

# Farmers Buddy

## Software Requirements Specification

### Version 1.0

Submitted By:-

**Team Name**

Secret Fusion

**Team Members**

Anirudh Singh Shekhawat

Arjun Ramnani

Deepak Bhati

Brajesh Kumar Suman

**Project Guide**

Saurabh Sharma

**Revision History**

<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Author</b>
05-09-2009	1.0	Software Architecture Document for farmers buddy based on TGMC Requirements	Secret Fusion

# Table of Contents

## □□ Introduction

1. Purpose
2. Scope
3. Definitions, Acronyms and Abbreviations
4. Reference
5. Technologies

## □□ Overall Description

1. Product Perspective
2. Software Interface
3. Hardware Interface
4. Communication Interface
5. Product Function
6. User Characteristics
7. Constraints
8. Use-Case Model Survey
9. Database design
10. Assumptions and Dependencies

## □□ Specific Requirements

1. Use-Case Reports
2. Use Case View

# 1. Introduction

## 1.1 Purpose

- This document provides a comprehensive architectural overview of the system, using a number of different architectural views to depict different aspects of the system. It is intended to capture and convey the significant architectural decisions which have been made on the system.
- It is the agriculture portal which provides solutions to small farmers and agriculture students of India. Besides Salt & fertilizer analysis for particular region this portal also helps farmers to know about government loan and insurance schemes.
- It also helps them make decisions on mandi/market and best prices. NGOs are trying to spread messages to make agriculture more eco-friendly through this site.
- This will help bring together all those people who intend to work on a common objective i.e. Farming and discuss among themselves what is best for them.
- This is a new movement to empower the farmers of our country who have been long living under the dominance of people like mandi dealers who control the prices which is to be paid for the crops. And this always has adversely effected the farmers to get the best price for what they are selling.
- This is a platform to bring together what is best for the farmers and top of that, let them alone decide what is best for them, by just giving them the data and information about the things they want to know like soil, which crops best suit their soil types, monsoon predictions and other important details which prove vital for them

## 1.2 Scope

This document provides an architectural overview of the Farmers Buddy System. This system being developed by the team Secret Fusion to support the large population of country i.e. farmers by providing various helps online.

- It provides basic soil analysis for all regions and suggestions on which fertilizers to use where & how much? Which crop, herb or vegetable can be grown where and in which season?
- It would maintain a database of what has been grown in the past few years in a particular area, which crop has produced the max output in terms of money and which also is the most beneficial for the land too, because since there would be fertilizers to be used in various aspects of the farming.
- This will apply to all the farmers what-so-ever, it doesnt matter what are they farming, they just need to submit their data and details to the main database and then their details would comeup on the main sever and this would include them in the system.

- Online query handlings for all users. Queries can be general or directed to a particular officer.
- Facilitate communication between user, experts and general public through - Discussion forum/chat/mail/polls.
- Information about major crop markets (mandi) and their current price for crop should be published daily.

### 1.3 Definitions, Acronyms and Abbreviations

**HTML:** Hypertext Markup Language is a markup language used to design static web pages.

**EJB:** Enterprise Java Beans.

**J2EE:** Java 2 Enterprise Edition is a programming platform, part of the Java Platform for developing and running distributed multitier architecture Java applications, based largely on modular software components running on an application server.

**DB2:** DB2 Database is the database management system that delivers a flexible and cost effective database platform to build robust on demand business applications.

**WAS:** Web sphere application server is an application server that runs business applications and supports the J2EE and web services standards.

**WSAD:** Web sphere studio application developer is a toolkit which is designed for the creation of more complex projects, providing fully dynamic web application utilizing EJB's. This consist of EJB tools , CMP ,data mapping tools & a universal test client that is designed to aid testing of EJB's.

**HTTP:** Hypertext Transfer Protocol is a transaction oriented client/server protocol between web browser & a Web Server.

**HTTPS:** Secure Hypertext Transfer Protocol is a HTTP over SSL (secure socket layer).

**TCP/IP:** Transmission Control Protocol/Internet Protocol, the suite of communication protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP.

**RMI:-**Remote method invoking provide by Sun.

### 1.4 References

- ✓ IEEE SRS Format.
- ✓ Problem Definition (Provided by TGMC).
- ✓ CT Arrington. *Enterprise Java with UML*. OMG Press.

### 1.5 Technologies

J2EE: Application Architecture

DB2: Database

WSAD: Development Tool

WAS: Web Server

Rational: Design Tool

## 2. Overall Description

This document presents the architecture as a series of views ; use case view, logical views, process views and deployment view.

