Co-Guide

Prof. Rujata Chaudhari
Guide

</div>

Mr. Vinayak Narkar
Guide

Prof. Kiran Deshpande
Head Department of Information Technology

Dr. Uttam D.Kolekar
Principal

External Examiner(s)

1.

2.

Place:A.P.Shah Institute of Technology, Thane
Date:

Declaration

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, We have adequately cited and referenced the original sources. We also declare that We have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

_____

(Signature)
Amit Prajapati (15104014)

_____

(Signature)
Amisha Karia (15104008)

_____

(Signature)
DhruvKumar Patel (15104026)

_____

(Signature)
Lavina Budhwani (16204019)

Date:

Letter by Warehouse Owner

Dinesh Shah – 9825308133   Dhansukh Patel – 9825479932
Arvind Patel – 9825182246   Govindbhai Patel – 9879242529

PARASMANI COLD STORAGE PVT. LTD.

Regd.Office:- Dhwani weigh-bridge, Modasa Road, Dahegam,
Dist:- Gandhinagar, Gujarat. Phone No. :- 02716 - 230133

This is to certify that we, PARASMANI COLD STORAGE PVT. LTD are agreed with the idea of these students to create an online inventory system and also we will provide with all the informtion required by the students of A P Shah Institute of Technology for the Project entitled "Transforming Agriculture using Technology". This system will give more visibility and will help to reduce the efforts taken by the farmers to search a warehouse leading to much reliable way in replacement to the offline warehouse management.

Group Members

1. Amit Prajapati(Group Leader).

2. Amisha Karia.

3. DhruvKumar Patel.

4. Lavina Budhwani.

PLANT:- Block No. 521/1, Babalpura, Village - Sampa, Dahegam- Rakhiyal Road,
Dahegam-382305. Dist:- Gandhinagar, Gujarat.

Letter by Farmer

This is to certify that the project entitled "Transforming Agriculture Using Technology" undertaken by the students of A P Shah Institute of Technology will be beneficial to farmers and will help them to get the storage space in much easier way. I have helped them with the queries they had with their project and also agreed to their idea of creating an inventory system online.

Group Members

1. Amit Prajapati(Group Leader)
2. Amisha Karia
3. DhruvKumar Patel
4. Lavina Budhwani

K.D. PATEL

Kanti Devsi Patel

(Farmer)

Abstract

In India, farmers have to search for the warehouse manually by visiting available warehouses in nearby location to find place for grain storage, this consumes a lot of time, efforts and money. If the particular warehouse accommodation is full then they need to visit various warehouse in search of space.

So we came up with the thought of making a site or application where in farmers can see online warehouse storage facility, crop suggestions,etc. So our solution will help Indian farmers to avoid problems such as waiting in long queue to get the space in warehouse for storage.The basic idea behind our project is to give an online web based application to the farmers so that he can get the storage space faster without much wasting of time, money and efforts. AgriTech will also give a notification to the farmer regarding the expiry of stored goods in particular warehouse according to their lifespan. The system will be a multilingual for understanding of farmers. It will also provide them with informational videos regarding how to store grains at small scale if they cannot afford the price of warehouse, also a forum that can be utilized by the farmers to share their problems and get the solution for the same.

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w-owner: Warehouse Owner

Chapter 1

Introduction

Online storage space booking for grains will allow the farmers to ensure that the space is booked and so he can then transfer the grains to warehouse storage.It is a web based application that will allow the farmers to store their crops in a warehouse. Using our system they can book space for their goods which can save both time and money of a farmers. Farmers can check availability of space and can directly approach to the nearest warehouse for storage. AgriTech will also help the farmers to take decision about which warehouse he should select based on the passed data analysis and geographical location using Machine Learning.We are providing a forum wherein farmers can discuss their problems and get their solution which will lead to formation of a farmer's community. Our system has a Super-Admin to take care about validation on warehouse owner also a particular farmer.Our application will be a user friendly application so that the farmer can use it easily with convenience. The purpose of this project is to provide online store so that the grains which are produced are stored properly and wastage of grains is avoided.The main users of this website will be farmers, warehouse owners and Super-Admin. It will help the farmers to get the storage space online so that they can book the space in warehouse for grain storage in advance. This will help them to sell their products at profitable rate and they will get the proper income because if the storage space is real time it will reduce the efforts taken by an individual farmer to search space for storing their goods. It will help the farmers for weather analysis i.e. they will be getting the weather related information which will help them to take various precautions related to their crop cultivation. Also we are going to provide some alternative solution videos on our forum and community page from which they will get help how to use that solutions and the farmers have privilege to add any comments or give suggestions.

1.1   Objectives

The objective of our project is to provide an application or a web based service of warehouse booking system for crops storage to farmers. Using our system they can book warehouse space for their goods which can save both time and money of a farmers. Farmers can check availability of warehouse space and can directly approach to the nearest warehouse for storage. Also a site which is multilingual and will provide a forum to discuss various problems amongst the farmers is also the objective. Weather Analysis system for predicting crop cultivation which will help the farmers to gain more profit by cultivating that particular crop in that weather condition.

1.2   Scope

It will help the farmers to get the storage space online so that they can book the space in warehouse for grain storage in advance. This will help them to sell their products at profitable rate and they will get the proper income because if the storage space is real time it will reduce the efforts taken by an individual farmer to search space for storing their goods. It will help the farmers for weather analysis i.e. they will be getting the weather related information which will help them to take various precautions related to their crop cultivation. Also we are going to provide some alternative solution videos on our forum and community page from which they will get help how to use that solutions and the farmers have privilege to add any comments or give suggestions.

1.3   Overview

It is a real time system for warehouse management which will provide a dynamic interface to the farmers to show the real time status of the space available in the warehouse in there nearest locations and also it will allow them to book their desired space. From this online booking of space in the warehouse the farmers will be able to manage their time and also the travelling expenses for going again and again to various different warehouses for checking the availability of the space. So farmers will be going there some amount of time and money. Once the farmers have selected their desired space and stored the goods after that they will also get the alert messages, from those messages the farmers will be able to know till what period its crop is sustainable.

Chapter 2

Literature Review

We did the on-site survey where we visited various warehouses, had a word with farmers and concluded that they are facing some problems for storing the grain, and they need to travel alot if the warehouse booking is full which ultimately leads to wastage of time and money. So we came up with the idea of giving an online interface to the farmers, so that they can book the storage space online, get a crop prediction, also a forum where in they can discussion the problems to the various solutions.

Igor Oliveira, Renato L. F. Cunha, Bruno Silva, Marco A. S. Netto have presented a paper at 14th IEEE eScience entitled "*A Scalable Machine Learning System for Pre-Season Agriculture Yield Forecast*". They have implemented a Deep Neural Network (DNN) using machine learning model to predict Pre-Season Agriculture Yield Forecast.This system is a very useful tool for farm management and can help stakeholders to perform critical decisions in their agricultural operations.Their results show that farmers and agriculture stakeholders can benefit from useful information with significantly fewer data requirements and maintain useful accuracy values. They have give two contribution, first to check the yield forecast system based on fewer data requirements compared to existing yield forecast solutions which demand large amounts of remote sensing data and the capability of forecasting yield before the beginning of the crop season.

Pamidi Srinivasulu, R Venkat,M. Sarath Babu, K Rajesh have presented a paper at 2017 International Conference on Electrical, Instrumentation and Communication Engineering (ICEICE2017) entitled "*Cloud Service Oriented Architecture (CSoA) for Agriculture through Internet of Things (IoT) and Big Data*",they used various technologies like Big Data, Internet of Things (IoT), Cloud Computing, etc which is proving to be a big boon to the farmer who otherwise is made to undergo a tough time in view of lack of the technology that he/she should have been adapted by this time. They provide service like crop management, marketing, finance management, e-commerce,web services through cloud etc. which also will reduce the unemployment problem in the youth.It also makes agriculture not only a profession for living but also a profitable sector in the globe which further enhances the GDP.

Shreya S. Bhanose, Kalyani A. Bogawar, Aarti G. Dhotre,Bhagyashree R. Gaidhani have presented a paper in INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH AND ENGINEERING TRENDS,—— Volume 1 ——Issue 1 ——April 2016——ISSN (Online) 2456-0774 "*Crop and Yield Prediction Model*" using data mining algorithm like k-Means, k- Means++ and traditional k-Means for crop and disease prediction as well as predict crop water requirement.By Modifying the cluster algorithm they have improve the accuracy of a system as it achieves the high quality clusters duet initial cluster centric selection.In this proposed, they have to change existing algorithm like K Mean clustering algorithm because Traditional clustering algorithms such as k-Means, improved rough k-Means and-means++ makes the tasks complicated due to random selection of initial cluster center and decision of number of clusters.

S.Pudumala, E.Ramanujam,R.Harine Rajashreeń, C.Kavyań, T.Kiruthikań, J.Nishań have presented a paper at 2016 IEEE Eighth International Conference on Advanced Computing (ICoAC) entitled "*Crop Recommendation System for Precision Agriculture*". Precision agriculture is a modern farming technique that use research data of soil characteristics, soil types, crop yield data collection and Suggests the farmers the right crop based on their site-specific parameters.This system reduces the wrong choice on a crop and increase in productivity. By growing the grain which is soil specific will give the farmer more yield and ultimately more financial profit. They have used data mining algorithms- Random Tree, CHAID, Naive Bayes and K-NEAREST NEIGHBOR to do the processing of data set and come to a result.

Prof. D.S. Zingade,Omkar Buchade,Nilesh Mehta,Shubham Ghodekar,Chandan Mehta has presented a paper at International Journal of Advance Engineering and Research Development Special Issue on Recent Trends in Data Engineering Volume 4, Special Issue 5, Dec.-2017 entitled- "*Crop Prediction System using Machine Learning*" using data analysis techniques. The proposed project provides a solution for Smart Agriculture by monitoring the agricultural field which can assist the farmers in increasing productivity to a great extent. Weather forecast data obtained from IMD (Indian Metrological Department) such as temperature and rainfall and soil parameters repository gives insight into which crops are suitable to be cultivated in a particular area. This work presents a system, in form of an android based application, which uses data analytics techniques in order to predict the most profitable crop in the current weather and soil conditions. The proposed system will integrate the data obtained from repository, weather department and by applying machine learning algorithm: Multiple Linear Regression, a prediction of most suitable crops according to current environmental conditions is made. This provides a farmer with variety of options of crops that can be cultivated. Thus, the project develops a system by integrating data from various sources, data analytics, prediction analysis which can improve crop yield productivity and increase the profit margins of farmer helping them over a longer run.

Chapter 3

Proposed System

Proposed System is divided in four major module and we are going to form network of these
four different module for more reliable communication in our system. The four core modules
are as follows:
1. Farmer
2. W-Owner
3. Super-Admin
4. Intelligent System

- **Farmer**
  AgriTech is more focused on the farmer that's why the main user of our system will be a
  farmer. When Farmer want to use our service then he has to enter the details required
  to do the registration with Mobile No which will be use as key point of user verification
  if require.All the entered data will be sent to the server for validating particular user
  and it will also check whether the user is register or not. It will be check by making
  request from Web Server to database server which have Registered User Data.After
  checking the response from the database server if the user is already registered then
  the user can access the web application by Login into our system using credentials.If
  user does not exist in the Register User Database then data will be store in database
  and user will be registered. Once user will submit the details user will get OTP for mo-
  bile verification using SMS API on the Phone no which they have used for registering
  to web application. After entering the OTP our system will validate the OTP if user
  submit correct OTP then he will be redirected to the login page where user have to
  enter the username and password.When user will click on the login button username
  and password will be sent to the server for verification. If the login parameter will
  matches with the Register User Data present in database then user will be login and
  login session will be started. Once farmer will login first time he must complete the
  remaining details for enabling warehouse booking service using their location.Location
  of the user will be send to the server and the location of the user will be compared with
  the location of warehouse.and result will be sent to the user. Here we can use location
  API so that appropriate farmer location is sent and results are generated accurate.
  Farmer will view the warehouses which are nearby to there own location and check
  out space availability and book them accordingly.After finalizing ever aspect he re
  queries,he will then click the book button for the warehouse which he wishes to
  book.Once selected a plot for booking the user have to pay certain token amount

within a particular period of time or else the system will revoke the booking of that slot for payment user will be directed to the payment portal. When a token amount is paid by user ,she/he will now alloted the chambers in the warehouse.In my booking they can view booked space and the time period for which they have booked the chamber.We are going to provide them crop recommendation according to the weather analysis.We are going to collect the data for weather analysis and then store it to our website and according to the weather we will recommend farmers for the crop cultivation.We are going to provide them alternate solution videos for storage if the farmer is not able to pay the rent then he/she can simply watch the video and can make some sort of small storage in there house itself.

- **Warehouse Owner**
  Owner have to enter the details required to do the registration and also have to fill the Aadhar detail. It is mandatory while filling the details the owner has to provide the location. Once the warehouse-owner have entered the details then it will be sent to the server for checking that the particular user is valid owner and also not a registered owner and that server will be handled by the super admin. If the w-owner is already registered then the w-owner will receive a prompt that the w-owner is already existing.If w-owner does not exist then w-owner will be registered and w-owner will receive an OTP on their entered mobile number.
  Now w-owner will enter the no of chambers and the capacity of chambers. W-owner can edit,remove or change status of the chamber. When a user books space in the warehouse w-owner will receive the notification. W-owner can also view the users who have booked the chambers in their warehouse. W-owner can view the transaction history of the warehouse.If w-owner owns multiple warehouses so he/she can add the other warehouse and its details.

- **Super-Admin**
  The super admin has all the rights to control the farmer and the w-owner. The super admin will receive the complaints from the farmer and also from the w-owners. Once the complaints are received the super admin will work on it and provide them the perfect solution for the problems they are facing. The super admin is going to provide the analysis report to the owner and the farmer once the analysis is provided to them they are going to get the notification. As the weather analysis report is generated it is going to be sent to the higher authorities for the verification i.e the report is sent to the government.once it is verified then it is going to be displayed on the website also if the report include some important notice that will be sent to all the website users via a notification using ML system. The super admin is going to generate the survey report. Super Admin can also accept and reject the valid or invalid profile of warehouse wowner. If Super Admin will reject the Warehouse Owner Project then that Warehouse Owner's warehouse will be disabled from the system.

- **Intelligent System: Heart of Warehouse Management System**
  Intelligent System is center point of Our Warehouse Management System. Intelligent system will send the notification to all farmer about crop suggestion and weather prediction. System will also generate auto report whenever Super Admin will click

on Generate report button, all the analysis will be summarize and visualize for under stability for higher authority where Super Admin will send the report for verification. This all functionality is very much important and Intelligent system will perform all this activities that's why we called it as Heart of Warehouse Management System.

- **Multilingual**
  The system that we have proposed is a multilingual web based application. The main aim to make our site multilingual is that, most of the farmer don't know English so we are providing them the choice to opt for the language they desire. This will make it more reliable and convenient for farmers and warehouse owner to use the site with flexibility. We are giving them option to choose Hindi, Gujarati, Bengali, Marathi, etc and much more languages.

- **Weather Prediction**
  After doing analysis of various sites available for farmer's welfare and progress we came up to the conclusion that giving them a weather prediction would be useful to help them for crop management and cultivation. We are using Dark Sky API for weather prediction. It gives prediction of 7 days of weather. The obtained weather forecast will be sent to the farmers via messaging by the Super user or Super Admin of our website. The message will be sent them to their registered numbers which will ensure that the message will be received by the authorized farmer.

- **Location based filtering**
  Location based filtering of warehouse is an important part of farmer module wherein he will be able to search for the desired and location specific warehouse. It is done using google location API where total 5 API are there which works together to generate the location. The API used to generate location are Places, Distance Matrix, Maps JavaScript, Direction, Geocoding API. The farmer will enter the location and based on that the warehouse will be shown along with the distance and capacity available.

- **Data Analytics**
  To provide the user with much user friendly site, data analytics is the important as we are more emphasising on the data visualisation part. For farmer, the capacity of available and filled chambers in warehouse is shown with visual component. The warehouse owner will be also show with bar graphs and pie charts the warehouse he owns, the filled and used capacity. The superadmin will also get the same visualisation component and also weather for 7 days. This visualisation of data helps them to understand the things in a much easier and convenient way.The analysis is based on the data that is available from the database.

