

E-Gram Seva

Software Design Specification v2.0

Team 22

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REVISION HISTORY

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1. Introduction

1.1. Purpose

This software design document describes the architecture and system design of our software, E-Gram Seva. It will act as a reference for each member of the group covering the design and details for all the functionalities of the software.

This document helps us obtain:

- Low-Level Design of our Software.
- Different modules and components to be implemented.
- Entry document for Coding Phase.

1.2. Project Scope

1.2.1. Present Scope

Our web based application aims to provide agriculture related news like prices of grains, weather forecast and, in addition, health-care updates easily available to the villagers (end users) specifically. This will facilitate governmental and non-governmental organizations to provide information to the villagers and spread awareness among them.

1.2.2. Future Scope

This software usability can be extended by adding more features such as more updates as per the requirements of the end users. This includes job facilities, general bulletin etc.

1.3. Reference Material

- SRS
- Pressman, Roger S., and Darrel Ince. Software engineering: a practitioner's approach. Vol. 5. New York: McGraw-hill, 1992.

1.4. Definition and Acronyms

SRS System Requirement Specification

SDD Software Design Document

DFD Data Flow Diagram

GUI Graphical User Interface

SMS Short Message Service

KDLOC Kilo Delivered Lines of Code

PHP Personalized Home Page

DA-IICT Dhirubhai Ambani Institute of Information and Communication Technology

2. System Overview

This document is created after the requirements are clearly understood in Requirements phase. It describes in detail how various modules are implemented.

The system will follow the three-tier architectural style and be organized into three layers:

- Interface layer
- Application layer
- Storage layer

The **Interface layer** will be the graphical user interface that allows the users to interact with the system (Website). It will be implemented using Dreamweaver.

The **Application layer** will contain the logic and algorithm depending on which SMS's will be delivered to end user. The users can query the health-related information and its implementation is different.

Finally, the **Storage layer** will form a database to store the metadata required for the system. For our software, we require the information about the end users (mobile number, subscription details) to be stored in the database. Also, the updates to be sent through message are stored in the database.

2.1 Interfaces

2.1.1 Software Interface

We will use WAMP server. MySQL is used as the database server. Daifaan, an SMS server is used for integration between the computer and the phone. Dreamweaver will be used for website development.

2.1.2 Hardware Interface

Our computer system will require the following minimum. The computer system is to be equipped with Intel Pentium 4 or above, 256 MB RAM or above, disk Space enough for database storage.
A registered sim card is required whose validity expiration is taken care of.

2.1.3 Communication Interface

The messages are transferred using the telecom service of SMS.

HTTP is the underlying protocol used for the operation of the website.

3. System Architecture

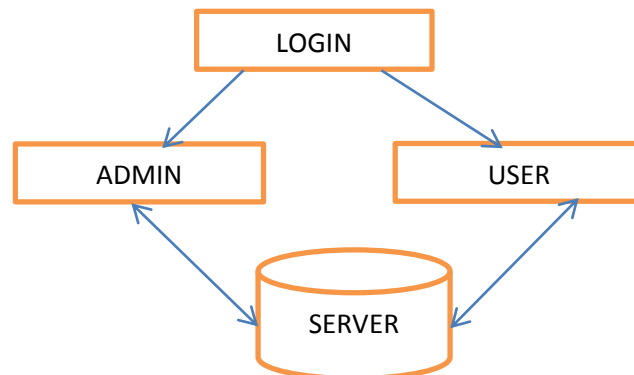
3.1 Architectural Design

The whole system has been divided into the following modules:

- Login Module
- Admin Module
- User Module
- Client SMS Module
- User SMS Module.

- **Login Module**

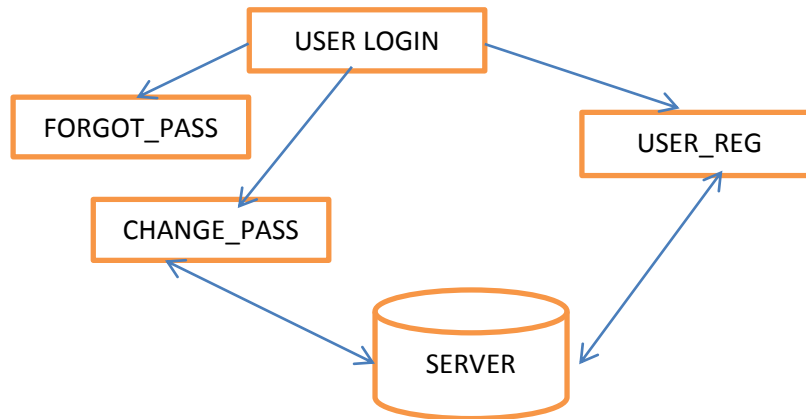
This module enables the users to login with username and password provided by the administrator. It also enables administrator to login and scrutinize user statistics.