### 2.1 Product Perspective

- Current status of farmer in India is not very sound and they constitute a major part of population, since farming is still the most popular occupation in the country which constituted the maximum number of people either employed directly or indirectly in it.
- With the population of the country passing way cross the one billion mark, which brought it as the second most populous country in the world, but this doesn't mean that our food production has increased as much.
- So this becomes the most important aspect of the modern india, when the country is doing so much progress in terms of information technology and other modern sector industries.
- We need to have a strong food production and self sufficient system so that we don't have to depend on other countries for our food supplies.
- So this system comes as to help and facilitate a farmer's cultivating habits and advise them to earn more profit and help them grow.
- This system is the best example of information technology being used for the most important aspects of a country and here IT would enable a farmer of the country to become stronger and more fruitful.
- This would be achieved with maintaining a database of all farming knowledge onto computer servers and make them available to the farmers through internet to anywhere.
- All farmers, field officers, manufacturers and experts functionality must be available from PCs with remote connections. This means that this should be available to all farmers and other users of the system from anywhere in the country through internet.
- The databases should be well protected from any sort of breach. All accesses should be subjected to authentication. This is extremely important because

when such a huge and vital information is being given out and maintained then it becomes utmost necessity to protect the vital information.

- Implemented with client-server system. Client portion resides on PC and the server portion must operate on a Server. And the client could remotely access the portal.
- The web pages (XHTML/JSP) are present to provide the user interface on customer client side. Communication between customer and server is provided through HTTP/HTTPS protocols.
- The Client Software is to provide the user interface on system user client side and for this
- TCP/IP protocols are used.
- On the server side web server is for EJB and database server is for storing the information.

## 2.2 Software Interface:

Client on Internet: Web Browser, Operating System (any)

Client on Intranet: Client Software, Web Browser, Operating System (any)

Web Server:

Data Base Server: DB2, Operating System (any)

Development End: WSAD (J2EE, Java, Java Bean, Servlets, HTML),

DB2, OS (Windows), Web Server.

## 2.3 Hardware Interface:

Client Side			
	Processor	RAM	Disk Space
Internet Explorer	Pentium II at 500	64 MB	1 GB

	MHz		
<b>Server</b>			
Web Sphere application server  V5.0	Pentium III at 1.0Ghz	512 MB	2GB
DB2 V8.1	Pentium III at 1.0Ghz	512 MB	1GB (excluding data size)

## 2.4 Communication Interface:

Client on Internet will be using HTTP/HTTPS protocol.

Client on Intranet will be using TCP/IP protocol.

## 2.5 Product Function:

- **Track Account Level Data:** In this module, receivables from customer are maintained.
- **Service Level Agreements:** It contains the agreements of providing the services related to product and customer.
- **User Contact Information:** It maintains all the details (Personal, Official, Contact, and Company) of the customer.
- **Product Ownership Details:** It maintains the information that does which customer own which product.
- **Track Support Transactions:** Maintenance of transactions related to the services provided to the customer in the form of support.
- **Maintaining Logs:** Activities of the System Users can be tracked through the logs, which is maintained by the system.

## 2.6 User Characteristics:



Every user should be comfortable of working with computer and net browsing. He must have basic knowledge of English too.

## **2.7 Constraints:**

GUI is only in English.

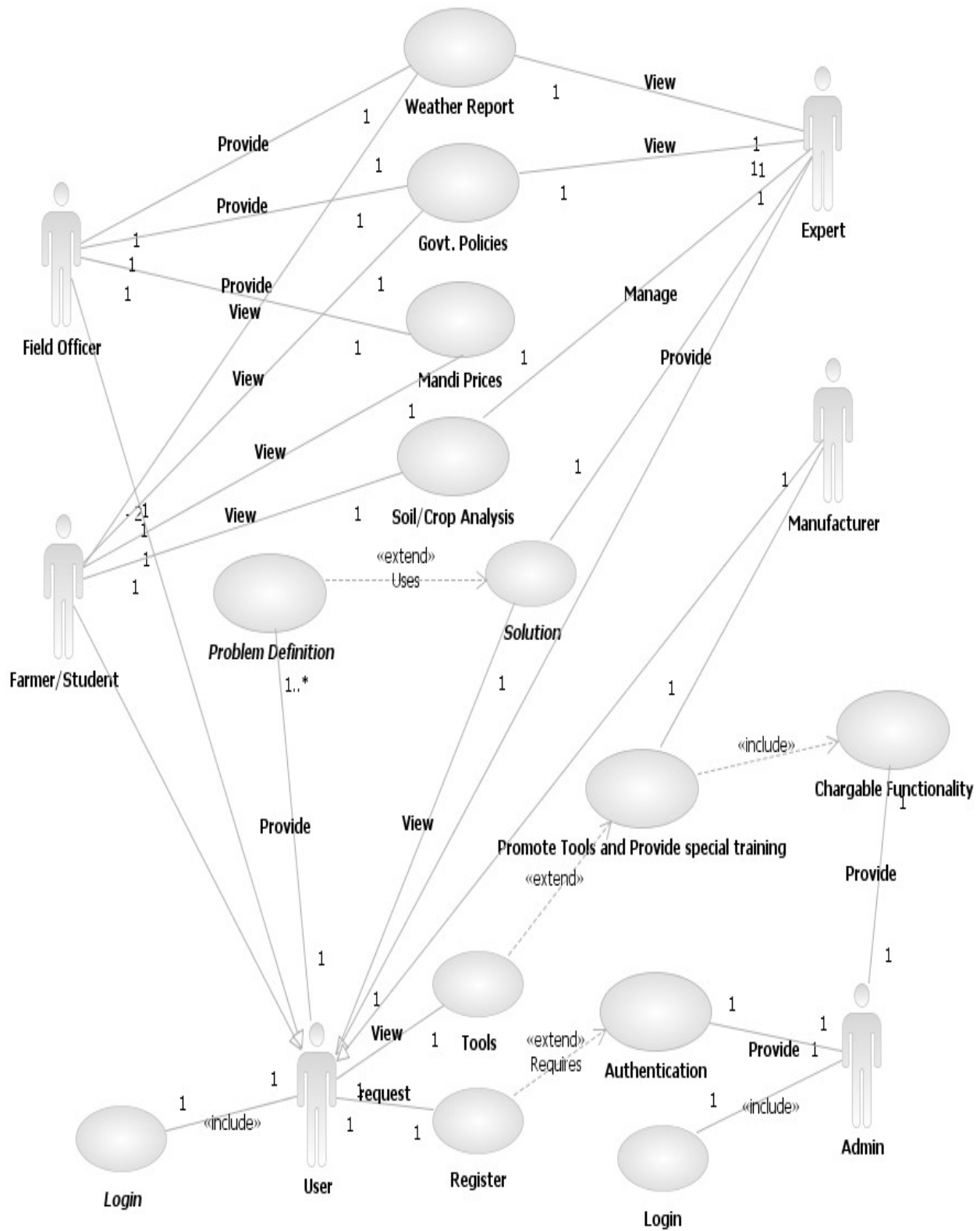
Login and password is used for identification of customer and there is no facility for guest.