- **Crop Recommendation System**
  For crop recommendation system, focused on more productivity to the farmers. We have gathered the government datasets available so that we can provide a location based prediction of crops to the specific farmer based on his location. For example, if a farmer stays in location say thane, our system will fetch that location of farmer and based on that it will provide him the crops that he can grow based of the weather and other parameters of that specified location.

- **Payment Portal**
  The payment portal will play a major role when the farmer has finished his booking

and now he has to pay the rent or cost for the storage he had for crops. The invoice will be generated based on the utilisation of chamber for days and that amount will be calculated and invoice will be given so that he can proceed for payment.
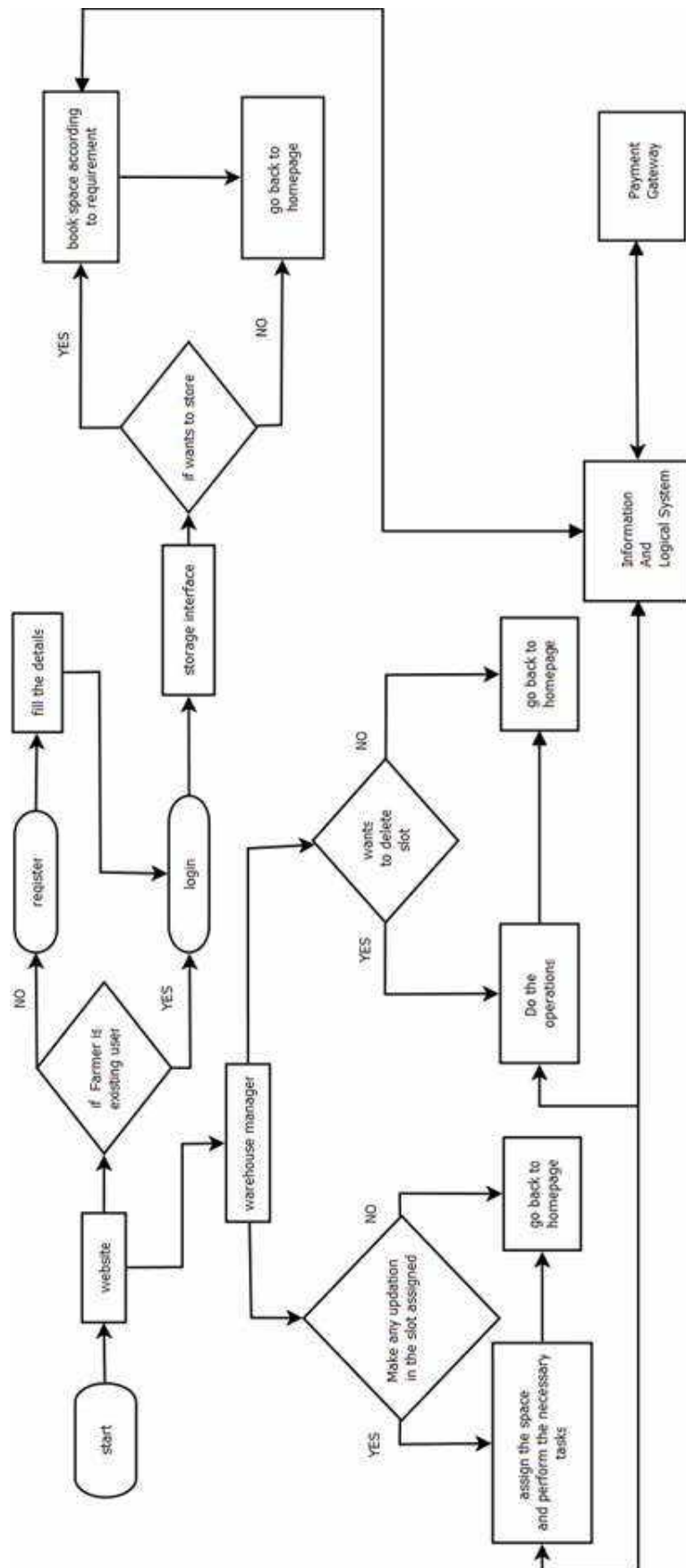
Figure 3.1: Block Diagram for Transforming Agriculture with Technology

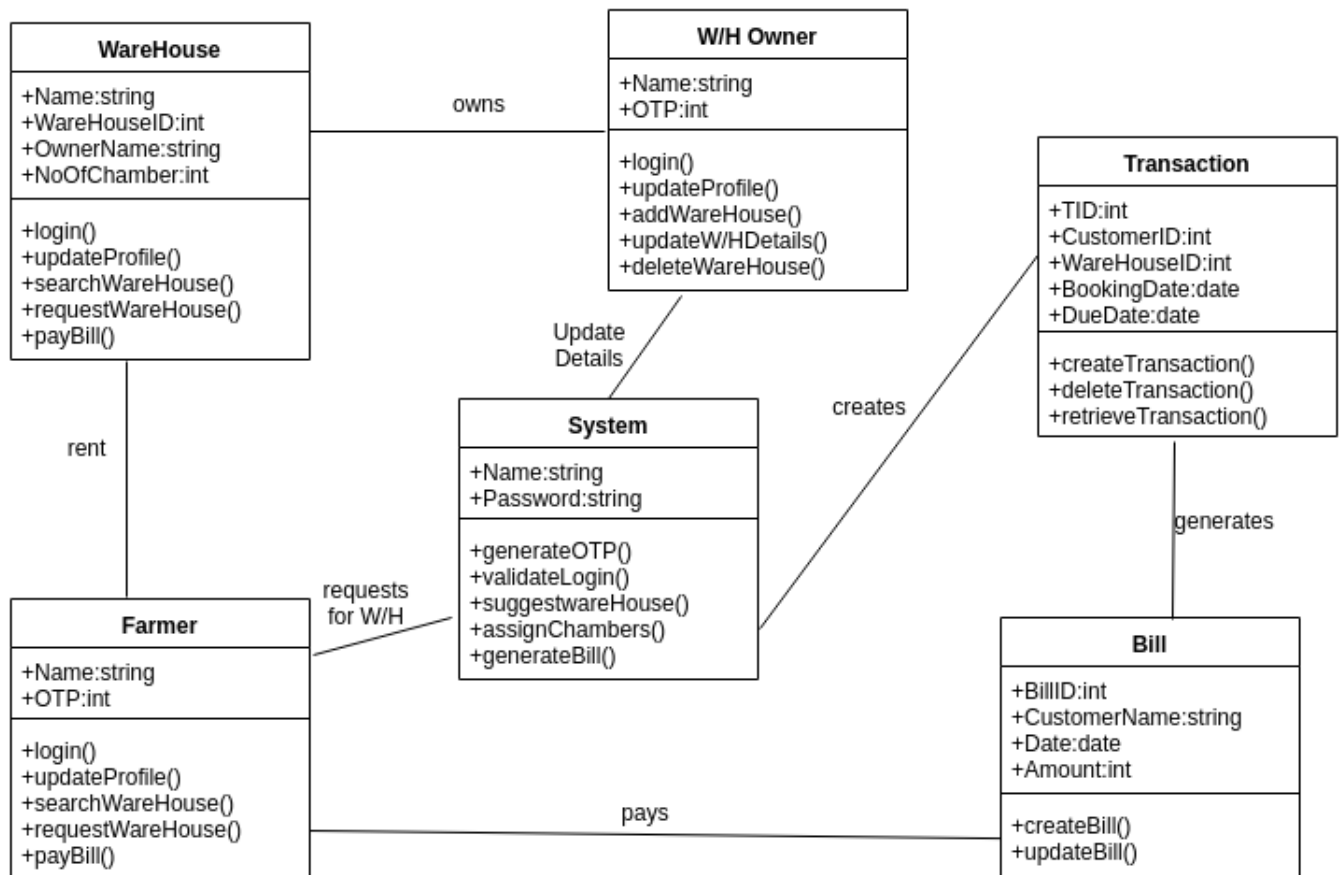# Chapter 4

Design

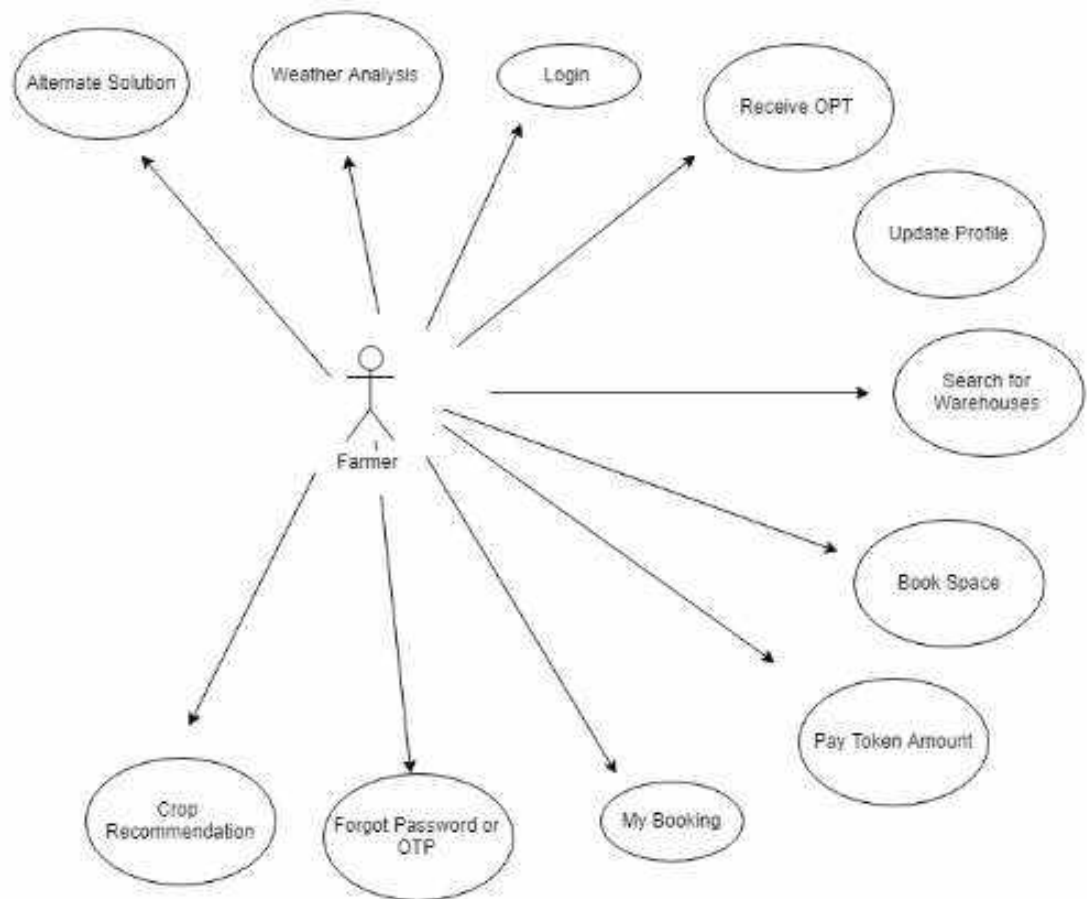## 4.1   Class Diagram

Figure 4.1: Class Diagram

4.2 Use Cases

Figure 4.2: Use Case Diagram of Farmer

Above figure shows the use case diagram of farmer.It shows the flow of a user as farmer that is how he will be able to register himself on our website and also verification by OTP is done and after login he can use our site's functionalities.
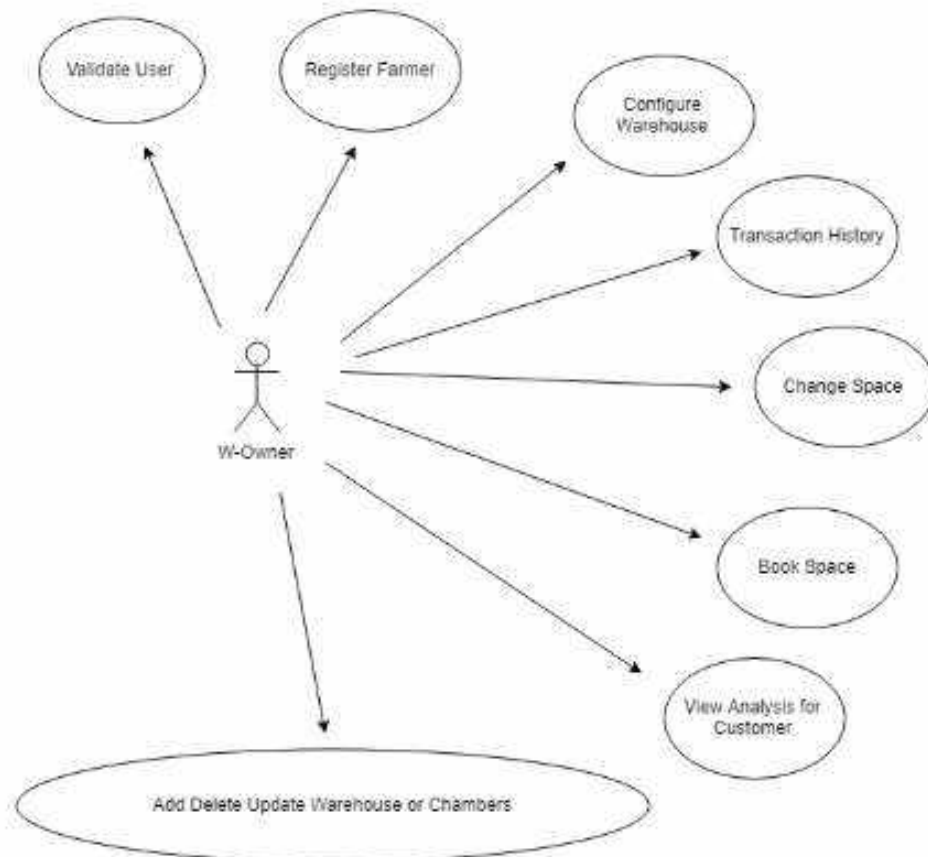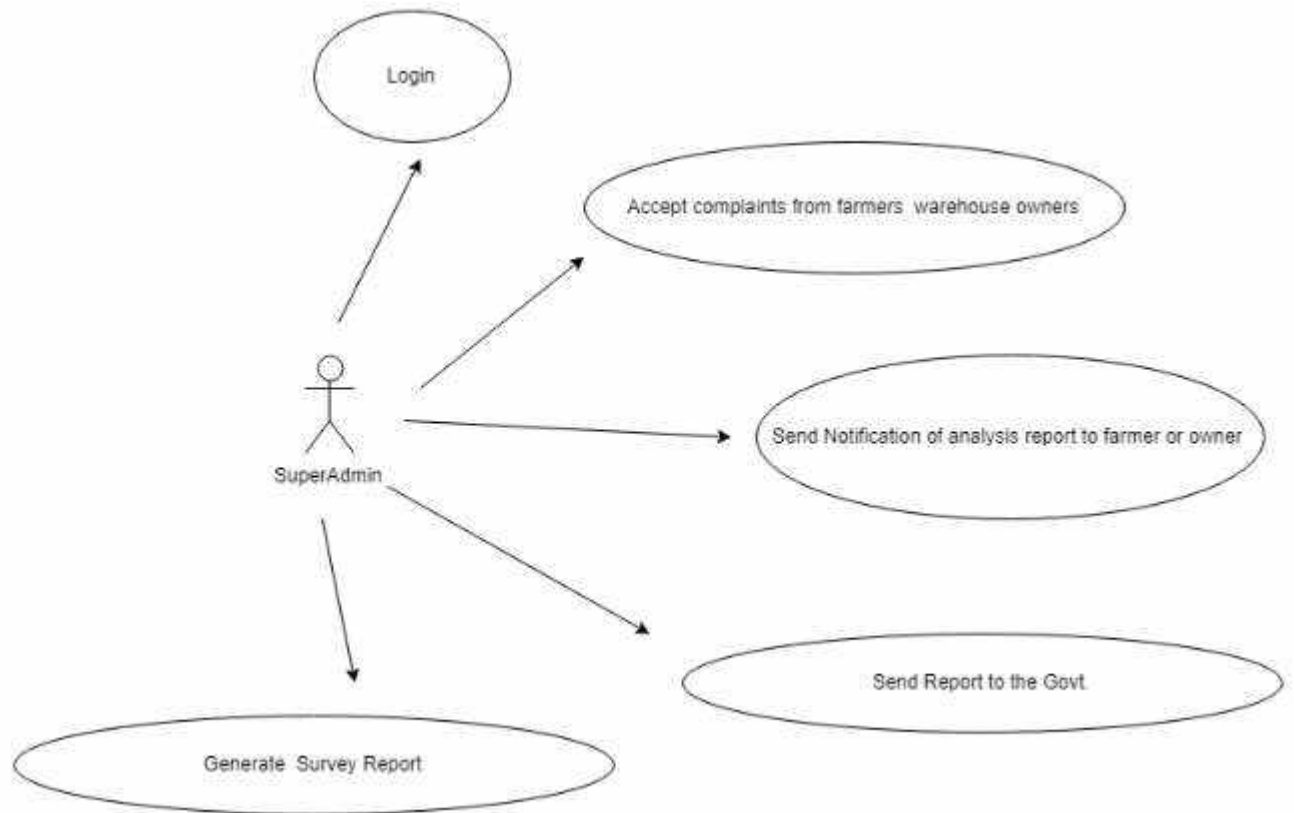
Figure 4.3: Use Case Diagram of Warehouse Owner

Above figure shows the use case diagram of warehouse owner.It shows the flow of a user as a warehouse owner that is how he will be able to register himself on our website and also verification by OTP is done and after login he can use our site's functionalities only if he is activated by superadmin.