- **User Module**

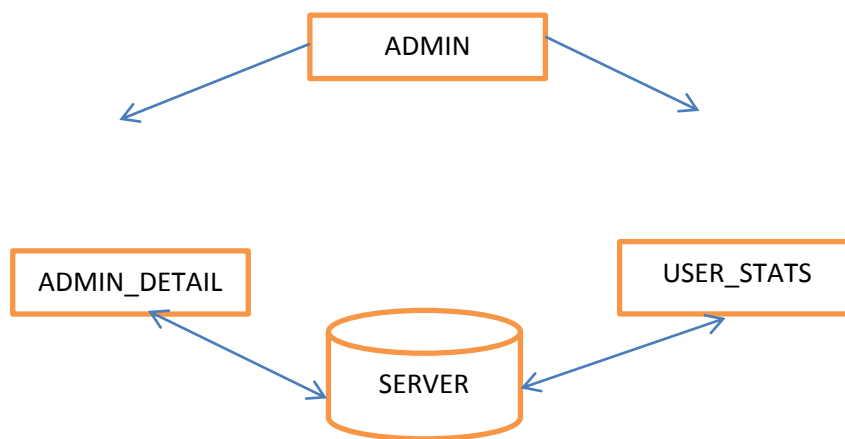
This Module enables users to:

- Register for the SMS updates
- To change their subscription preferences,
- To change their password
- To retrieve forgot password



- **Admin Module**

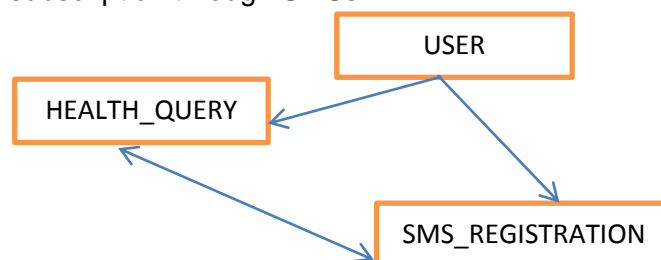
This module enables admin to login to his account where he can analyze user statistics.



- **User Send SMS**

This module enables user

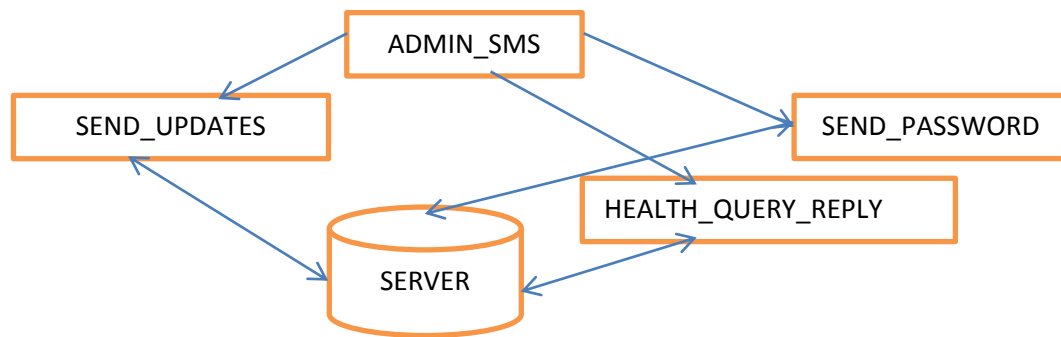
- To send queries regarding health-care.
- To register for eGram-Seva through SMSs.
- To change subscription through SMSs.



- **Admin Send SMS**

This module enables admin to

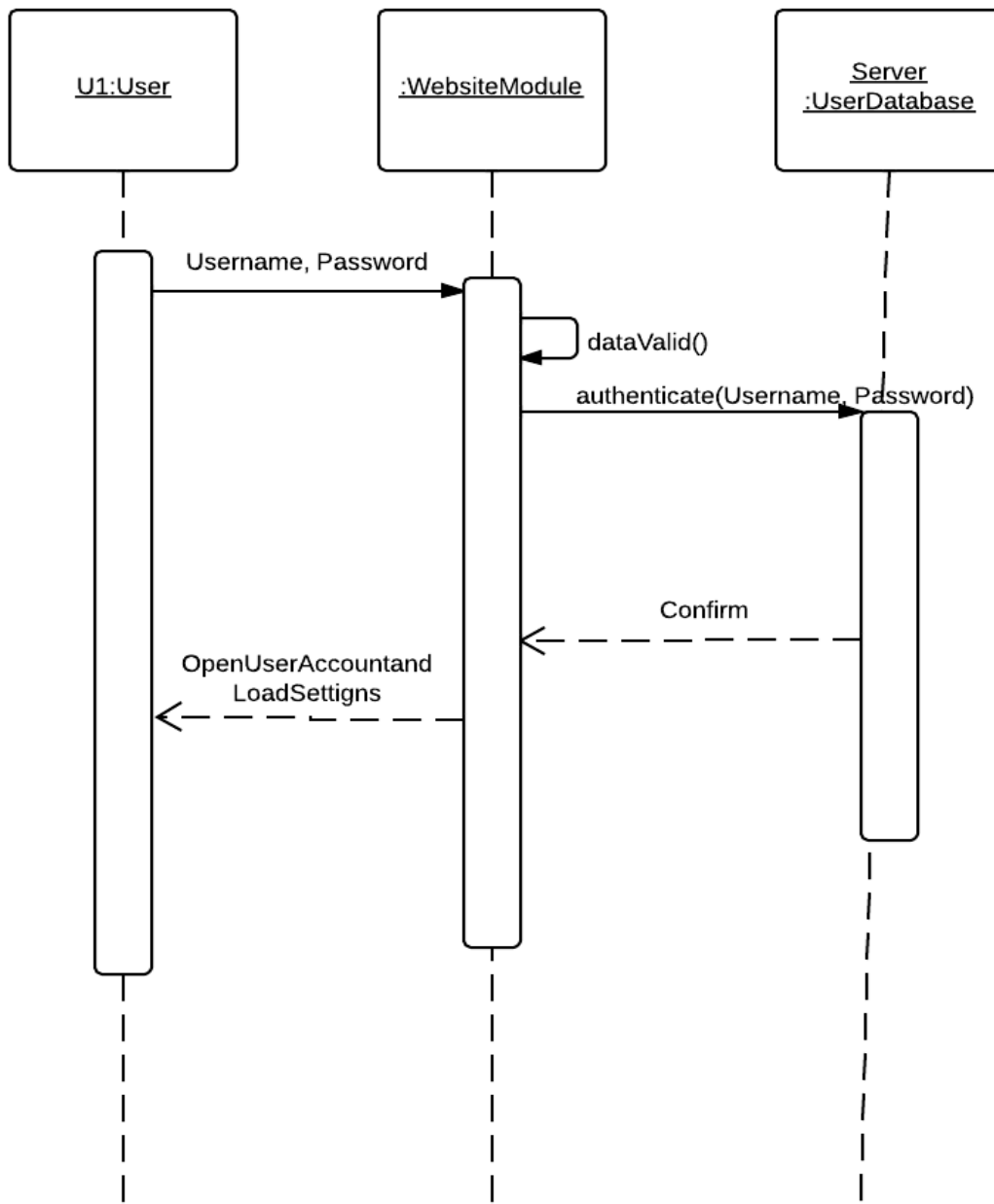
- Send password to users who register
- Send updates of prices and weather as per the subscription of the respective users.
- Send response to users healthcare-related queries.