This system is working for single server.

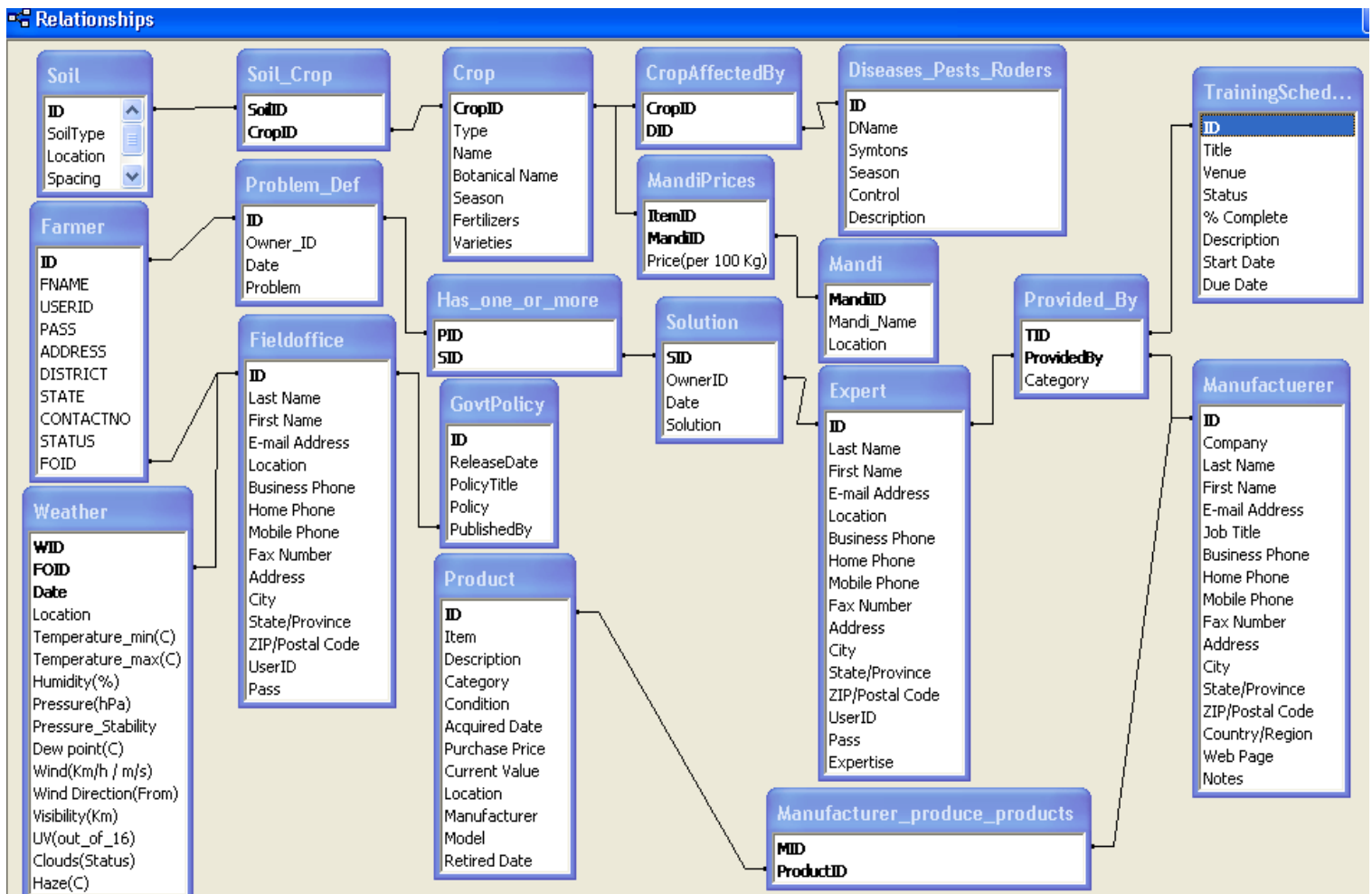
There is no maintainability of back up so availability will get effected.