Figure 4.4: Use Case Diagram of Super-Admin

Above figure shows the use case diagram of superadmin.It shows the flow of a superadmin.He has to directly login to the site with the given Id and Password for the developer. Unless and untill superadmin doesn't activates a warehouse owner he wont be able to access his functinalities.SuperAdmin has the provision of sending messages to users w.r.t the crop prediction and weather prediction.
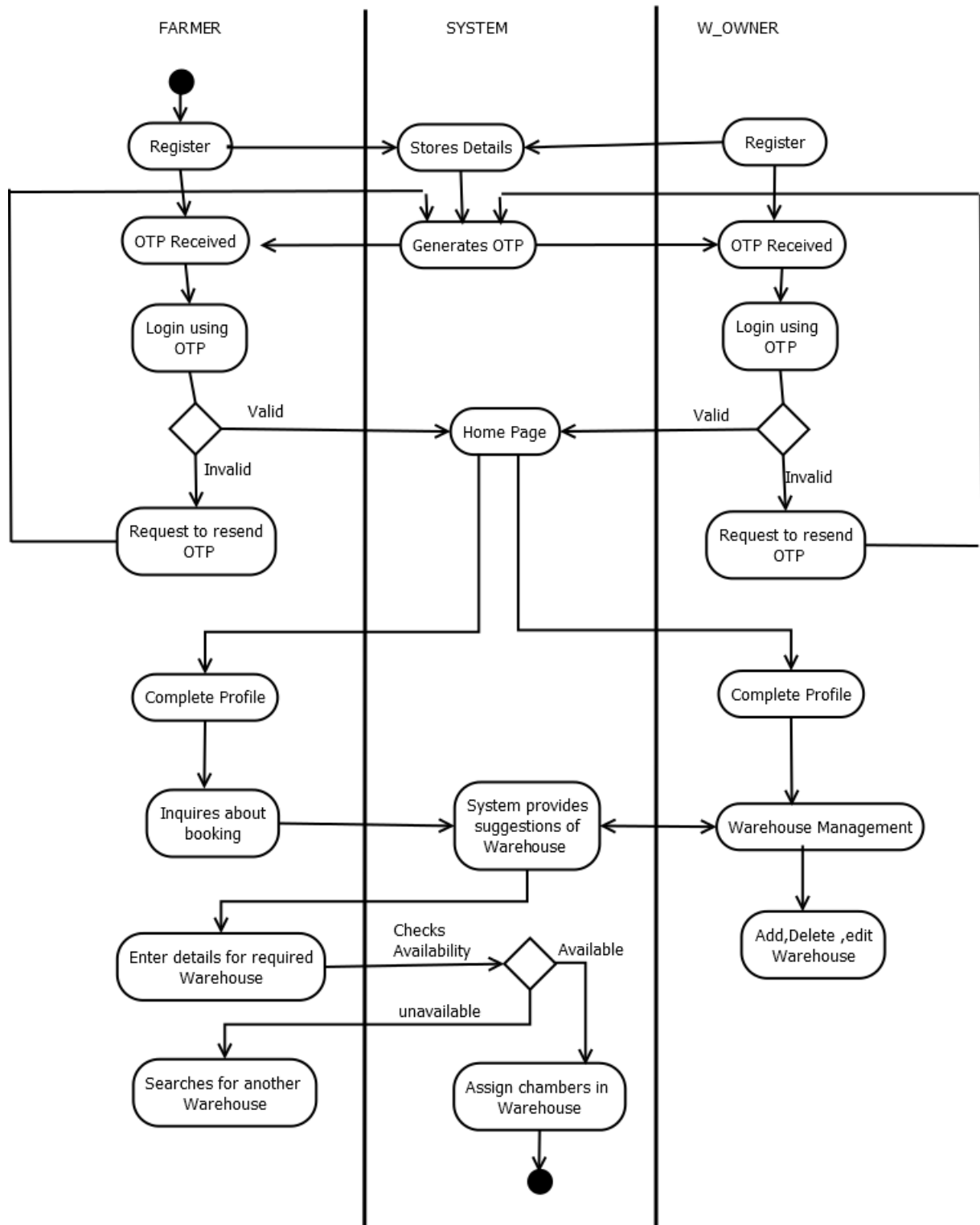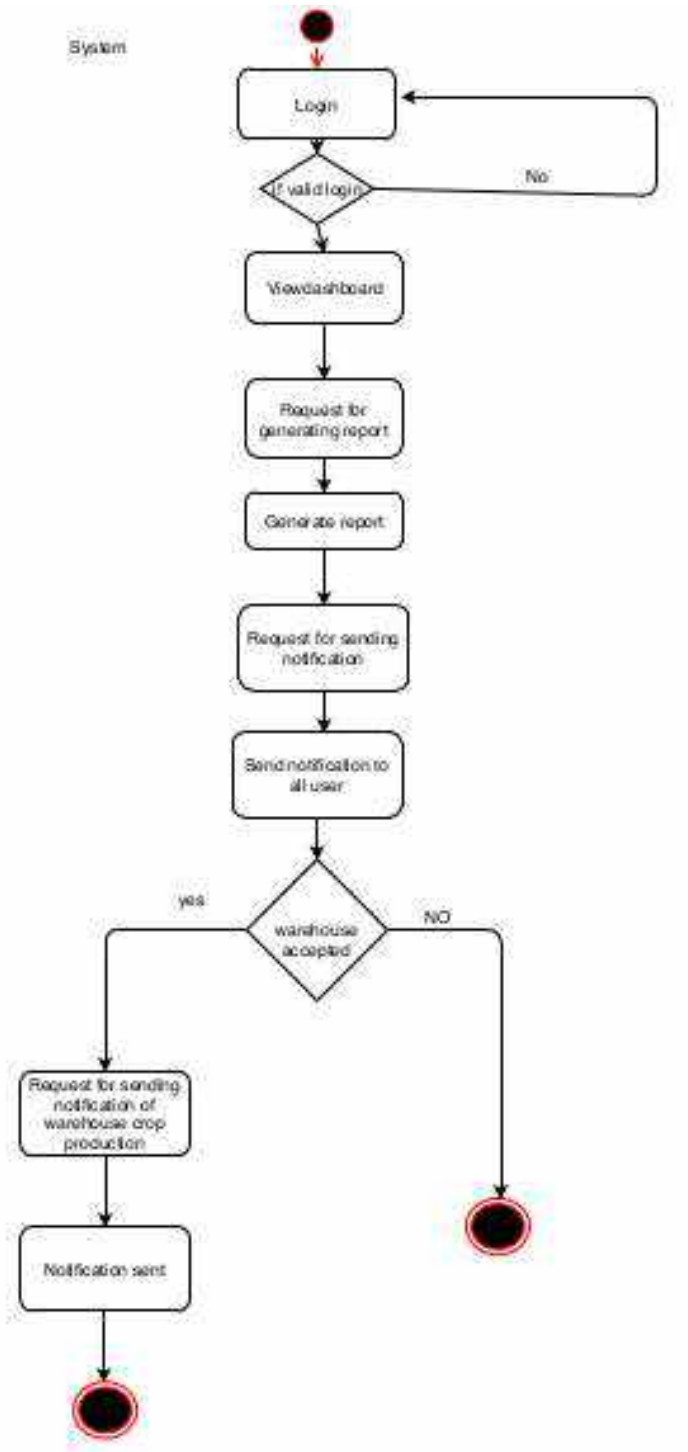
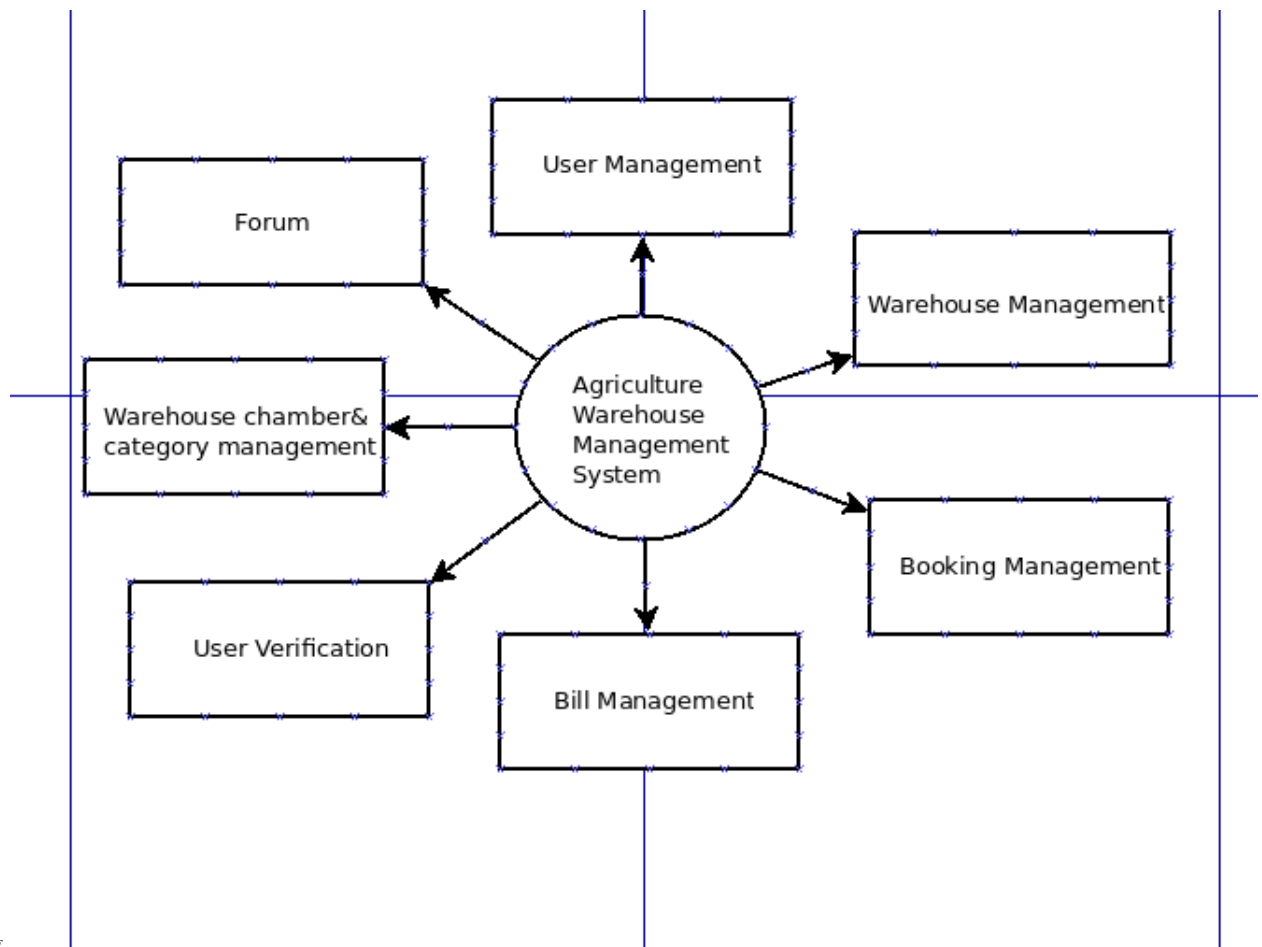## 4.3 Activity Diagram