3.2 Data Decomposition

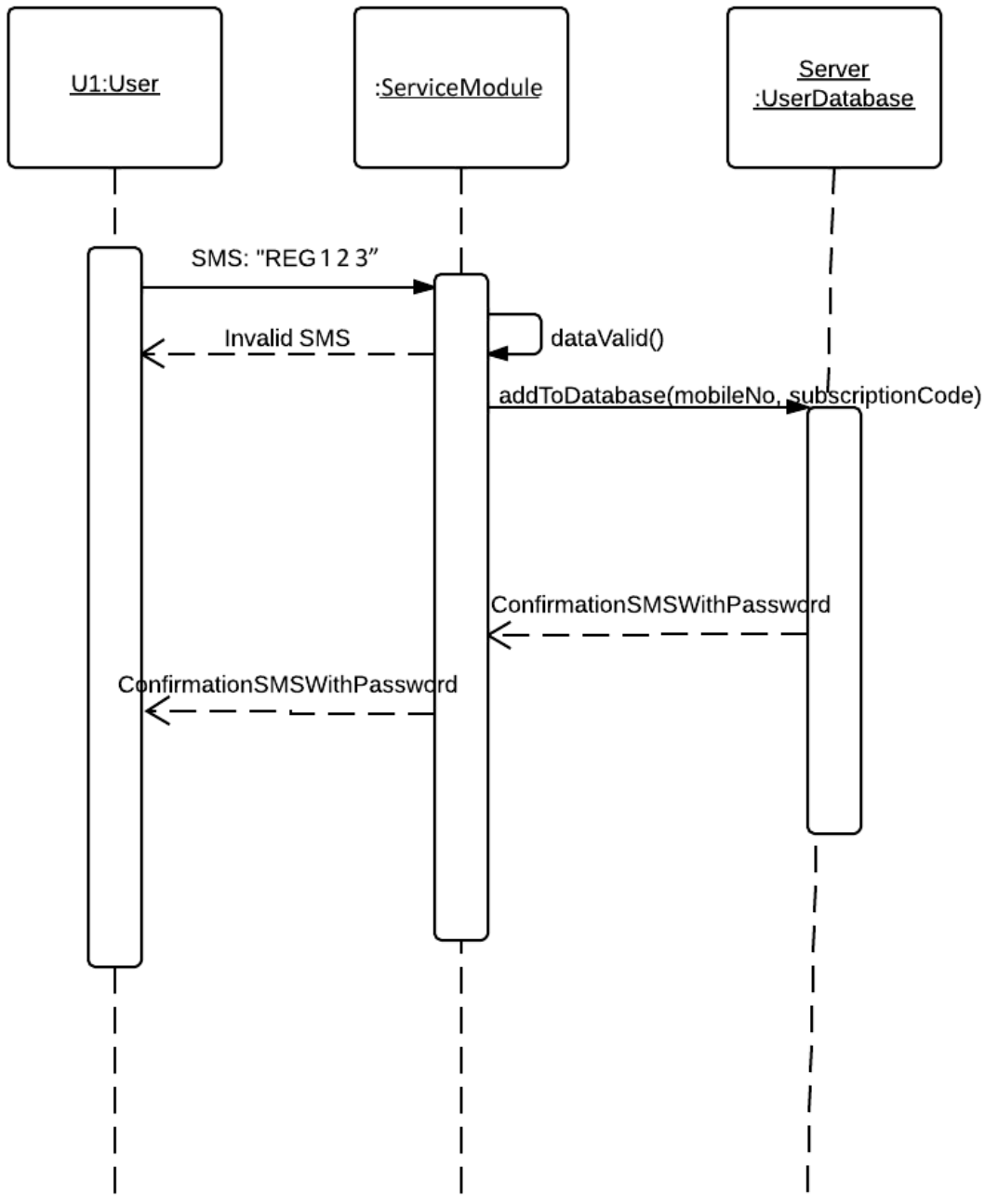
Sequence Diagrams are used in this section to depict the interaction and flow among the various different