Limited to HTTP/HTTPS.

## 2.8 Use-Case Model Survey:



## 2.9 Database Design



### **2.10 Assumptions and Dependencies:**

The details related to the product, customer, payment and service transaction provided manually.

Administrator is created in the system already.

Roles and tasks are predefined.

## **3 Specification Requirements**

### 3.1 Use-Case Reports

**Name of activity:** view weather report

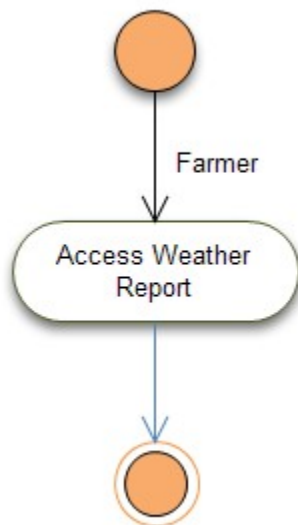
**Description:** farmer can click on the view weather report section in the portal and view the weather predictions for a place.

**Preconditions:** Farmer is logged in

**Normal flow of events:** System users have already been created and assigned some roles, tasks and permissions.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** view mandi prices

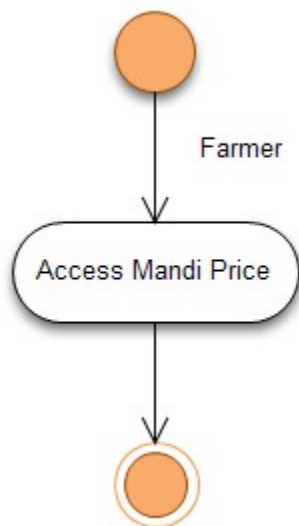
**Description:** Farmer can view mandi prices of a mandi which is closest to him and which offers him best price on his products.

**Preconditions:** farmer is logged in

**Normal flow of events:** farmer could check various mandis mentioned in the mandi section and compare prices

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** Authentication method

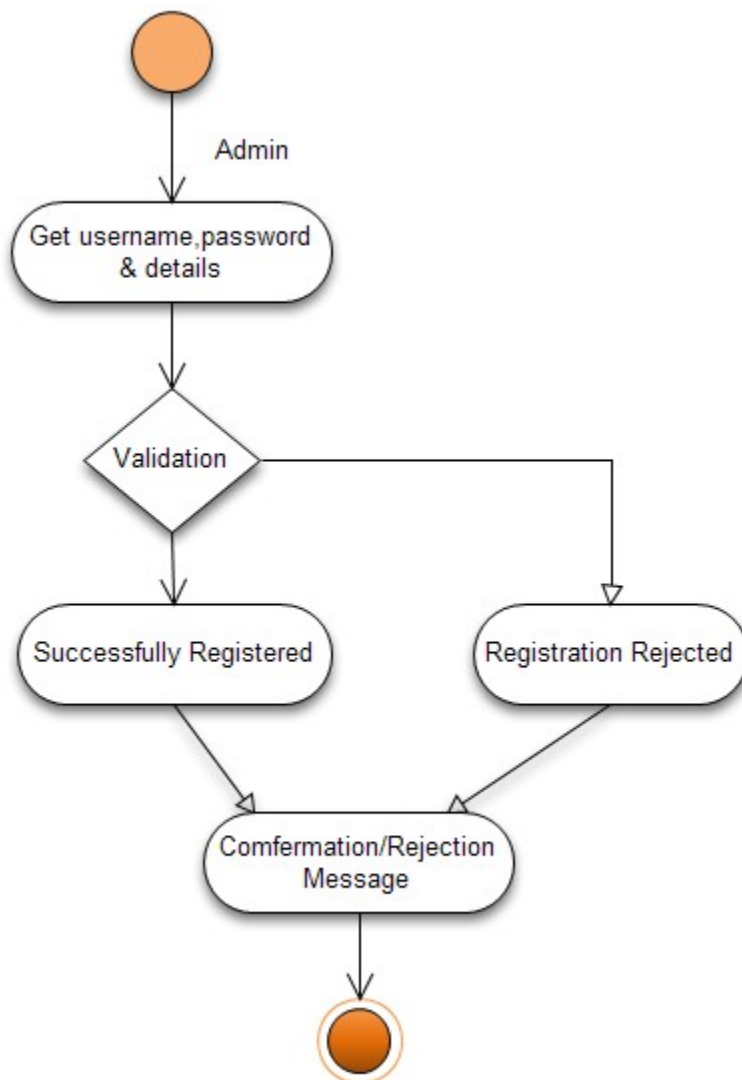
**Description:** Admin is logged into the system to do the authentication tasks assigned to him

**Preconditions:** Administrator is logged in.

**Normal flow of events:** administrator checks details of those users who requested for registration. If the user details are correct then conformation message will be send to the user.