Figure 4.5: Activity Diagram

System

Login

No

If valid login

Viewdashboard

Request for
generating report

Generate report

Request for sending
notification

Send notification to
all user

yes

warehouse
accepted

NO

Request for sending
notification of
warehouse crop
production

Notification sent

Figure 4.6: Activity Diagram for SuperAdmin

4.4 DFD Diagram

level 0.png

Figure 4.7: DFD Level-0

level1.png
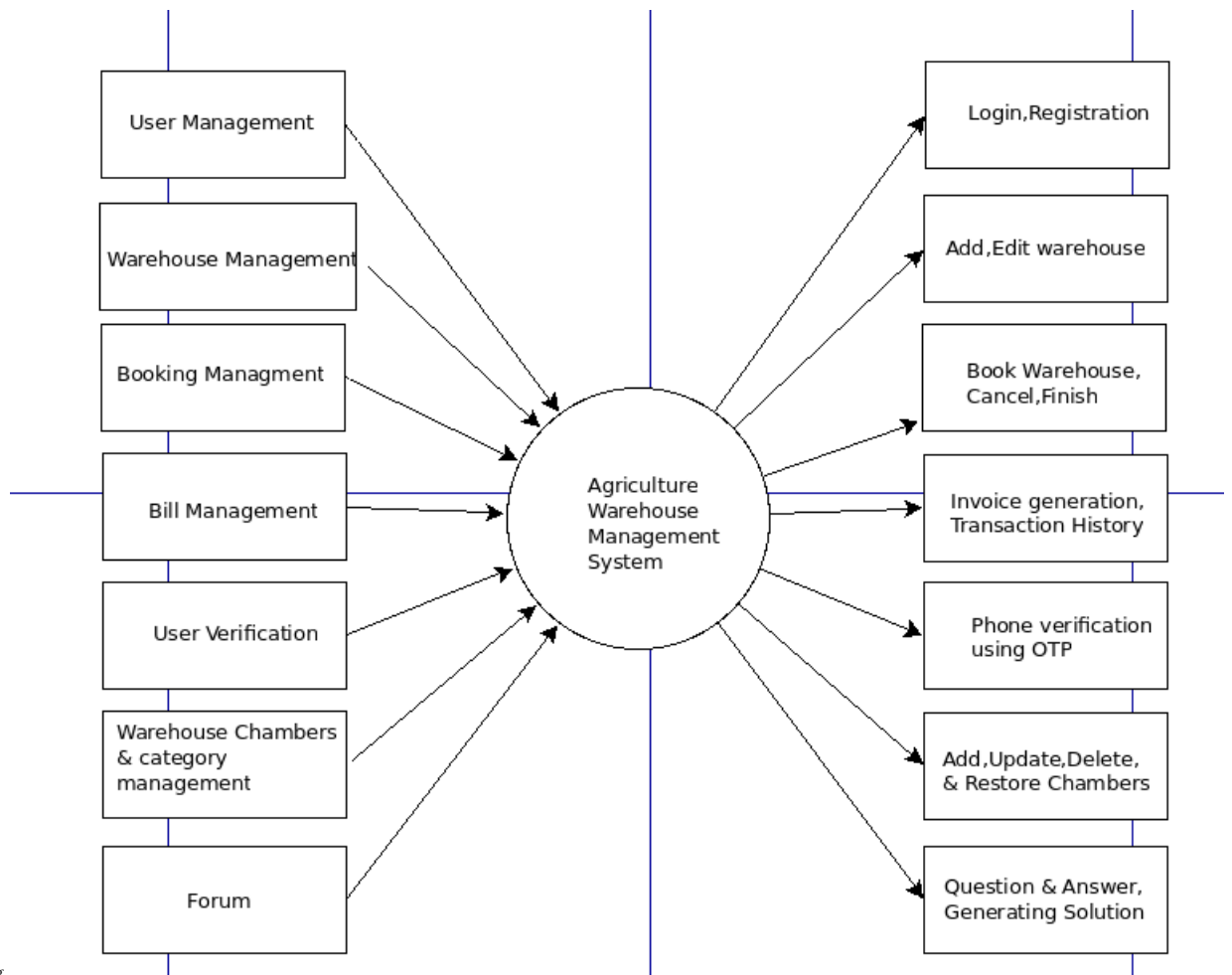
Figure 4.8: DFD Level-1
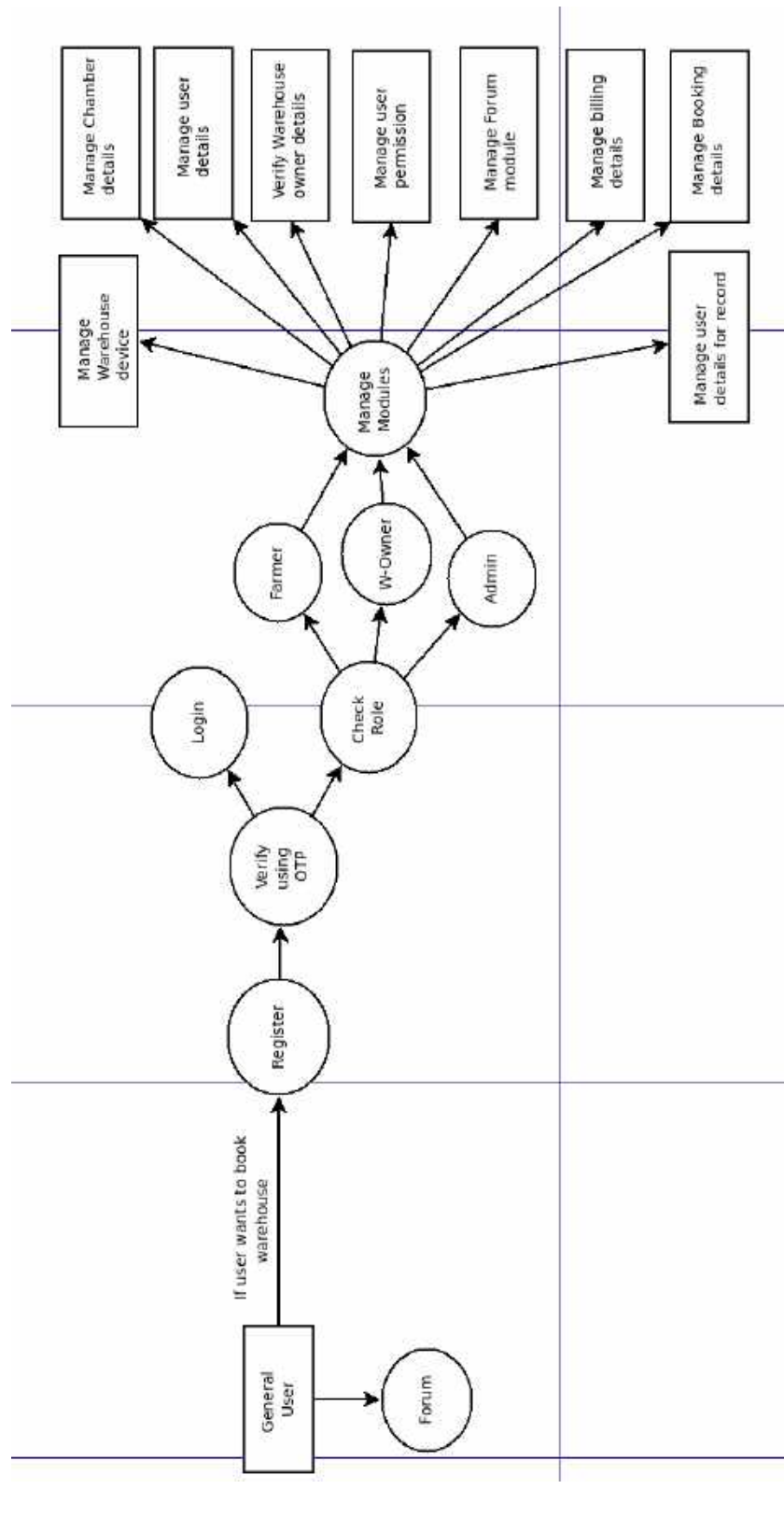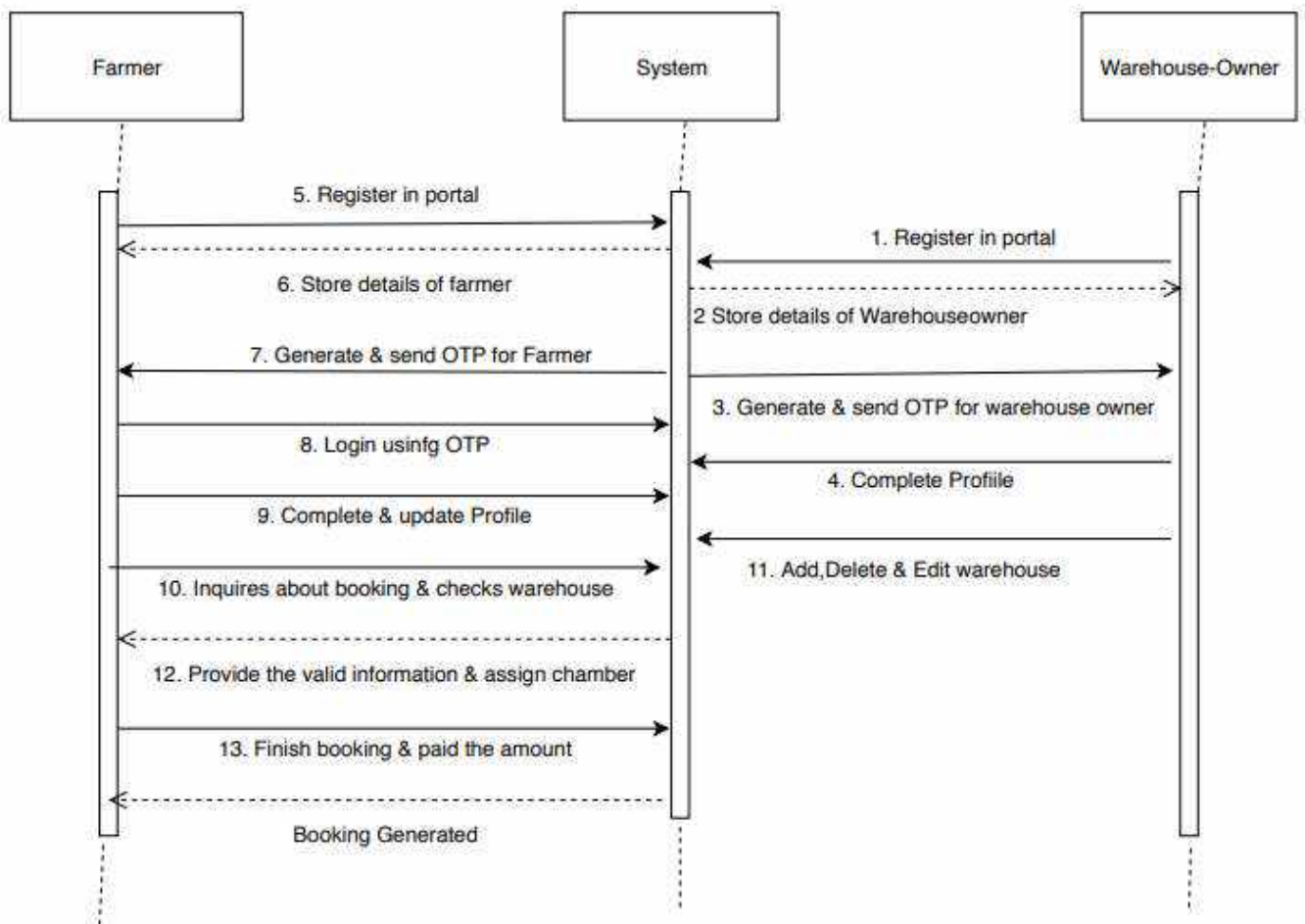
Figure 4.9: DFD Level-2

4.5 Sequence Diagram
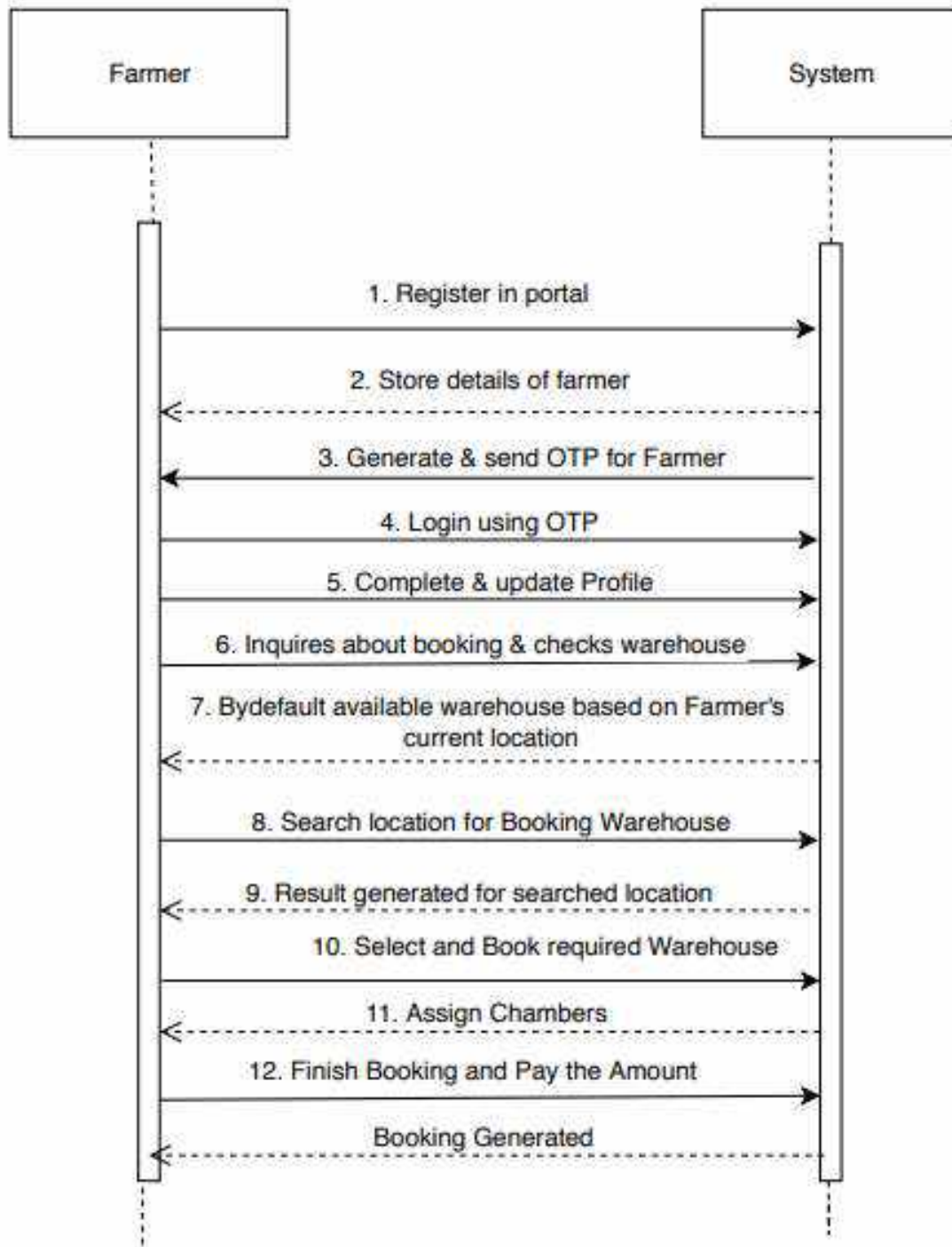

Figure 4.10: Sequence Diagram

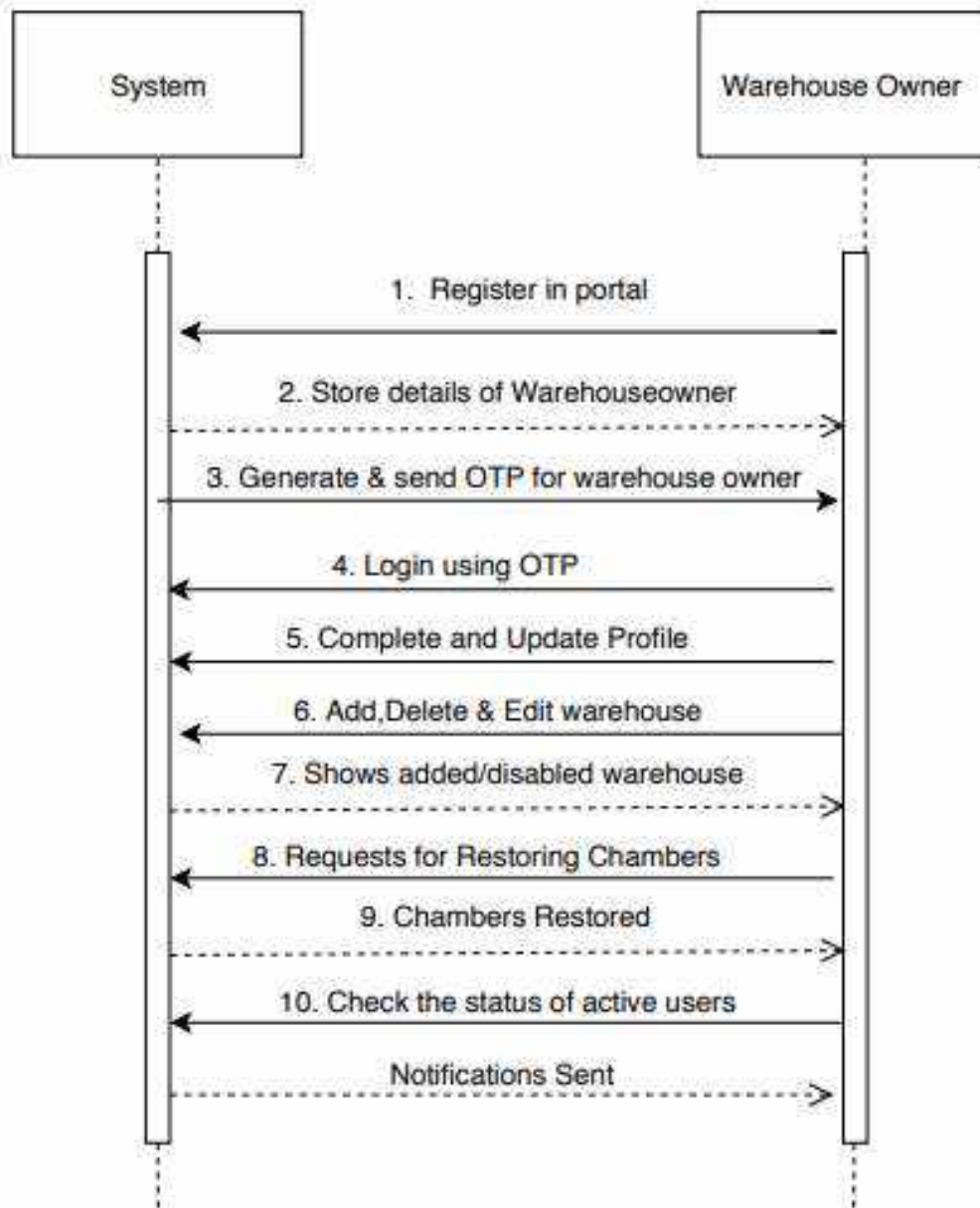Figure 4.11: Sequence Diagram of Farmer
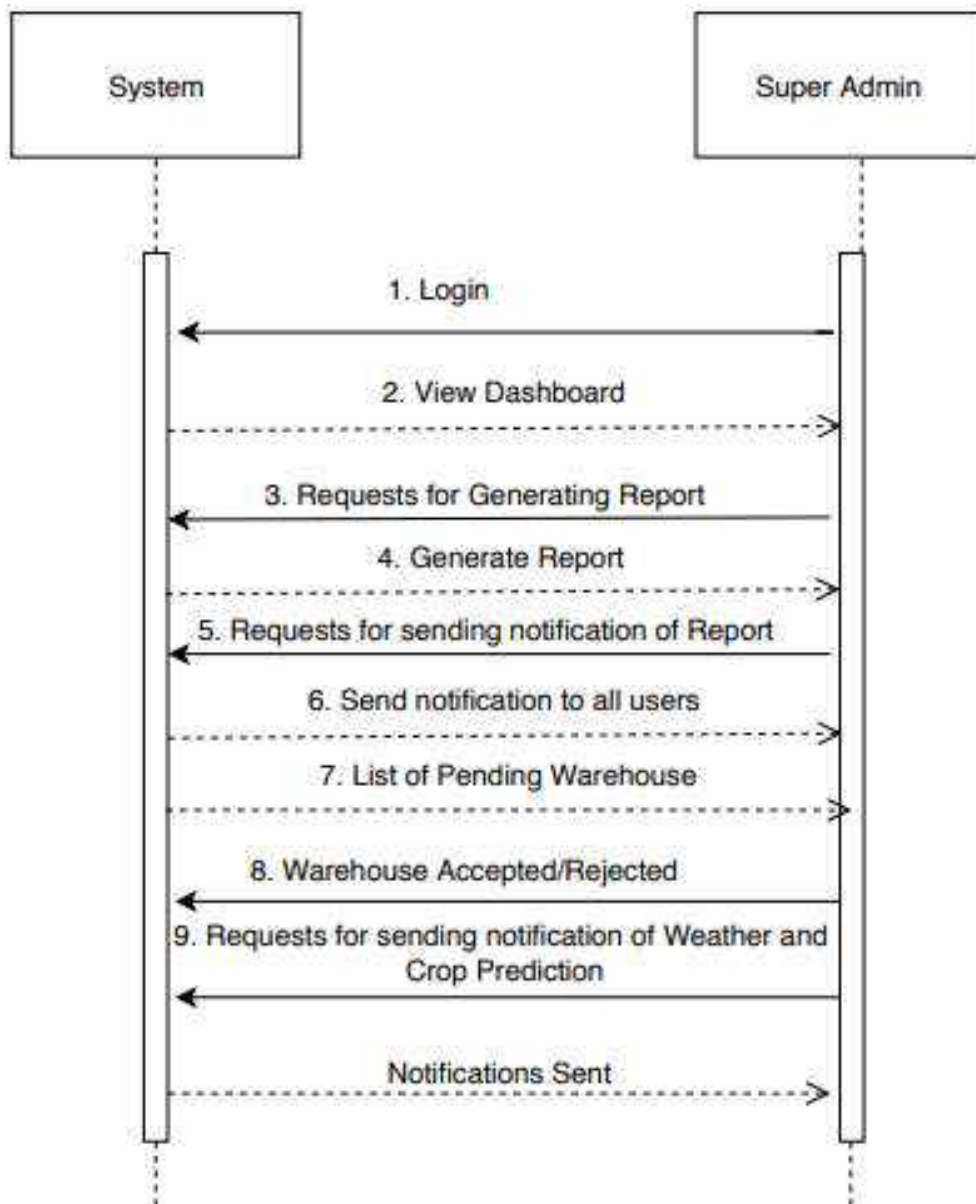
Figure 4.12: Sequence Diagram of Warehouse Owner