Login



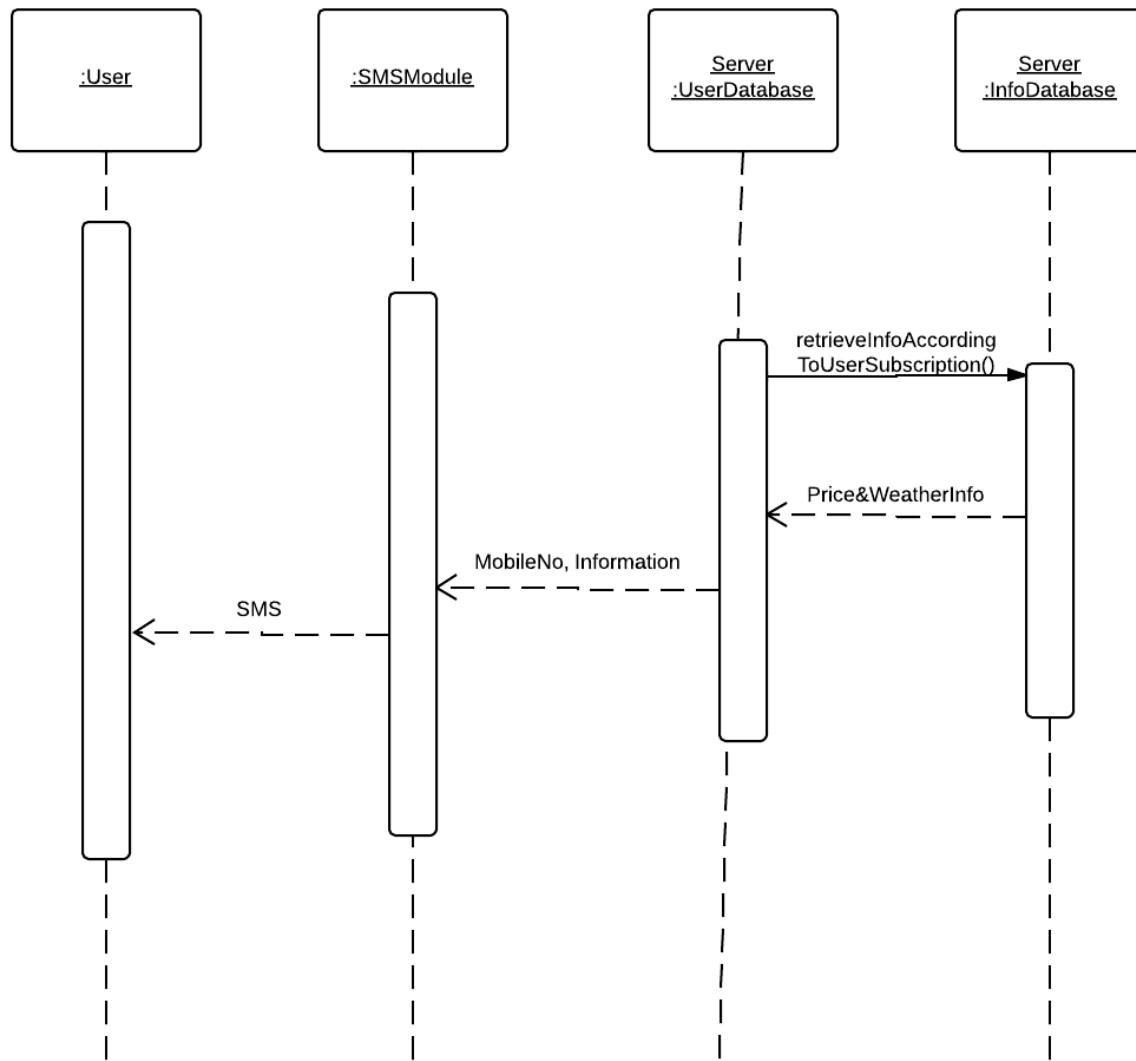
The user enters his username and password to login at the website. It is authenticated and if correct, the user's personal account is opened. dataValid() checks if the entered information is correct. (Only numbers and special characters allowed)