**Alternate flow of events:** If the user details are not valid/correct, registration is rejected and send rejection message to the user.

**Post condition:** none



**Name of activity:** Charge detail

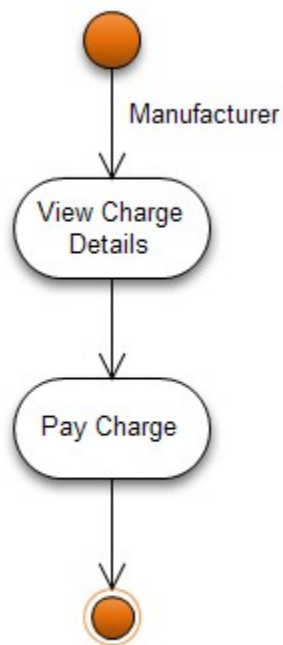
**Description:** manufacturer views the charge detail and promote his tools after pay charge on the website.

**Preconditions:** manufacturer is logged in.

**Normal flow of events:** after logged in manufacturer can view charge detail to promote the tools and for promotion of tools he will be pay.

**Alternate flow of events:** none

**Post condition:** none





**Name of activity:** Login

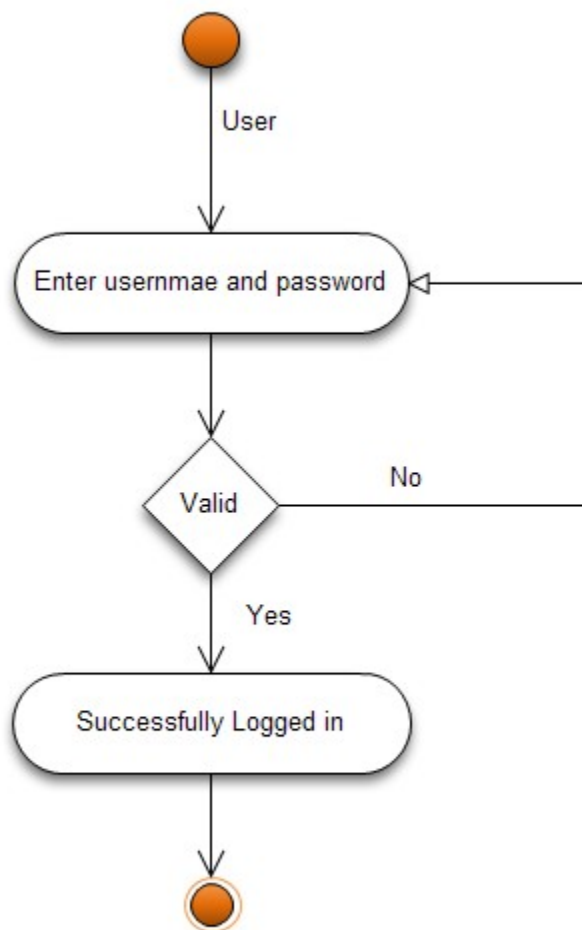
**Description:** User enters the username and password and admin allow him to access the website.

**Preconditions:** admin is logged in.

**Normal flow of events:** User gives the username and password. Admin check this information and check its validation. If it is valid user will be successfully logged in.

**Alternate flow of events:** if the username and password is not valid a message sends to user for correct username and password.

**Post condition:** none



**Name of activity:** Problem Definition

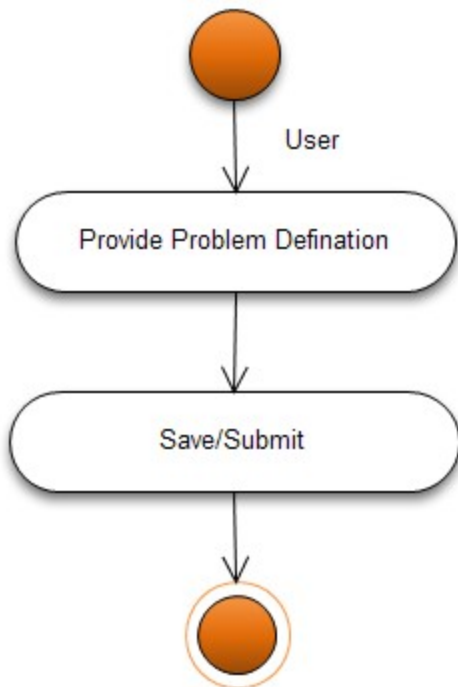
**Description:** User submit the problem to get answer of the problem.