Figure 4.13: Sequence Diagram of SuperAdmin

Chapter 5

Implementation

MULTILINGUAL FOR FULL WEBSITE

Following is Code which we have **include** in all pages:

```
<li class="nav-item">
<div id="google_translate_element"></div>
<script type="text/javascript">
function googleTranslateElementInit() {
new google.translate.TranslateElement({pageLanguage:
'en', layout: google.translate.TranslateElement.InlineLayout.
    SIMPLE}, 'google_translate_element');
}
</script>
<script type="text/javascript" src="//translate.google.com/
    translate_a/element.js?cb=googleTranslateElementInit">
</script>
</li>
```

SESSION CONDITION FOR ALL USERS

We have to **include** following code on **each** and every page will contain this session condition to hold information about one single user, and are available to all pages in our website

```
<?php
session_start();
if($_SESSION['user_id'] != '' && $_SESSION['name'] != '' &&
    $_SESSION['mobile_no'] != '' && $_SESSION['role'] == 'Farmer'
    && $_SESSION['loggedIn'] = 1){
//write the code between this codition
}else{header('location:../index.php');}
?>
```

MODULE: FARMER

Location based filtering **for** Farmer:
Following code will response as distance and duration of **each** warehouse

```
$query = "SELECT␣*␣FROM␣warehouse_details␣where␣activated␣=␣'1'";
$result= mysqli_query($connect, $query);
while($row= mysqli_fetch_array($result)){
          $curl = curl_init();
curl_setopt_array($curl, array(
 CURLOPT_URL => "https://maps.googleapis.com/maps/api/
    distancematrix/json?unit=metric&mode=&origins=".
    $city_Filter_Lat.","."$city_Filter_Lng."&destinations=".$row['
    state'].","."$row['pincode']."&key=".$api_key."",
  CURLOPT_RETURNTRANSFER => true,
  CURLOPT_ENCODING => "",
  CURLOPT_MAXREDIRS => 10,
  CURLOPT_TIMEOUT => 10000,
  CURLOPT_HTTP_VERSION => CURL_HTTP_VERSION_1_1,
  CURLOPT_CUSTOMREQUEST => "POST",
  CURLOPT_POSTFIELDS => "",
  CURLOPT_SSL_VERIFYHOST => 0,
  CURLOPT_SSL_VERIFYPEER => 0,
));
$response = curl_exec($curl);
$decode_json = json_decode($response);
}
```

Booking System **for** Farmers:

Following is first page from where booking response will sent and also farmer can see the directed map in google map to warehouse location

```
<?php
  $query_user = "select␣*␣from␣farmer_details␣where␣id='".
     $_SESSION['user_id']."'";
 $result_query_user = mysqli_query($connect, $query_user);
 $row_result_query_user= mysqli_fetch_array($result_query_user);
 $query2 = "SELECT␣id,␣warehouse_name,␣capacity,␣address,␣city,␣
    state,␣pincode,␣(␣6372.795477598␣*␣acos(␣cos(␣radians('".
    $row_result_query_user['state']."')␣)␣*␣cos(␣radians(␣state␣)␣
    )␣*␣cos(␣radians(␣pincode␣)␣-␣radians('".
    $row_result_query_user['pincode']."')␣)␣+␣sin(␣radians('".
```

```php
                $row_result_query_user['state']."')) * sin( radians( state )
                )) AS distance FROM warehouse_details where activated = '1'
                HAVING distance < 100 ORDER BY distance";
$result2= mysqli_query($connect, $query2);
while($row1= mysqli_fetch_array($result2)){
echo "<div class='col-lg-4 mypadding'>";
echo "<div class='mywarehouse'>";
echo "<div><i style='color:#27ae60' class='fas fa-id-card'></i> ".
    $row1['id']."</div>";
 echo "<div><i style='color:#27ae60' class='fas fa-user-circle'></
    i> ".$row1['warehouse_name']."</div>";
        echo "<div><i style='color:#27ae60' class='fas fa-key'></i
            > ";
        $query3 = "SELECT distinct type FROM chamber_details WHERE
             warehouse_id='".$row1['id']."';";
$result3= mysqli_query($connect, $query3);
while($row3= mysqli_fetch_array($result3)){
echo "<span  class='badge badge-pill badge-cat '>".$row3['type']."
    </span>";
        } echo "</div>";
  echo "<div><i style='color:#27ae60' class='fas fa-fill'></i> ".
    $row1['capacity']."</div>";
  echo "<div><i style='color:#27ae60' class='fas fa-map-marker-alt
    '></i> ".$row1['address']."</div>";
  echo "<div><i style='color:#27ae60' class='fas fa-map-pin'></i>
    ".round($row1['distance'],2)." k.m. (P2P Distance)</div>";
echo "<button type='button' name='age' id='".$row1['id']."' value
    ='".$row1['id']."'  class='btn  badge badge-pill btn-submit btn
    -book'>Book</button><button type='button' class='btn badge
    badge-pill btn-submit btn-view btn-view_".$row1['id']."'>View
    on Map </button>";
        echo "<script>";
        echo "$('.btn-view_".$row1['id']."').on('click', function(
            event) {
      var farmer_formated_addr = $('.farmer_formated_addr_".$row1['
    id']."').val();
      var farmer_lat = $('.farmer_lat_".$row1['id']."').val();
      var farmer_lng = $('.farmer_lng_".$row1['id']."').val();
      var warehouse_formated_addr = $('.warehouse_formated_addr_".
    $row1['id']."').val();
      var warehouse_lat = $('.warehouse_lat_".$row1['id']."').val()
    ;
      var warehouse_lng = $('.warehouse_lng_".$row1['id']."').val()
    ;
      var url = 'https://www.google.com/maps/dir/'+encodeURI(
    farmer_formated_addr)+'/'+encodeURI(warehouse_formated_addr);
      window.open(url, '_newtab' );
```

```php
    })  ;" ;
        echo "</script>";

Booking Logic Code:
<?php
require("../db.php");
if (!empty($_POST))
{
 $output = '';
 $transc = uniqid();
 $warehouse_id = mysqli_real_escape_string($connect, $_POST["
    warehouse_id"]);
 $cropname = mysqli_real_escape_string($connect, $_POST["cropname"
    ]);
    $capacity = mysqli_real_escape_string($connect, $_POST["
        capacity"]);
    $from_date = mysqli_real_escape_string($connect, $_POST["
        from_date"]);
    $storage_type = mysqli_real_escape_string($connect, $_POST["
        storage_type"]);
if (strtotime(date('y-m-d')) <= strtotime($from_date)){
        $query ="select count(id) from chamber_details where
            warehouse_id='". $warehouse_id." ' AND ". $capacity." <=
            (full_capacity-filled_capacity) AND type ='".
            $storage_type." ' AND NOT status='Deleted '";
      $result=mysqli_query($connect,$query);
      $row_count = mysqli_fetch_array($result);
if ($row_count[0] == 0){
$query_for_full_capacity ="select id, (full_capacity-
    filled_capacity) as available_capacity  from chamber_details
    where warehouse_id='".$warehouse_id." ' AND type ='".
    $storage_type." ' AND NOT status='Deleted '";
 $result_for_full_capacity=mysqli_query($connect,
    $query_for_full_capacity);
    $total_available_capacity_on_request = 0;
    while($row_for_full_capacity = mysqli_fetch_array(
        $result_for_full_capacity)){
        $total_available_capacity_on_request =
            $total_available_capacity_on_request +
            $row_for_full_capacity['available_capacity'];
    } if ($total_available_capacity_on_request >= $capacity){
            $query_if_not_available ="select * from
                chamber_details where warehouse_id='".
                $warehouse_id." ' AND type ='".$storage_type." ' AND
                NOT status='Deleted ' order by (full_capacity-
                filled_capacity)";
            $result_if_not_available=mysqli_query($connect,
```

```php
            $query_if_not_available);
        $row_if_not_available = mysqli_fetch_array(
            $result_if_not_available);
        $temp_capacity = (int)$capacity;
    while(($row_if_not_available = mysqli_fetch_array(
        $result_if_not_available)) && ($temp_capacity != 0)){
            $id = $row_if_not_available['id'];
            if($temp_capacity < ((int)$row_if_not_available['
                full_capacity']-(int)$row_if_not_available['
                filled_capacity'])){
            $query_booking_2="UPDATE chamber_details  SET
                status ='Unavailable', filled_capacity=
                filled_capacity+'".$temp_capacity."' where id
                ='$id';";
            if(mysqli_query($connect,$query_booking_2)){
                    $query_booking = "INSERT INTO booking(
                        farmer_id, cropname,capacity,date1,
                        chamberid,status,transcation_key)VALUES
                        ('".$_SESSION['user_id']."','$cropname
                        ', '$temp_capacity','$from_date','$id
                        ','Pending','$transc');";}
                        mysqli_query($connect,$query_booking);
        $temp_capacity = 0;
            }
            if($temp_capacity >= ((int)
                $row_if_not_available['full_capacity']-(int
                )$row_if_not_available['filled_capacity']))
                {
        $query_booking_2="UPDATE chamber_details  SET
            status ='Unavailable', filled_capacity=
            filled_capacity+'".((int)$row_if_not_available
            ['full_capacity']-(int)$row_if_not_available['
            filled_capacity'])."' where id ='$id';";
            if(mysqli_query($connect,$query_booking_2)){
                    $query_booking = "INSERT INTO booking(
                        farmer_id, cropname,capacity,date1,
                        chamberid,status,transcation_key)VALUES
                        ('".$_SESSION['user_id']."','$cropname
                        ','".((int)$row_if_not_available['
                        full_capacity']-(int)
                        $row_if_not_available['filled_capacity'
                        ])."','$from_date','$id','Pending','
                        $transc');";}
                        mysqli_query($connect,$query_booking);
$temp_capacity = $temp_capacity - ((int)$row_if_not_available['
    full_capacity']-(int)$row_if_not_available['filled_capacity'
    ]);
```

```php
            }
        }
                echo 1;
            } else {
                echo 12;
            }
    } else {
            $query2 ="select _id _from _chamber_details _where _
                warehouse_id='".$warehouse_id." '_AND_".$capacity." _<=_(
                full_capacity-filled_capacity) _AND_type _='".
                $storage_type." '_AND_NOT_status='Deleted '_order _by _(
                full_capacity-filled_capacity) _asc";
    $result2=mysqli_query($connect,$query2);
        $row = mysqli_fetch_array($result2);
        $query3 = "INSERT_INTO_booking(farmer_id , _cropname, capacity ,
            date1 , chamberid , status , transcation_key)VALUES('".$_SESSION
            ['user_id']." ' ,'$cropname ', _'$capacity ','$from_date ','$row
            [0]' ,'Pending ','$transc');";
    if(mysqli_query($connect,$query3)){
                $query4="UPDATE_chamber_details _ _SET_status _='
                    Unavailable ', _filled_capacity=filled_capacity+'".
                    $capacity." '_where _id='$row[0]';";
                mysqli_query($connect,$query4);
                echo 1;
        }
    }
} else {
 echo 2;
}
}
```

Booking History of Warehouse of Farmers:

```php
<?php
$query_transaction = "select _distinct_transcation_key , _farmer_id _
   from _booking _where _farmer_id='".$_SESSION['user_id']." '_AND_
   status='Paid '_";
        $result_transaction= mysqli_query($connect,
            $query_transaction);
 while($row_transaction= mysqli_fetch_array($result_transaction)){
$query_for_counting_transcation_key = "select _count('
   transcation_key ') _from _booking _where _transcation_key='".
   $row_transaction['transcation_key ']." '";
        $result_for_counting_transcation_key= mysqli_query(
            $connect, $query_for_counting_transcation_key);
 $row_for_counting_transcation_key= mysqli_fetch_array(
    $result_for_counting_transcation_key);
```

```php
            if($row_for_counting_transcation_key[0]==1){
                $query_for_transcation_is_one = "select * from
                    booking where transcation_key='".
                    $row_transaction['transcation_key']."' AND
                    status='Paid' ";
        $result_for_transcation_is_one= mysqli_query($connect,
            $query_for_transcation_is_one);
while($row_for_transcation_is_one= mysqli_fetch_array(
    $result_for_transcation_is_one)){
            $q0 ="select * from chamber_details where id ='".
                $row_for_transcation_is_one['chamberid']."'";
            $r0= mysqli_query($connect, $q0);
            $r00 = mysqli_fetch_array($r0);
            $q1 ="select * from warehouse_details where id ='".$r00
                ['warehouse_id']."'";
            $r1= mysqli_query($connect, $q1);
            $r11 = mysqli_fetch_array($r1);
            echo "<div class='col-lg-6 mypadding'>";
            echo "<div class='mywarehouse'>";
            echo "<div>Warehouse Name: ".$r11['warehouse_name']."
                </div>";
            echo "<div>Booked Crop: ".$row_for_transcation_is_one[
                'cropname']."</div>";
            echo "<div>Capacity: ".$row_for_transcation_is_one['
                capacity']."</div>";
            echo "<div>Date of Booking: ".
                $row_for_transcation_is_one['date1']."</div>";
            echo "<div>Location: ".$r11['address']."</div>";

            echo "</div>";
            echo "</div>";
}
                }
                else if($row_for_counting_transcation_key[0]>1){
                        $query_for_transcation_more_then_one = "select
                             * from booking where transcation_key='".
                            $row_transaction['transcation_key']."' AND
                            status='Paid' ";
$result_for_transcation_more_then_one= mysqli_query($connect,
    $query_for_transcation_more_then_one);
$total_capacity = 0;
            while($row_for_transcation_more_then_one=
                mysqli_fetch_array(
                $result_for_transcation_more_then_one)){
        $total_capacity = $total_capacity+
          $row_for_transcation_more_then_one['capacity'];
          }
```

```php
$query_limit_one = "select *from booking where
    transcation_key='".$row_transaction['transcation_key'
    ]."' AND status='Paid' limit 1 ";
$result_limit_one= mysqli_query($connect, $query_limit_one);
while($row_limit_one= mysqli_fetch_array($result_limit_one)){
    $q0 ="select * from chamber_details where id ='".
        $row_limit_one['chamberid']."'";
    $r0= mysqli_query($connect, $q0);
    $r00 = mysqli_fetch_array($r0);
    $q1 ="select * from warehouse_details where id ='".$r00
        ['warehouse_id']."'";
    $r1= mysqli_query($connect, $q1);
    $r11 = mysqli_fetch_array($r1);
    echo "<div class='col-lg-6 mypadding'>";
    echo "<div class='mywarehouse'>";
    echo "<div>Warehouse Name: ".$r11['warehouse_name']."
        </div>";
    echo "<div>Booked Crop: ".$row_limit_one['cropname']."
        </div>";
    echo "<div>Capacity: ".$total_capacity."</div>";
    echo "<div>Date of Booking: ".$row_limit_one['date1'].
        "</div>";
    echo "<div>Location: ".$r11['address']."</div>";
    echo "</div>";
    echo "</div>";
    }
    }
}
?>
        </div>
        <div class="row">
        <div class="col-lg-12">
            <div class='container' >
    <div class='row mywarehouse_details_header' style="color:
         white">
```

