Software Requirements Specification

for

Warehouse Management for food and other goods

Prepared by Group 13

Dhirubhai Ambani Institute of Information and Communication Technology

15/04/2021

.

Table of Contents

1. Introduction

- Purpose

We are going to discuss our warehouse management system. In this system the farmers can search nearby warehouses, check the available space present in the warehouse, book the warehouse in advance and many other features are executed. The supervisor of a particular warehouse can check details of all the farmers whose crops are present in that particular warehouse. The admin who is also the owner of the warehouses can check all the details of the staff and the farmers of all the warehouses.

- Intended Audience and Reading Suggestions

This document and our project will be useful to different warehouse owners and farmers. They can use this product to reduce the difficulties faced by farmers for searching the warehouse. This can also be useful for the government. They can use this product for all the government warehouses.

2. Description

2.1 Problem Definition

A system for warehouses & farmers. Warehouses are places where farmers can store their goods, and send to market when it's needed. System should be able to keep track of goods storage processes, crop storage life, storage capacity of a warehouse, its location and other details. Based on these details the farmer should be able to find his nearby warehouses. Future storage details should be available so farmers can reserve space for his crops in advance. Farmers should be able to decide what kind of vegetable to grow in advance based on goods already stored and future reservations and crops eviction rates of nearby warehouses.

2.2 Stakeholders of this system

The stakeholders of this system are :

- Admin
- Supervisors
- Farmers (Customers)

- Project Team (From Software Maintenance Side)
- Project Manager (From Software Maintenance Side)

2.3 Users of the system

The main users of this system are :

- Farmers
- Supervisor(Manager of a single warehouse)
- Admin(Owner of all the warehouses)

2.4 Elicitation technique

Technique Used : Brainstorming

Title : Warehouse Management system for farmers
Facilitator: TA Prutha Patani
Participants : Group Members
Goal : To find out actors of the project and their requirements
Research : Some websites
Ideas :
- Farmers can check the deposit date and the due date of each crop added.
- Farmers can select the best warehouse for them.
- Farmers must have the details of the warehouse supervisor.
- Farmers must be able to renew their allotment of a specific type of crop.
- Farmers must be able to book an advance slot for their upcoming crops.
- Supervisor must be able to see the list of farmers whose crops are present in that warehouse.
- Supervisor must be able to see the amount of money paid by the farmers.
- Supervisor should also know the list of staff working in that warehouse.
- Supervisor should have the contact details of the farmers whose crops are present in that warehouse.
- Supervisor must know the due date of all crops present.
- Admin should be able to see the space occupied in each warehouse
- Admin should be able to know the list of the staff working in the specific warehouse.
- Admin should be able to know the list of the farmers whose crops are in a specific warehouse.
- Admin must know the amount of money obtained from each farmer.

- Farmers should know the address of all the warehouses without login.
- Farmers should be able to edit their profile page

2.5　Use cases

- Farmers
  1) Check the condition about his crop
  2) Use the system for payment purpose
  3) Use the system to advance booking
  4) Current Capacity available in warehouses
  5) Total amount of time for which we want to keep the crops.

- Supervisor
  1) Have the details about the warehouse under his/her supervision
  2) Can update the storage to use the warehouse more efficiently
  3) Have the details about farmers which have used the warehouse under his/her supervision
  4) Access the payment details of farmers which use the warehouse under his/her supervision

- Admin
  1) Can use/ access the system at any time, all the functionalities should be accessible to him/her.
  2) Can check details about the local supervisor and the farmer.
  3) Can edit the details about his warehouse for marketing purposes.

2.6　User Interfaces

1) FARMER

   When a customer/farmer opens the system, he/she will be landed on the home page, on which there will be some options available to him 1) Sign Up/Sign In 2) Know the standard information about the warehouses located nearby him/her. If the user selects the second option, then he/she will be redirected to another page containing information about the warehouses nearby him/her. If the user selects the first option, then he/she will be redirected to the login page; there will also be the facility to sign up for first-time users. Once logged in, all the data related to that customer will be made available to him/her. There will be options like Payment, Storage, Complaint, Contact details.
   - If there are some of his goods in any of the warehouses in the Storage option, then there will be details about his/her goods in the warehouse.

There will also be some options like renewing the storage(if available) and information on any warehouse, which implies whether storage space is available or not.