**Preconditions:** User is logged in.

**Normal flow of events:** After login, the user provide the problem definition and submit it to get solution.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** Provide Solution

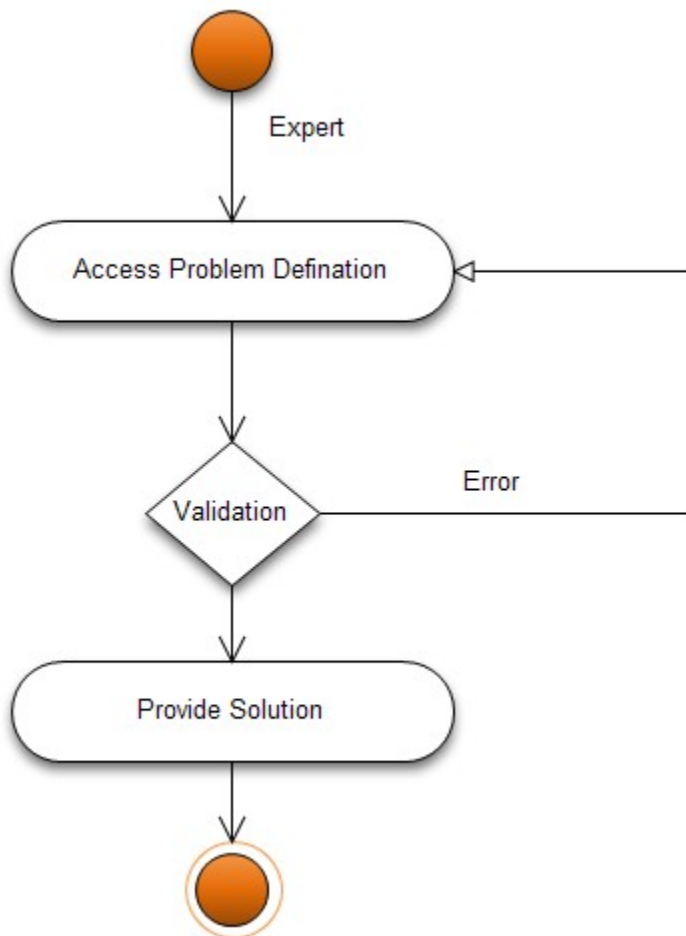
**Description:** Expert provides the solution of the problem submitted by the user.

**Preconditions:** Expert is logged in.

**Normal flow of events:** Expert access the problem problem definition and checks validation of this problem. If it is valid expert will provide the solution of it.

**Alternate flow of events:** If problem is not valid an error message will be display.

**Post condition:** none



**Name of activity:** Provide mandi price

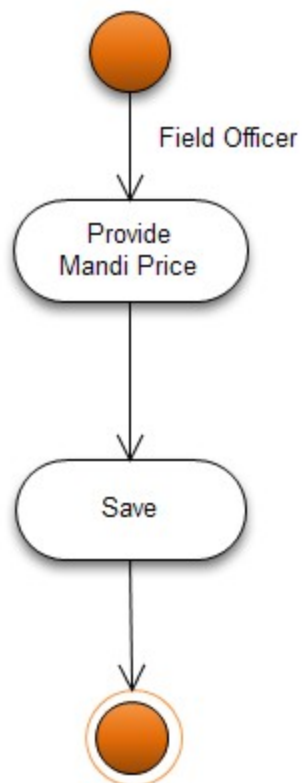
**Description:** Field Officer provides the current mandi price.

**Preconditions:** Field Officer is logged in.

**Normal flow of events:** Field Officer provides the current price of mandi and save it so that user can view it.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** Provide Weather Information

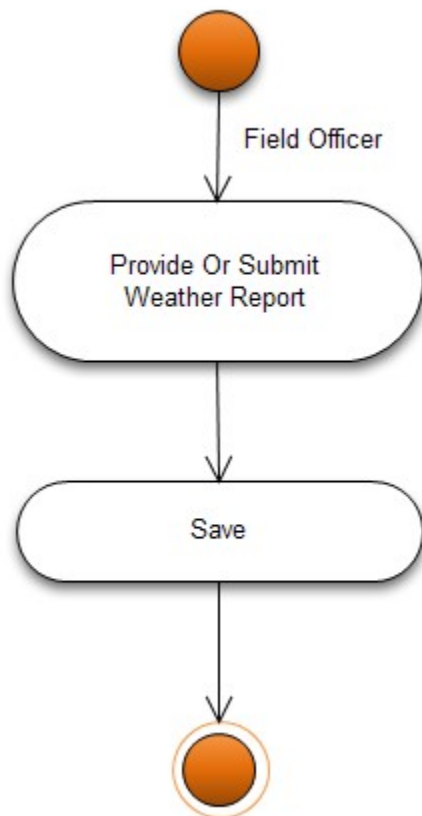
**Description:** Field Officer provides the weather information and submits it.