For Canceled Transaction all above code will be same except query will change to select distinct transcation_key, farmer_id from booking where farmer_id='".$_SESSION['user_id']."' AND status=' Canceled'

MODULE: WAREHOUSE OWNER:

Data Analytics **for** Warehouse owner's view:
Following is sample code for add visual component which is

generate by php on the basis of real time data coming from the data base

```
<script src="https://cdn.jsdelivr.net/npm/apexcharts@latest"></
    script><script type="text/javascript">var options={chart:{type:
    'donut',},plotOptions:{pie:{donut:{size:'60%',labels:{value:{
    formatter:function(w){return w+" k. g."}},show:!0,},},
    dataLabels:{enabled:!0,}}},title:{text:'Warehouse Capacity in k
    .g.'},series:[135,2500,],labels:['APSIT','Mulund',],legend:{
    show:!0}}
var chart=new ApexCharts(document.querySelector("#total_warehouse
    "),options);chart.render();</script><script type="text/
    javascript">var options={chart:{height:350,type:'bar',stacked
    :!0,stackType:'100%'},plotOptions:{bar:{horizontal:!0,},},
    stroke:{width:1,colors:['#fff']},series:[{name:'Filled Capacity
    ',data:[0,0,]},{name:'Full Capacity',data:[135,2500,]}],title:{
    text:'Warehouse Usage '},xaxis:{categories:['APSIT','Mulund
    ',],},tooltip:{y:{formatter:function(val){return val+" k. g
    ."}}},fill:{opacity:1},legend:{position:'top',horizontalAlign:'
    left',offsetX:40}}
var chart=new ApexCharts(document.querySelector("#warehouse_usage"
    ),options);chart.render();</script>
```

Add Warehouse Logic Code:

```
$query = "update wowner_details set  no_of_warehouses = '".(
    $no_of_warehouses+1)."' where id ='".$_SESSION['mobile_no']."
    @user';";
$result = mysqli_query($connect, $query);
    $row = mysqli_fetch_array($result);
  $no_of_warehouses = (int)$row['no_of_warehouses'];
    $full_capacity = $capacity_per_chambers;
        $capacity = (float)$capacity_per_chambers * (float)
            $no_of_chambers;
        $query = "
            INSERT INTO warehouse_details (id, warehouse_name, 
    capacity , address, city, state, pincode, no_of_chambers)
            VALUES ('$id',  '$warehouse_name', '$capacity','$address
    ','$full_adr','$cityLat', '$cityLng', '$no_of_chambers');";
      echo $query;
        $result = mysqli_query($connect, $query);
        $user_id = $_SESSION['user_id'];
        $query = "INSERT INTO `warehouse_owner` (`warehouse_id`, `
            wowner_id`) VALUES ('$id', '$user_id');";
    mysqli_query($connect, $query);
    $fetch = "select * from warehouse_type where warehouse_owner='"
```

```php
             .$_SESSION['user_id']."'_AND_warehouse_type='".
             $warehouse_type."'";
        $result_type = mysqli_query($connect, $fetch);
        $row_type = mysqli_fetch_array($result);
        if ($row_type[0] == 0){
            $query2 = "INSERT_INTO_`warehouse_type`(`warehouse_owner`,
                _`warehouse_id`,_`warehouse_type`,_`status`)_VALUES_('"
                .$_SESSION['user_id']."','"."$id."','"."$warehouse_type."
                ','Active')";
                mysqli_query($connect, $query2);
        }
    $query = "select_*_from_chamber_details;";
$result = mysqli_query($connect, $query);
$count1 = 0;
    while($row = mysqli_fetch_array($result)){
        $count1++;
    }
echo $count1;
    for($i=0; $i<$no_of_chambers; $i++){
        $sql= "INSERT_INTO_`chamber_details`_(`id`,_`chamber_name
            `,_`warehouse_id`,`full_capacity`,`status`,`
            filled_capacity`,`type`)_VALUES_('"."$count1."_chamber',
            _'Chamber_".($count1+1)."','"."$id."','"."$full_capacity
            ."',_'Available',_'0','"."$warehouse_type."');";
        if($result = mysqli_query($connect, $sql)){
            echo "Data_Inserted";
        }
        $count1++;
    }
```

Add Rate of Warehouse Category Logic Page:

```php
<?php
    $rate = $_POST['rate'];
  $button_rate_id = $_POST['button_rate_id'];
  $query = "update_warehouse_type_set_rate='"."$rate."'_where_id='"
    ."$button_rate_id."'";
  if(mysqli_query($connect, $query)){
  echo 1;
  }

?>
```

Restore Chamber Logic Code:

```php
<?php
require('../../../db.php');
```

```php
if (isset($_POST["chamber_id"]))
{
    $query = "UPDATE `chamber_details` SET `status`='Available'
        WHERE id = '".$_POST["chamber_id"]."'";
    $result = mysqli_query($connect, $query);
    echo 1;
    $query2 = "select * from chamber_details where warehouse_id
        ='".$_POST["warehouse_id"]."' AND (status='Available' OR
        status='Unavailable')";
            $result2 = mysqli_query($connect, $query2);
                $total_capacity = 0;
    while($row2 = mysqli_fetch_array($result2)){
        $total_capacity = $total_capacity + $row2['full_capacity
            '];
        }
$query3 = "UPDATE warehouse_details SET capacity='$total_capacity'
    WHERE id='".$_POST["warehouse_id"]."'";
            mysqli_query($connect, $query3);
}
}
?>
```

MODULE: SUPERADMIN

Get and Send predicted weather report of 7 days via message Code:

```javascript
<script type="text/javascript">function staggerFade(){setTimeout(
    function(){$('.fadein-stagger > *').each(function(){$(this).
    addClass('js-animated')})},30)}
function skycons(){var i,icons=new Skycons({"color":"#FFFFFF","
    resizeClear":!0}),list=["clear-day","clear-night","partly-
    cloudy-day","partly-cloudy-night","cloudy","rain","sleet","snow
    ","wind","fog"];for(i=list.length;i--;){var weatherType=list[i
    ],elements=document.getElementsByClassName(weatherType);for(e=
    elements.length;e--;){icons.set(elements[e],weatherType)}}
icons.play()}
function fToC(fahrenheit){var fTemp=fahrenheit,fToCel=(fTemp-32)
    *5/9;return fToCel}
function weatherReport(mobile_no,latitude,longitude){var message='
    ';var apiKey='5dd1d2b5b705f183aa12a010031ac364',url='https://
    api.darksky.net/forecast/',lati=latitude,longi=longitude,
    api_call=url+apiKey+"/"+lati+","+longi+"?extend=hourly&callback
    =?";var days=['Sunday','Monday','Tuesday','Wednesday','Thursday
    ','Friday','Saturday'];var sunday=[],monday=[],tuesday=[],
    wednesday=[],thursday=[],friday=[],saturday=[];var
    isCelsiusChecked=$('#celsius:checked').length>0;function
    hourlyReport(day,selector){for(var i=0,l=day.length;i<l;i++){$(
```

```javascript
".".+selector+"_"+"ul").append('<li>'+Math.round(day[i])+'</li>'
)}}
$.getJSON(api_call,function(forecast){for(var j=0,k=forecast.
hourly.data.length;j<k;j++){var hourly_date=new Date(forecast.
hourly.data[j].time*1000),hourly_day=days[hourly_date.getDay()
],hourly_temp=forecast.hourly.data[j].temperature;if(
isCelsiusChecked){hourly_temp=fToC(hourly_temp);hourly_temp=
Math.round((hourly_temp))}
switch(hourly_day){case 'Sunday':sunday.push(hourly_temp);break;
case 'Monday':monday.push(hourly_temp);break;case 'Tuesday':
tuesday.push(hourly_temp);break;case 'Wednesday':wednesday.push
(hourly_temp);break;case 'Thursday':thursday.push(hourly_temp);
break;case 'Friday':friday.push(hourly_temp);break;case '
Saturday':saturday.push(hourly_temp);break;default:console.log(
hourly_date.toLocaleTimeString());break}}
var message='';for(var i=0,l=forecast.daily.data.length;i<l-1;i++)
{var date=new Date(forecast.daily.data[i].time*1000),day=days[
date.getDay()],skicons=forecast.daily.data[i].icon,time=
forecast.daily.data[i].time,humidity=forecast.daily.data[i].
humidity,summary=forecast.daily.data[i].summary,temp=Math.round
(forecast.hourly.data[i].temperature),tempMax=Math.round(
forecast.daily.data[i].temperatureMax);if(isCelsiusChecked){
temp=fToC(temp);tempMax=fToC(tempMax);temp=Math.round(temp);
tempMax=Math.round(tempMax)}
var message=message+date.toLocaleDateString()+"_"+summary+'\n';
switch(day){case 'Sunday':hourlyReport(sunday,days[0]);break;
case 'Monday':hourlyReport(monday,days[1]);break;case 'Tuesday'
:hourlyReport(tuesday,days[2]);break;case 'Wednesday':
hourlyReport(wednesday,days[3]);break;case 'Thursday':
hourlyReport(thursday,days[4]);break;case 'Friday':hourlyReport
(friday,days[5]);break;case 'Saturday':hourlyReport(saturday,
days[6]);break}}
skycons();staggerFade();var settings={"async":!0,"crossDomain":!0,
"url":"http://api.msg91.com/api/sendhttp.php?route=4&sender=
AgriTK&mobiles="+mobile_no+"&authkey=262621A0uSEEPeV5c63c562&
message="+encodeURI(message)+"&country=91","method":"GET","
headers":{}}
$.ajax(settings).done(function(response){})})}
$('.btn-weather').on('click',function(e){var select_user=[];$.each
($("input[name='select_user']:checked"),function(){select_user.
push($(this).val())});var select_user_length=select_user.length
;for(i=0;i<select_user_length;i ++){var select_user_string=
select_user[i];var select_user_split=select_user_string.split("
,");weatherReport(select_user_split[0],select_user_split[1],
select_user_split[2])}})
 </script>
```

Accept or Reject the request of Warehouse Owner Logic Code:

```php
<?php
if($_POST['action'] == 'view'){
    $output = '';
    $query = "SELECT * FROM warehouse_details WHERE id = '".$_POST[
        "warehouse_id"]."'";
    $result = mysqli_query($connect, $query);
    $output .= '
        <div class="table-responsive">
            <table class="table">';
    while($row = mysqli_fetch_array($result))
    {
        $output .= '
            <tr>
                <td width="30%"><label>Chamber ID</label></td
    >
                <td width="70%">'.$row["id"].'</td>
            </tr>
            <tr>
                <td width="30%"><label>Warehouse ID</label></
    td>
                <td width="70%">'.$row["warehouse_name"].'</
    td>
            </tr>
            <tr>
                <td width="30%"><label>Full Capacity</label
    ></td>
                <td width="70%">'.$row["capacity"].'</td>
            </tr>
            <tr>
                <td width="30%"><label>No of Chamber</label
    ></td>
                <td width="70%">'.$row["no_of_chambers"].'</
    td>
            </tr>
            <tr>
                <td width="30%"><label>Address</label></td>
                <td width="70%">'.$row["city"].'</td>
            </tr> ';
    }
    $output .= '
            </table>
        </div>
        ';
    echo $output;
```

```php
}
if($_POST['action'] == 'accept'){
  $query_for_accept = "update warehouse_details set activated =
      '1' where id ='".$_POST['warehouse_id']."'";
  if(mysqli_query($connect, $query_for_accept)){
  echo 1;
  }
}
if($_POST['action'] == 'reject'){
  $query_for_accept = "update warehouse_details set activated =
      '2' where id ='".$_POST['warehouse_id']."'";
  if(mysqli_query($connect, $query_for_accept)){
  echo 1;
  }
}
```

Sending Custom notification/Custom Bulk Messaging Logic Code:

```php
<?php
$phone_no1 = $_POST['select_user'];
$no_of_phone = sizeof($phone_no1);
$no_of_message = 0;
for($i = 0; $i < sizeof($phone_no1); $i++){
    $phone_no = explode(",",$phone_no1[$i]);
$mobileNumber = $phone_no[0];
$curl = curl_init();
curl_setopt_array($curl, array(
  CURLOPT_URL => "http://api.msg91.com/api/sendhttp.php?route=4&
      sender=AgriTK&mobiles=".$mobileNumber."&authkey=262621
      A0uSEEPeV5c63c562&message=".urlencode($_POST['Message'])."&
      country=91",
  CURLOPT_RETURNTRANSFER => true,
  CURLOPT_ENCODING => "",
  CURLOPT_MAXREDIRS => 10,
  CURLOPT_TIMEOUT => 30,
  CURLOPT_HTTP_VERSION => CURL_HTTP_VERSION_1_1,
  CURLOPT_CUSTOMREQUEST => "GET",
  CURLOPT_POSTFIELDS => "",
  CURLOPT_SSL_VERIFYHOST => 0,
  CURLOPT_SSL_VERIFYPEER => 0,
));
$response = curl_exec($curl);
$err = curl_error($curl);
curl_close($curl);
$no_of_message = $no_of_message + 1;
}
```

```php
if($no_of_phone == $no_of_message){
    echo 1;
}
?>
```

Chapter 6

Testing

TestNo.	Test Cases.	Input Case	Expected Result	Actual Result
1	Farmer Login to the site	Phone Number and password	Credential correct then login in to the site.	Accepted login with correct credentials.
2	Gets an OTP via website	Phone number	Enter correct input OTP	Entered correct input OTP
3	Sort warehouse based on location	Location known to farmer	Gets the desired location.	Got the desired location.
4	Books a warehouse	Warehouse desired	Gets the warehouse if empty	Got the warehouse if empty
5	Enter Desired Location	Needs to know desired location	Desired Location	Got the location for warehouse booking
6	Add alternate crop	Seasonal crop grown	Crop that is grown as an alternative	Alternative crop are obtained

Table 6.1: Test Case For Farmer

TestNo.	Test Cases.	Input Case	Expected Result	Actual Result
1	Login to the site	Phone Number and password	Credential correct then login in to the site.	Accepted login with correct credentials.
2	Add/disable/edit the warehouse	Warehouse ID which is not booked	Can add/delete/edit warehouse.	Can add/delete/ed it warehouse.
3	Add/delete/edit the chambers	Chamber ID which is not booked	Can add/delete/edit warehouse.	Can add/delete/ed it warehouse.
4	Restores the chambers	Restore chamber ID	Chamber gets restored.	Chamber got restored.