- In the Contact details section, there will be information about the warehouse supervisors, in which his/her goods have been currently stored.
- In the Payment section, Information about his/her remaining/advance payment will be made available to him/her. He/She will also be able to make online payments under this section. That will be done by other online payment gateways.

2) SUPERVISOR

When the supervisor opens the system, he will first need to login/register on the home page. Then after successful registration/login, he will be directed to a menu containing the following :

- Current conditions/details of his/her warehouse.
- An indicator showing current storage capacity and storage left.
- A list containing the details of all the farmers who have their crops in his/her warehouse along with details of their respective crops and quantity, time and date of allotment, their payment details.
- A list containing the details of staff working in the warehouse.
- List of advance bookings done for the warehouse.
- A section containing details of the respective admin/owner.

3) ADMIN

When the Admin/Owner opens the system, he will also be needed to login into the system first. Once logged in, he will be provided with some options like Storage details, Payment details. There will be some Administrator only accesses provided to him.

- In one section, He will be able to access all the details about his warehouses. There will be details like total capacity, total available capacity, and other details about all of his warehouses independently.
- There will be one feature, through which he will be able to have the details about all the staff working in his warehouses.
- In one section, he will be able to access the payment details about all the customers currently using or whose payment is remaining.
- In one feature, he will be able to update/edit the details about his warehouses/supervisors.

Apart from the above, all the functionalities which were there for the supervisor will also be available for Admin/Owner.