**Preconditions:** Field officer is logged in.

**Normal flow of events:** Field Officer provides or submits the weather report and save it so that user can view it.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** Registration

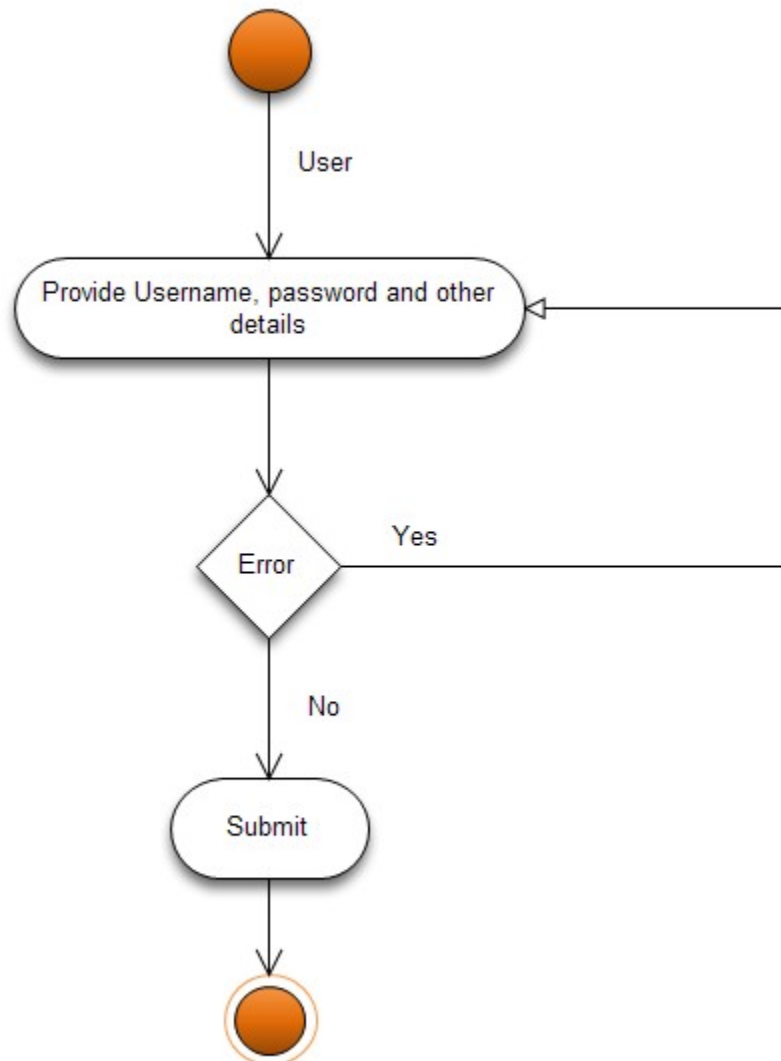
**Description:** Admin allows to User to access the website according to fill up the form information.

**Preconditions:** Admin is logged in.

**Normal flow of events:** User provides the username, password and other detail for registration. Admin checks these details. If it is valid then it is successfully saved.

**Alternate flow of events:** If these information contains any error a message goes to the user to fill again the form.

**Post condition:** none



**Name of activity:** Provide Training Details

**Description:** Manufacturer provides the training for his new tools.

**Preconditions:** Manufacturer is logged in.

**Normal flow of events:** Manufacturer provides the training schedule details and for new tools and saved it.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** View Training Details

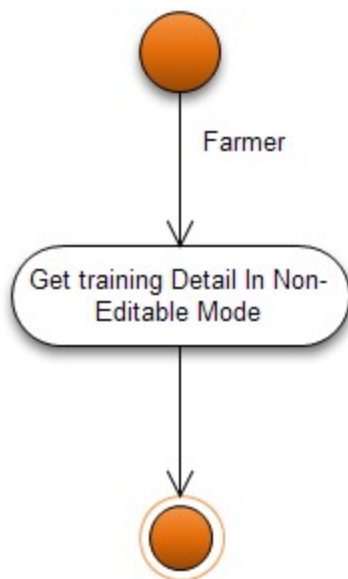
**Description:** Farmer gets the training schedule in non editable mode.

**Preconditions:** Farmer is logged in.

**Normal flow of events:** Farmer gets the details of training in non sditable mode which is provided by Manufacturer it.