Registration



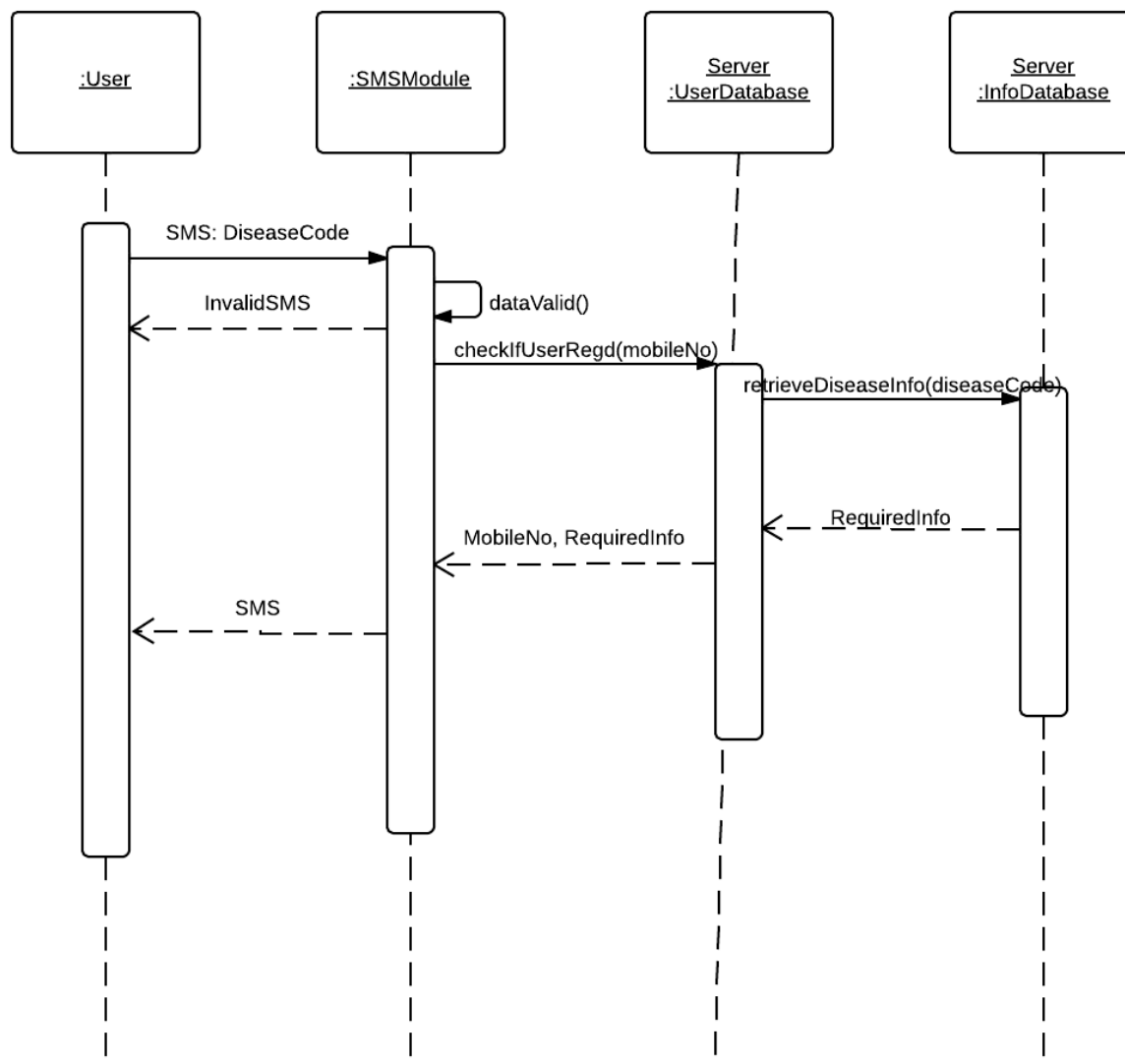
The user sends SMS in the standard format: "REG 1 2 3". If the format is followed, the details of the user's number and subscription are sent to the database for storage and a confirmation message is sent to the user with a randomly generated password for his user account.

Send SMS Updates



According to the individual subscription, each registered user is sent daily updates. `retrieveInfo()` gets this information to be messaged from the crops table and uses the `temp_main_db` table to get the mobile numbers to which to message. The SMS is then sent.


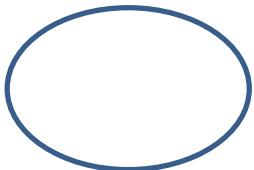

Response to Health Queries



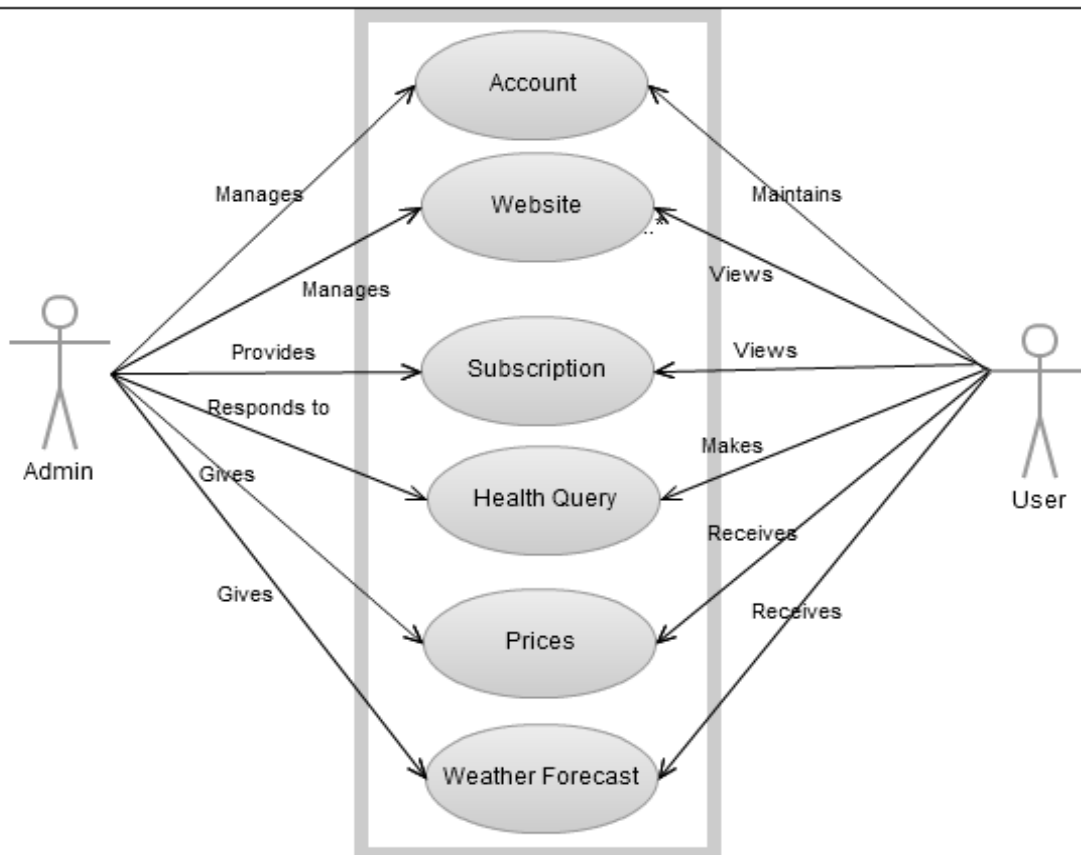
When a user sends a query message for a particular disease, it's response is obtained from disease table after checking the format of the message as well as if the user is registered for service. The SMS is then sent.