2.7 Use case diagram
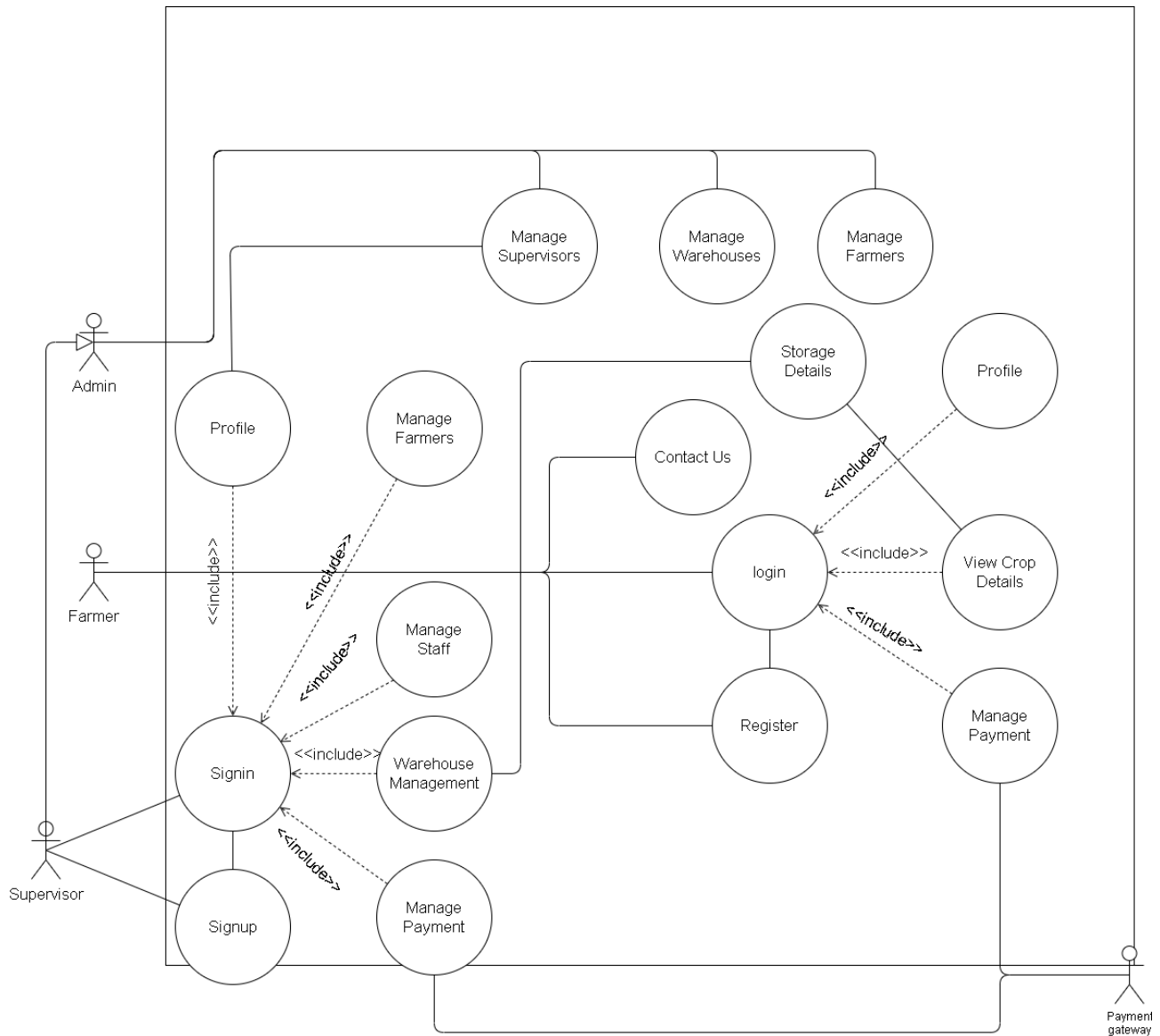
2.8 Open issues

The requirements that were identified by us but could not be implemented due to technical/non-technical constraints are :

- There can be one feature providing internal communications between different actors of the system, which can be extensively used in the Complaint section. There can also be other benefits of this feature to improve the overall user experience.

- The supervisor should be made aware of the minor facilities such as Fire Extinguisher services, Pest control cylinders, etc., in his warehouse. It can be done by implementing some type of alert messages/mails. We are not currently exploring it because it requires us to know about some other domains as well.
- In the real-world warehouse system, Supervisors should be given the facility of paying the laborers, who are working on daily wages in the warehouse, under his supervision.

2.9   Operating Environment

The software is a set of coded information procedures or a program when fed into the computer hardware, enabling the computer to perform various tasks. Software is like a current inside the wire, which cannot be seen, but its effect can be felt.

The following are the minimum software specifications to run this package:
- Operating System: Microsoft Windows 7 / 8/8.1/10
- Platform: C++ ,JavaScript ,HTML languages through Microsoft visual studio
- Database: Database access (MY SQL)

2.10   Assumptions

The assumptions made were :
1) The users will have an internet connection.
2) The users will have a computer that supports our product.
3) The users will have sufficient knowledge of how to use the website.
4) The users must have access to online payment methods.

3.   Functional Requirements

1) ADMIN

- Can use/ access the system at any time; all the administrative functionalities should be accessible to him/her.
- Can check details about the local supervisor and the farmer.
- Can edit the details about his warehouse for marketing purposes.
- Can display the Dynamic details of the current storage capacity available in each of the warehouses.
- Details of the total quantity and type of crops and kept in the warehouse.

2) SUPERVISOR

- Have the details about the warehouse under his/her supervision
- Can update the storage to use the warehouse more efficiently
- Have the details about farmers who have used the warehouse under his/her supervision
- Access the payment details of the farmers using the warehouse under his/her supervision
- Access details of the staff working at the warehouses.
- Can see the Dynamic details of the current storage capacity available in each of the warehouses.
- Details of the total quantity and type of crops and kept in the warehouse.
- Details about the Permissible time for each of the crops to farmers

3) FARMER

- Check the condition of his crop in the warehouse
- Use the system for payment purposes.
  - Instant Deposit
  - Installment Payment
  - Advance Booking
- Current Capacity available in warehouses
- The total amount of time for which they want to keep the crops.
- Can choose the most suitable warehouse according to their location and requirements.
- The total yield of their crop.
- Can know the available capacity in warehouses
- Pest Protection (Crop) facilities available for crops in warehouses
- Details of each crop:
  - The number of sacks of each crop.
  - Future crop reaping.
  - Crop Storage Life

4.   Nonfunctional Requirements

The non-functional requirements of the system are:

- The system should remain accessible 24x7.
- It should be a web application that should work with every web browser on PC and mobiles.
- The system should encrypt the passwords of all its users.
- The system should be able to send notifications to the farmers.
- The system should be capable of handling many user logins at the same time.
- The error rate of users for payment at the checkout page must be minimum.
- The system should show all the nearest warehouses according to the farmers' location.
- The date format in the system must be date/month/year.
- The system should be able to calculate the amount of free space available in the warehouse.
- Each request of the farmer must be processed within 10 seconds by the system.