**Alternate flow of events:** none

**Post condition:** none



**Name of activity:** View Govt. Scheme



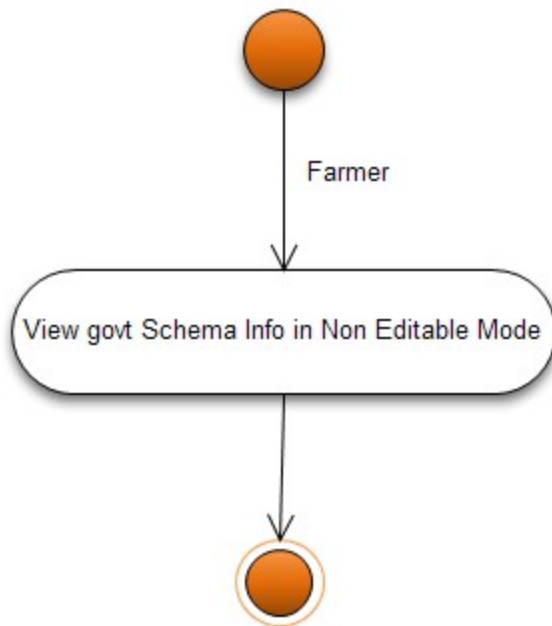
**Description:** Farmer can view govt. Information

**Preconditions:** Farmer is logged in.

**Normal flow of events:** Farmer views the govt. scheme in non editable form provided by the field officer.

**Alternate flow of events:** None

**Post condition:** none



**Name of activity:** Provide Govt. Scheme

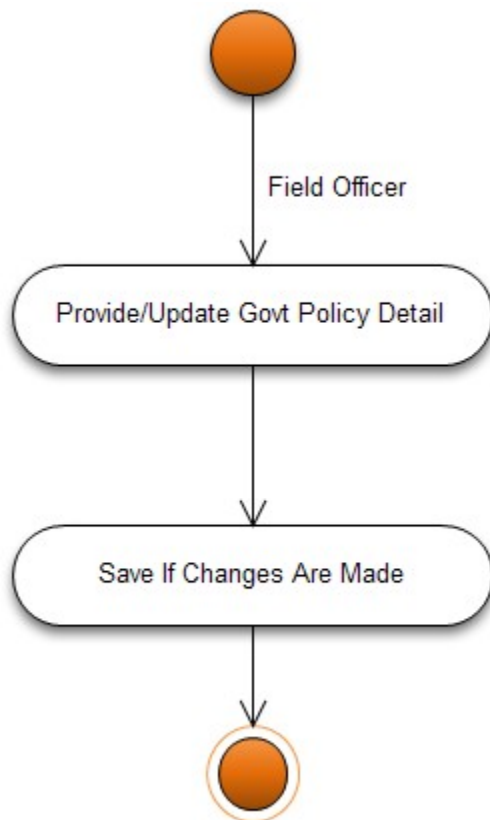
**Description:** Field officer provides the govt policy details and submit it.

**Preconditions:** Field officer is logged in.

**Normal flow of events:** Field officer provides and updates the govt. policy details and saved it if changes are made.

**Alternate flow of events:** None

**Post condition:** none



### 3.2 Use Case View

### 3.2.1 Significant Use Cases

- **Registration:** This system is based on the concept of different users, and there are four users of the system. When a person enters into the system for the first time, he/she should identify themselves as to which category of users do they belong to, and then go on to register themselves. Every user of the system viz. field officer, farmer, expert and manufacturer should register themselves with the system and get authentication from the admin of the system. While registering in the system the user needs to provide all the information being asked in the registration form. The details in the system would help fulfill the requirements which have been laid down for a particular user.
- **Login:** user has to authenticate himself every time he wants to access the system by providing username and password. This would enable him to go to his account and check out things which he could depend on his account type. The login has to be

**Facilitating with tools:** the manufacturer could advise and provide some training activities for the farmers on new technology and tools. Farmers would know what is latest and new in the farming technology, what is that they should look forward. This is again important because farmers should have an up-to-date information about what all farming tools are there in the market which could satisfy their needs. And

- **Submitting problems:** A farmer could submit his problem to the system and ask for solution. The problems could vary from farming issues to technical ones. They can ask about which crops would suit their needs, since there are people who do not have the knowledge and skill to look for their issues for themselves on the portal, for them, they could simply submit their issues and get the result of their problems what so ever.
- **Identify farmers need:** The field officer could help farmers by becoming an interface between farmers and the system and could help them identify their needs. Field officers would help farmers to get to their problems without wasting time on unnecessary details.
- **Provide help:** An expert who may not be local to the village could provide some expert help by sitting at some remote place. This can only become possible due to the remote server which would let the experts reach out to all farmers and give them necessary help.
- **Provide Pricing list:** The field officer could provide the farmers with the pricing list so that they may not face some fraud. This is an important part

because when farmers go to mandies they face dalas and food dealers who buy food stocks from farmers at cost of their will and do not follow any specifications given out by the government.

- **Provide weather report:** The field officer could provide the farmers with the weather reports help them cultivate more. Correct weather report helps farmers to grow crops according to the water contents and other information about the soil which would range from the information from the reports submitted by the field officer.
- **Awareness Drive Govt. schemes: :** The field officer could provide awareness drive on Govt schemes specially loan and insurance based for farmers. This would enable farmers to grow crops whose seeds might not fit into the budget of the farmers but from government loans, he could grow any crop which suits the needs of the particular soil types and the region.