Table 6.2: Test Case For Warehouse

TestNo.	Test Cases.	Input Case	Expected Result	Actual Result
1	Sends customized SMS to all	Details of all users	SMS sent to all	SMS sent to all
2	Accept/Reject Warehouse	Warehouse request	Accepts or rejects the warehouse request	Rejects or Accepts the warehouse
3	Send weather report and crop recommendation via SMS to all	Weather details	Messaged delivered to all	Message received

Table 6.3: Test Case For SuperAdmin

Chapter 7

Results

7.1 Screenshots
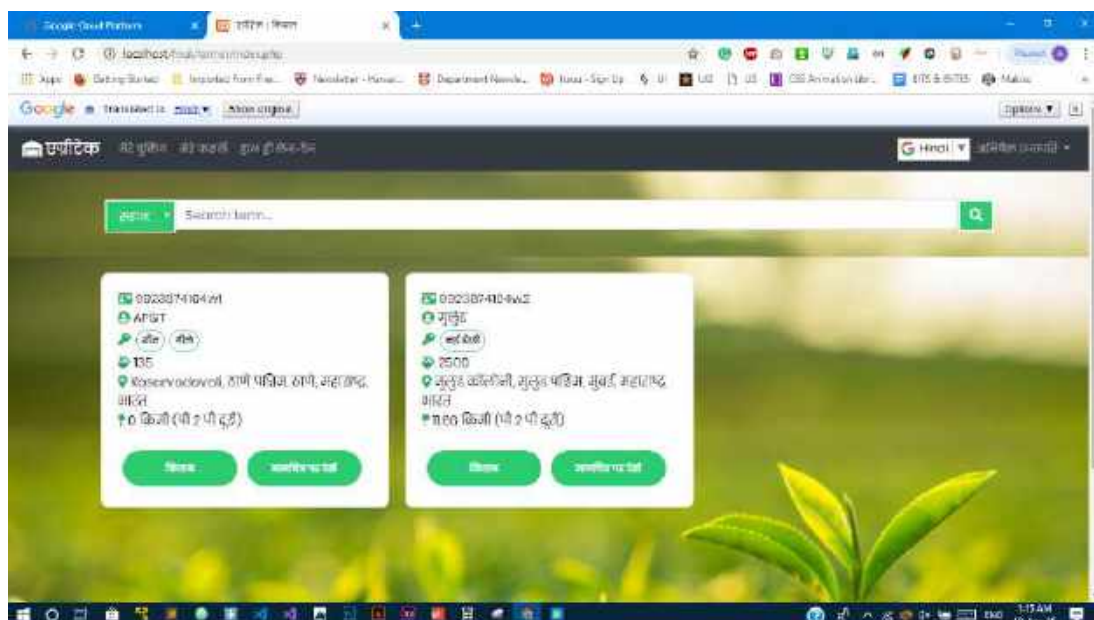
Figure 7.1: Interface of Website in Hindi Language
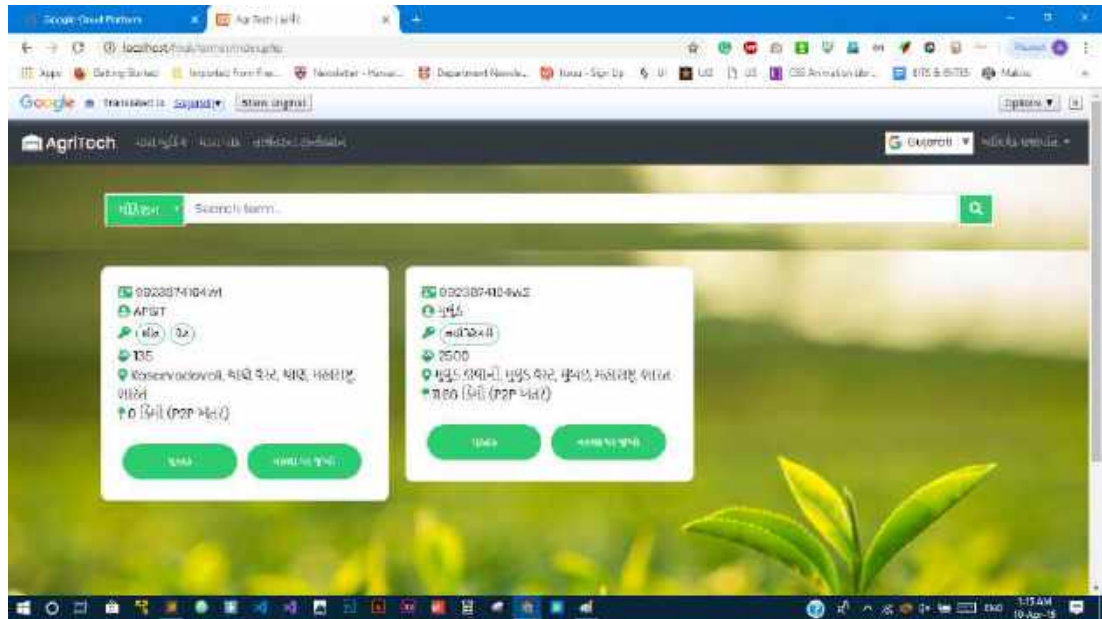
Figure 7.2: Interface of Website in Gujarati Language
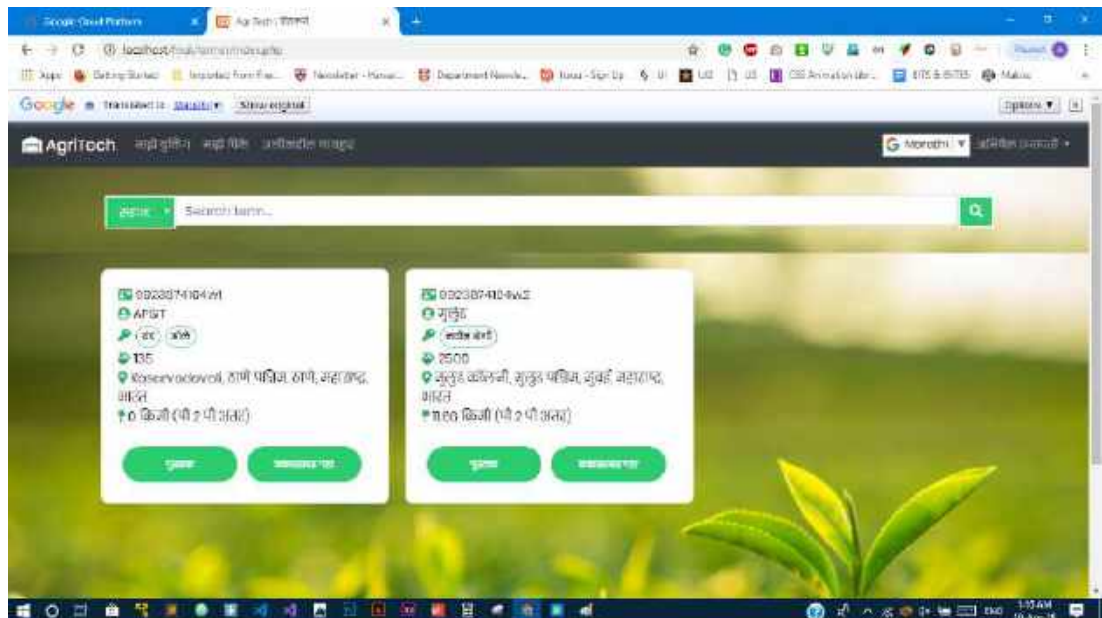
Figure 7.3: Interface of Website in Marathi Language
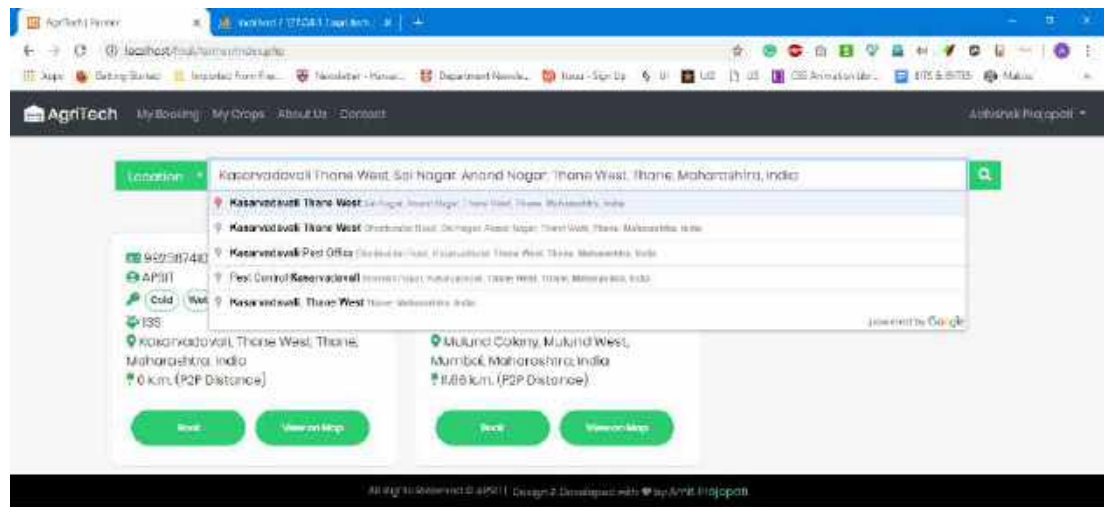
Based Filter.png

Figure 7.4: Location Based filtering For farmer
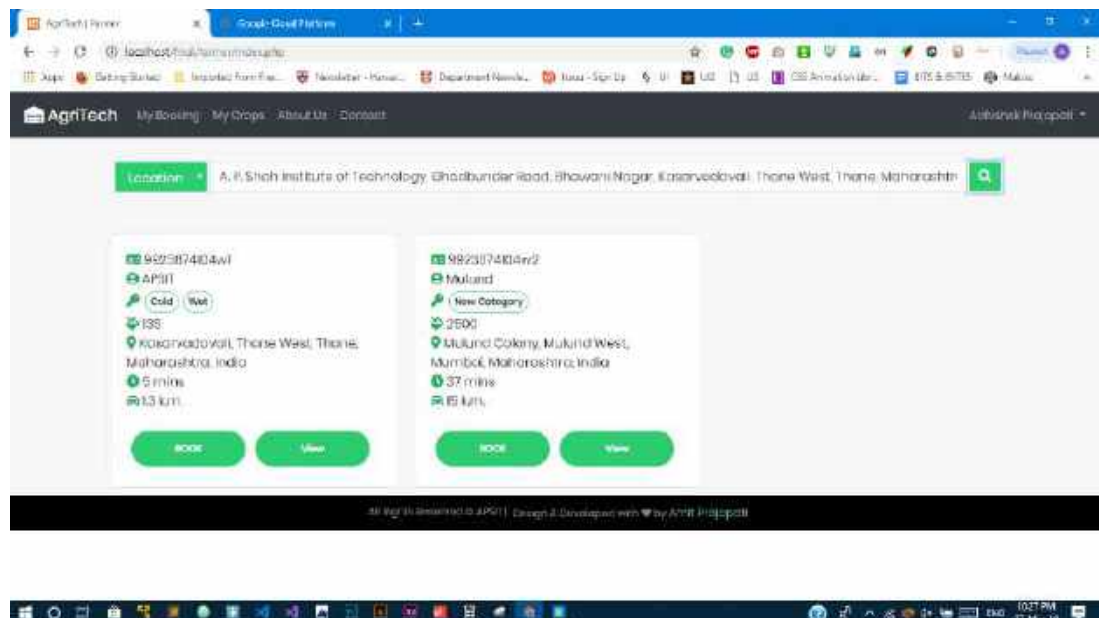
Figure 7.5: Location Based Filtering
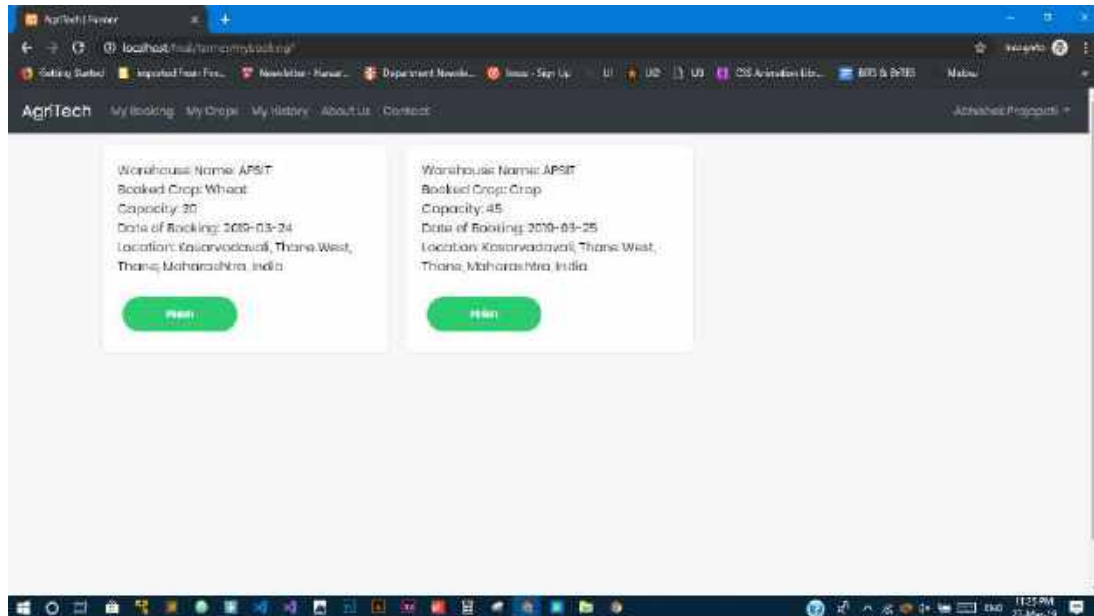
Figure 7.6: Booked warehouse
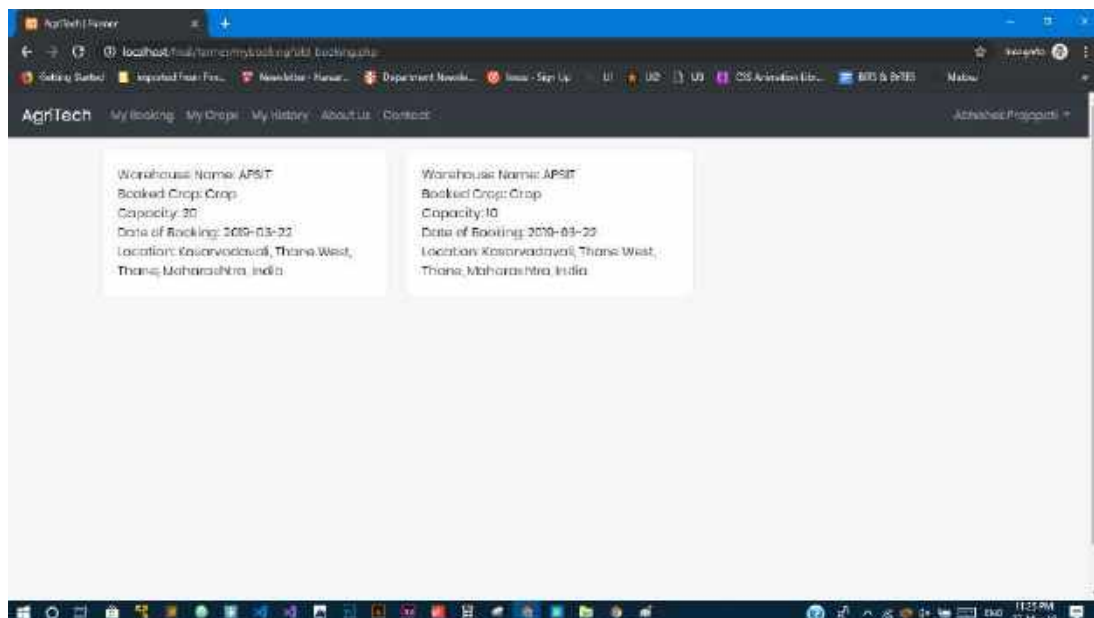
Figure 7.7: History of booked warehouse