3.3 Use Cases

Use cases are diagrams that represent the relationship between a use case (a requirement) and the actor. Actors are human beings, systems or devices which will use the system and/or maintain it.

S.No	Symbol	Meaning
1		Association
2		Use-case
3		Actor

Use Case

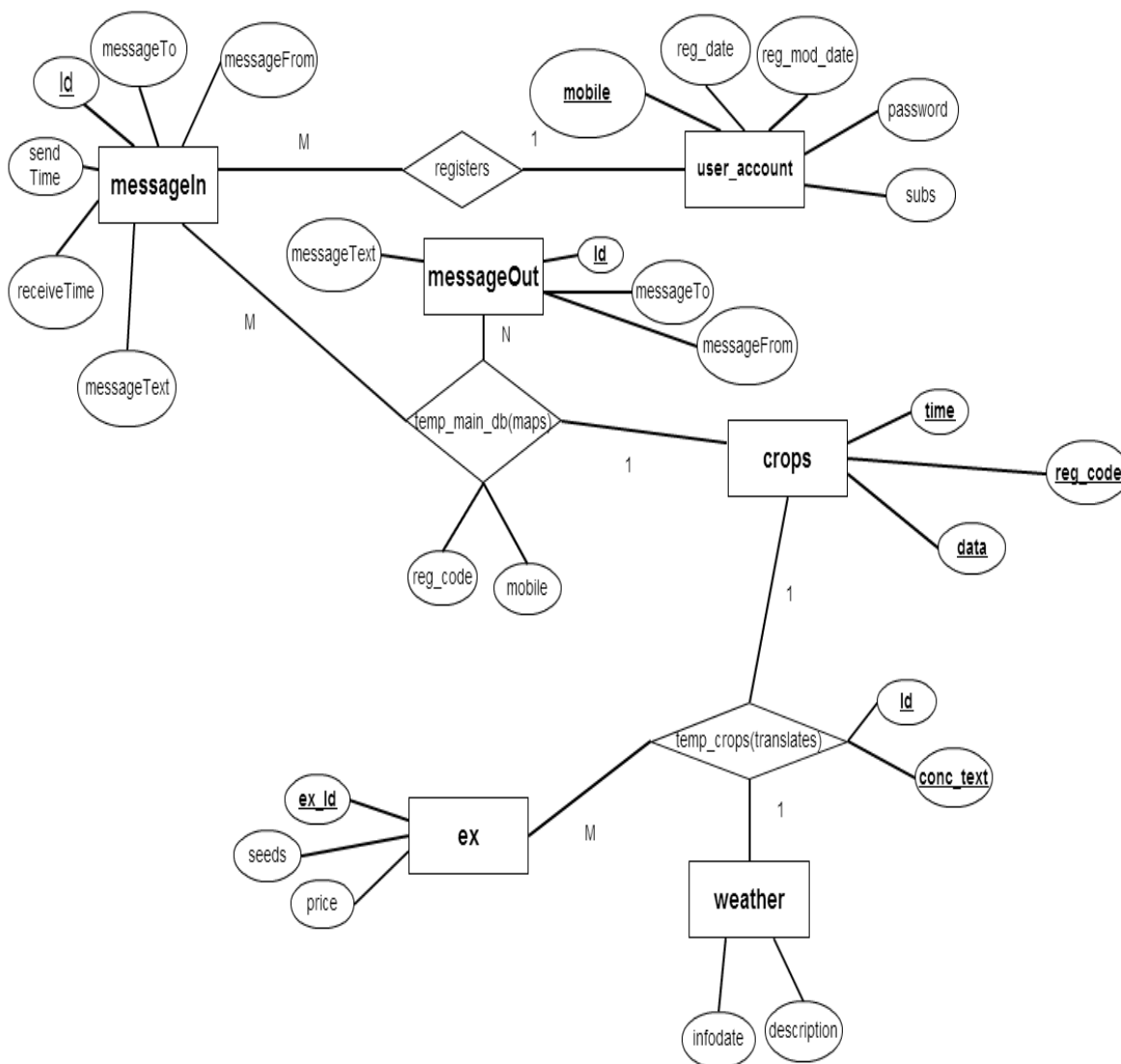


The website has separate user and admin accounts. The interaction of both the profiles in relation to the various features has been depicted in the use case diagram above.