category.png
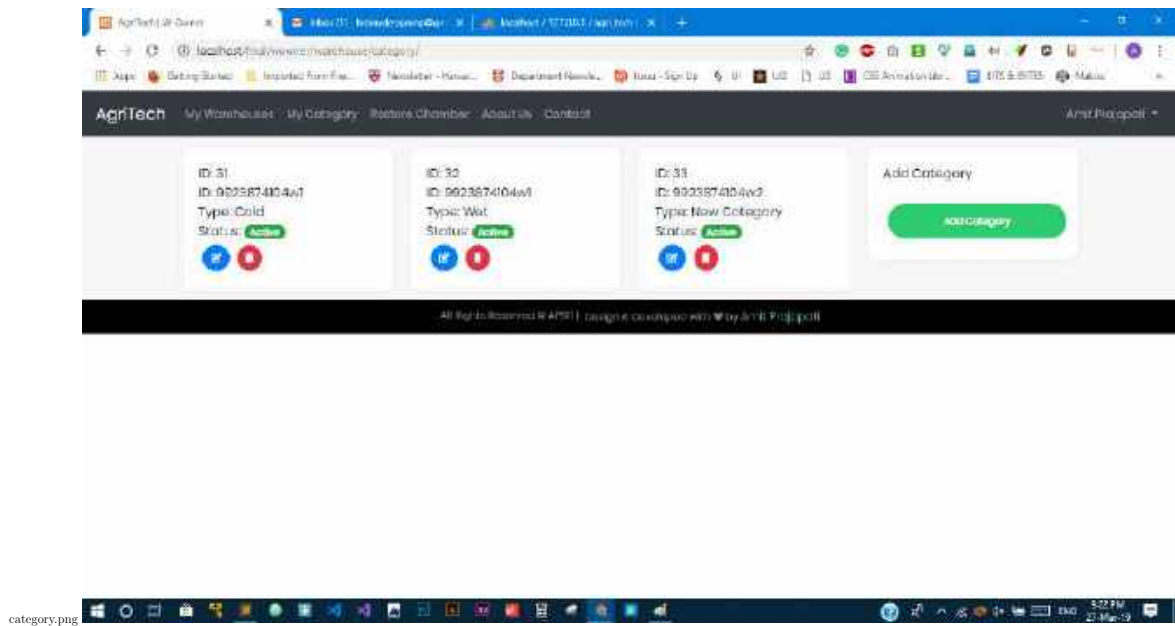
Figure 7.8: Categories of Warehouse
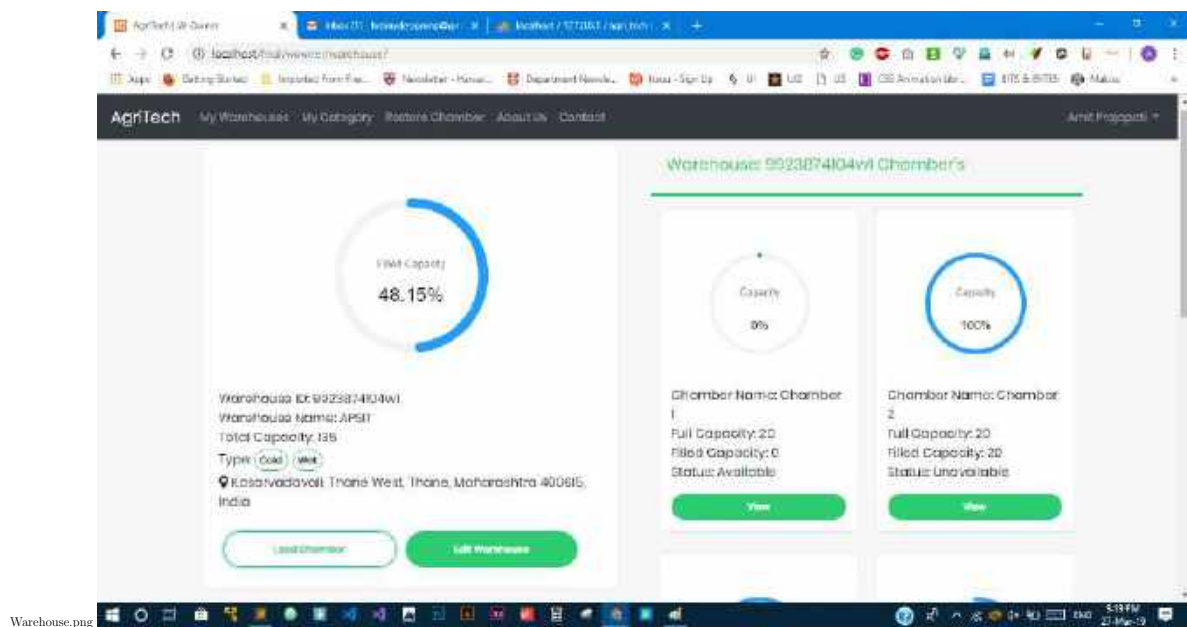
Warehouse.png

Figure 7.9: Warehouse owner's login interface
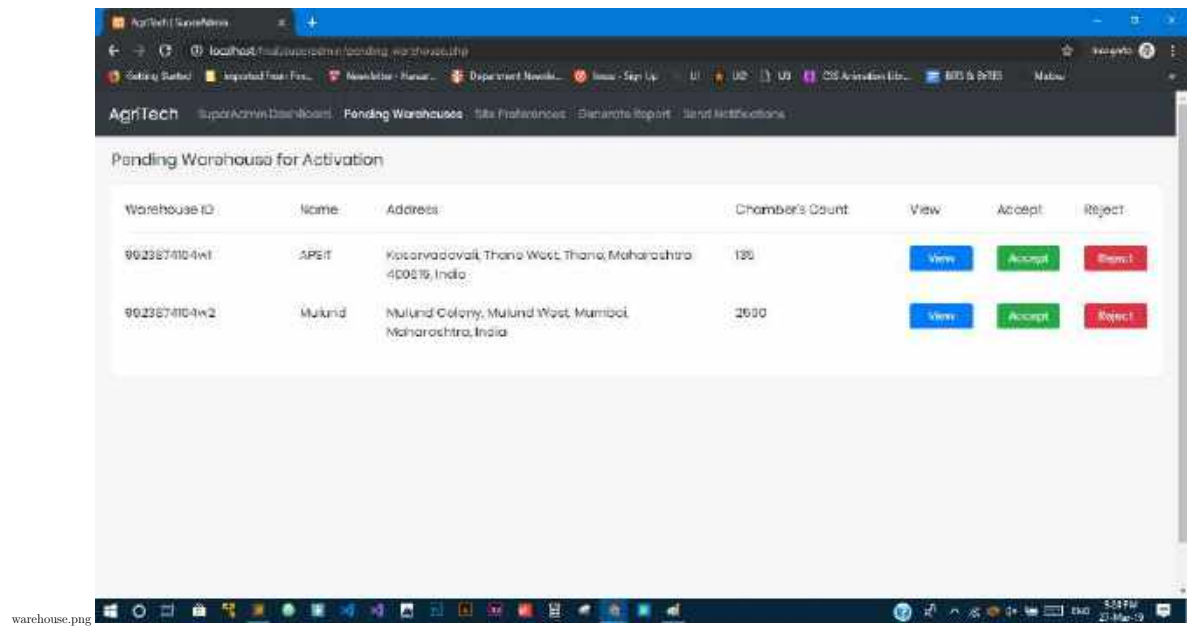
warehouse.png

Figure 7.10: Details of pending warehouses

notification.png
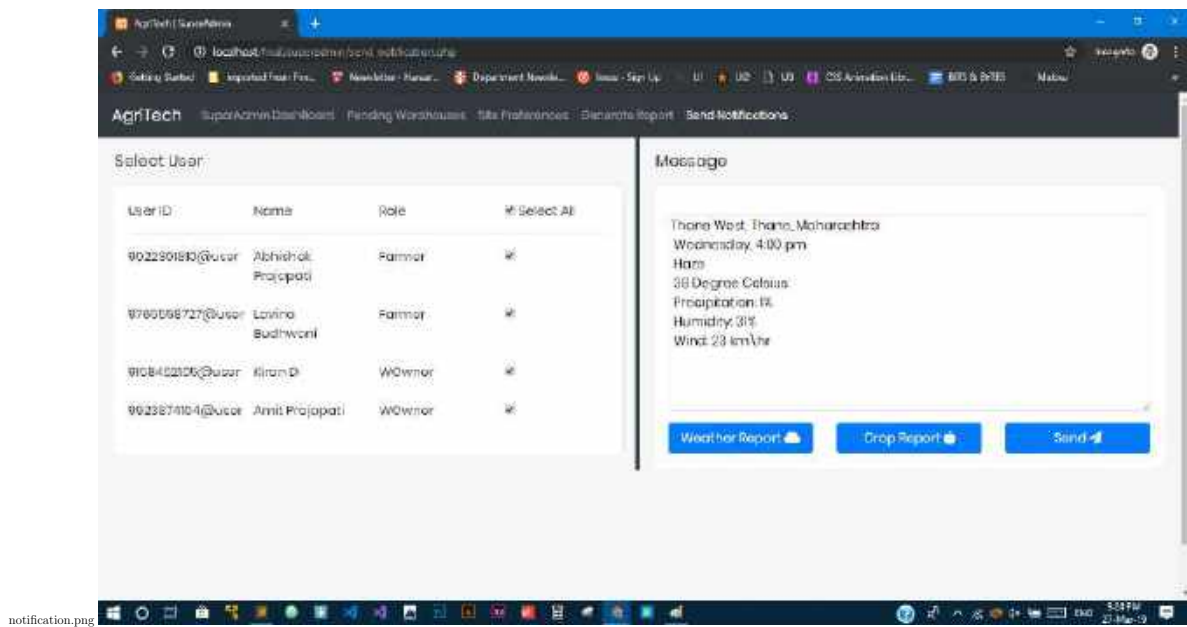
Figure 7.11: Bulk messaging
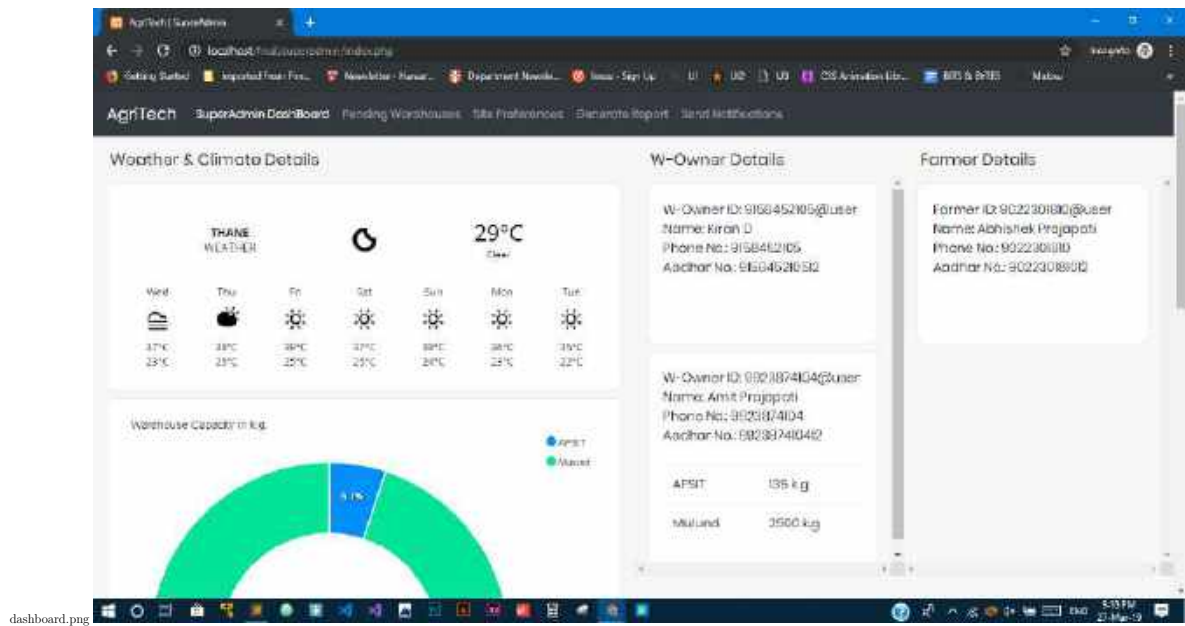
dashboard.png

Figure 7.12: SuperAdmin dashboard one

dashboard part 2.png
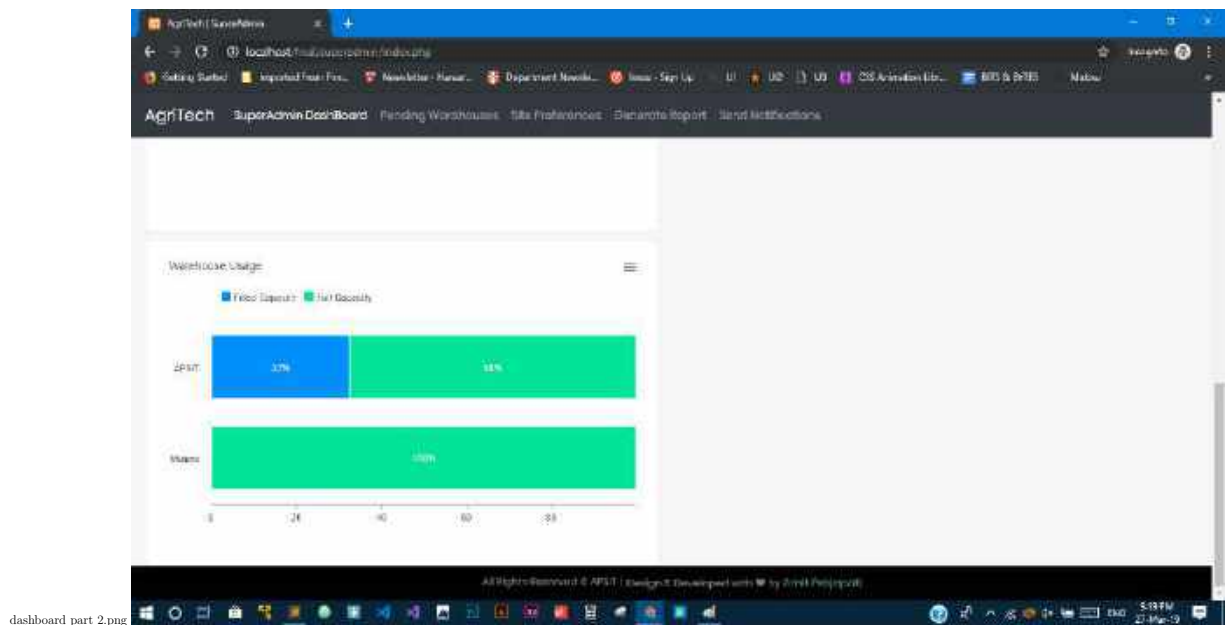
Figure 7.13: SuperAdmin dashboard two

Chapter 8

Conclusion and Future Scope

Thus, the basic idea of creating an online warehouse system to reduce the time and money of farmers have been achieved by implementation of web based application. This application provides them with and interface to book the warehouse online, also location based filter helps them to book the desired warehouse. SuperAdmin has the facility to keep the watch on whole system, he has ability to activate the warehouse. Our system thus has three modules which are: farmer, warehouse owner and superadmin. Each module has functionalities specified in the proposed system made for the project.So we have developed the system which will be beneficial and user friendly and can act as replacement to the existing offline warehouse system.

The Machine Learning part that we required for giving the suggestion of the weather forecast and crop prediction can be implemented as the future scope of the project. Also a forum that can be useful for effective communication between the farmers will be beneficial for new farmers as they can post their problems on forum and the experienced farmer can provide a solution for the same, these will ultimately lead to creation of a forum community which is online and helpful.

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Acknowledgement

Amit Prajapati (15104014)

Amisha Karia (15104008)

DhruvKumar Patel (15104026)

Lavina Budhwani (16204019)

Publication

Paper entitled **"Transforming Agriculture Using Technology : Proposal"** is presented at **""International Conference on Recent Advances in Communication, Computing and Informatics" (ICRACCI)"** held at A P Shah Institute of Technology by **"Amit Prajapati, Amisha Karia, DhruvKumar Patel and Lavina Budhwani"**.