4. Data Design

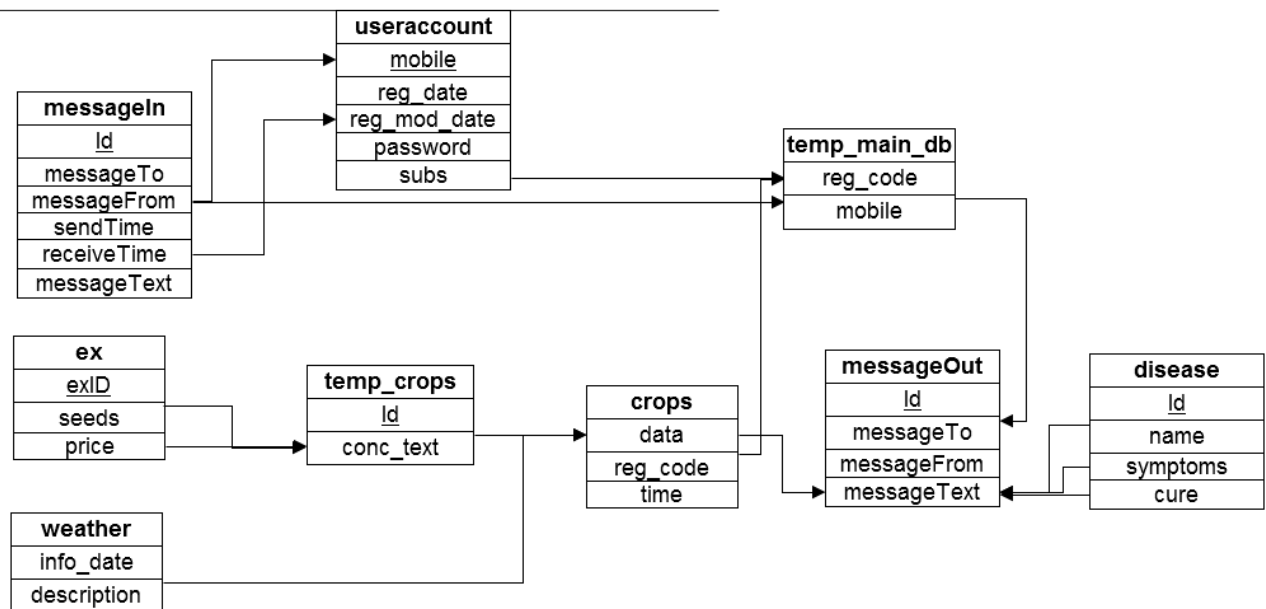
This section describes the design of the SQL database that will be used to store information regarding the service, namely, the users registered (along with their passwords and subscriptions) and the information to be sent through SMS.

Following is the ER Diagram of the database which depicts the relationship of the tables:



The following relational schema depicts the tables and the attributes each one has.

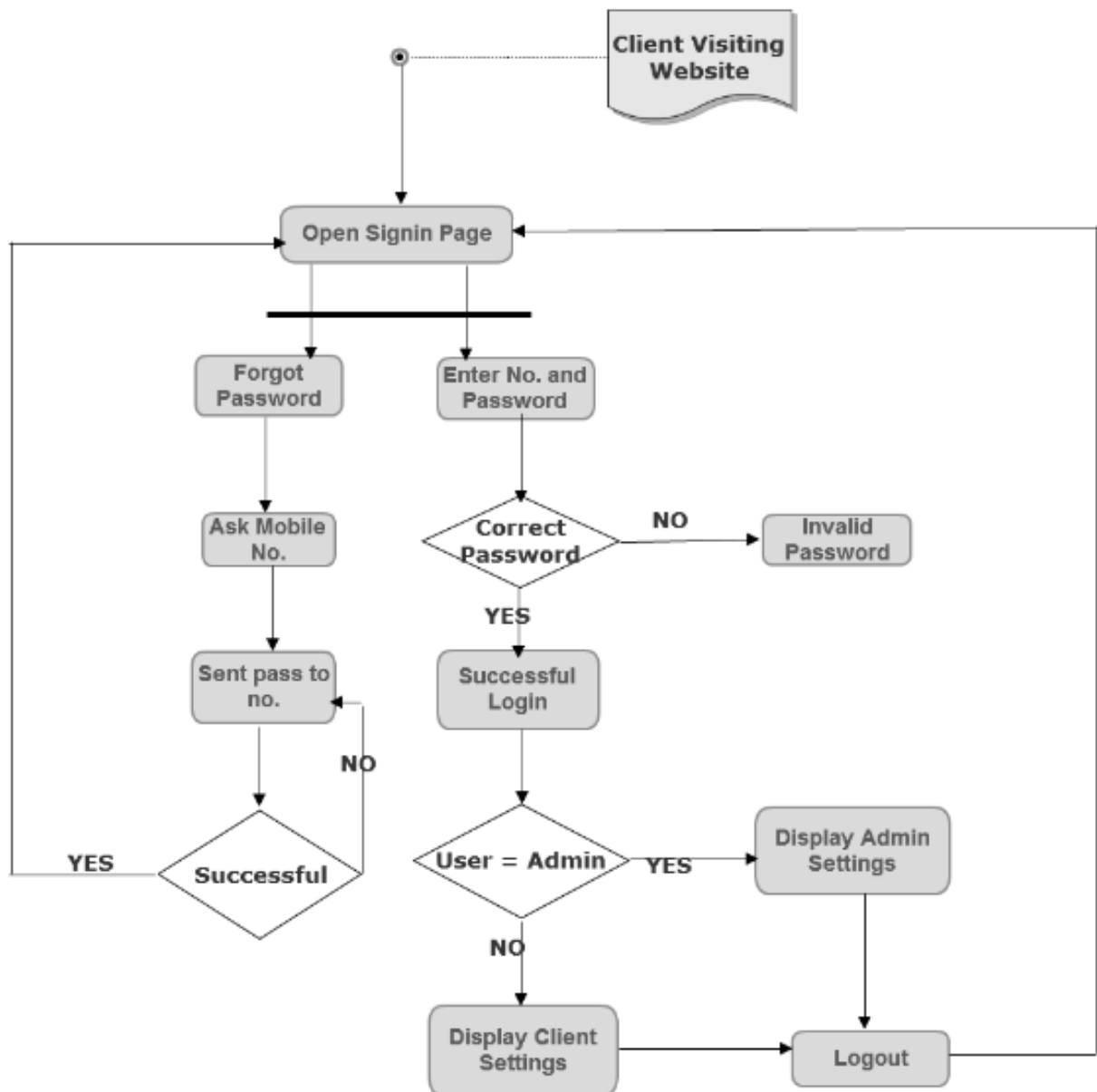
Relational Schema



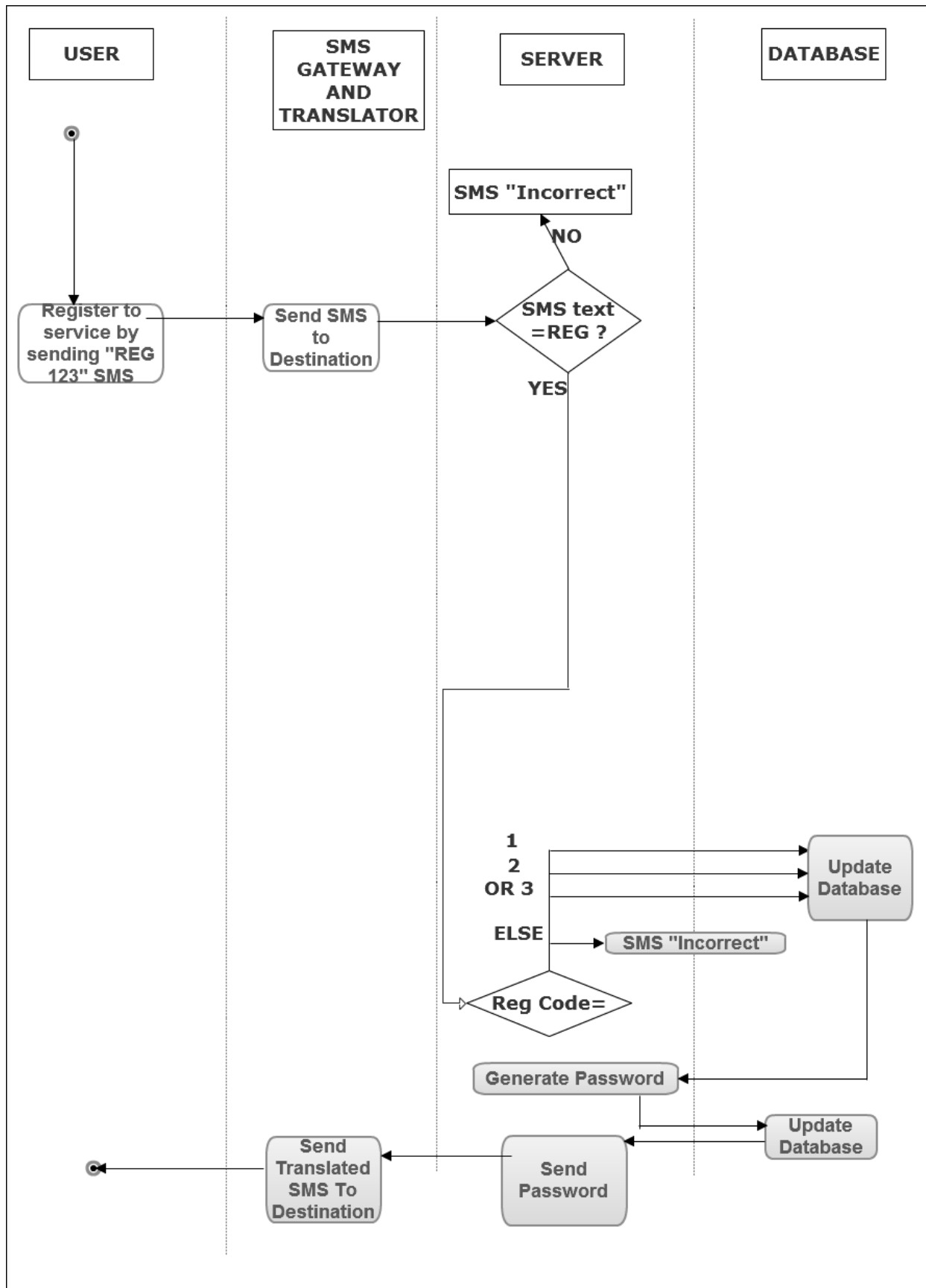
5. Detailed Design

Activity Diagrams are used to graphically represent the workflow in detail depicting the activities in a stepwise and sequential manner.

- Login



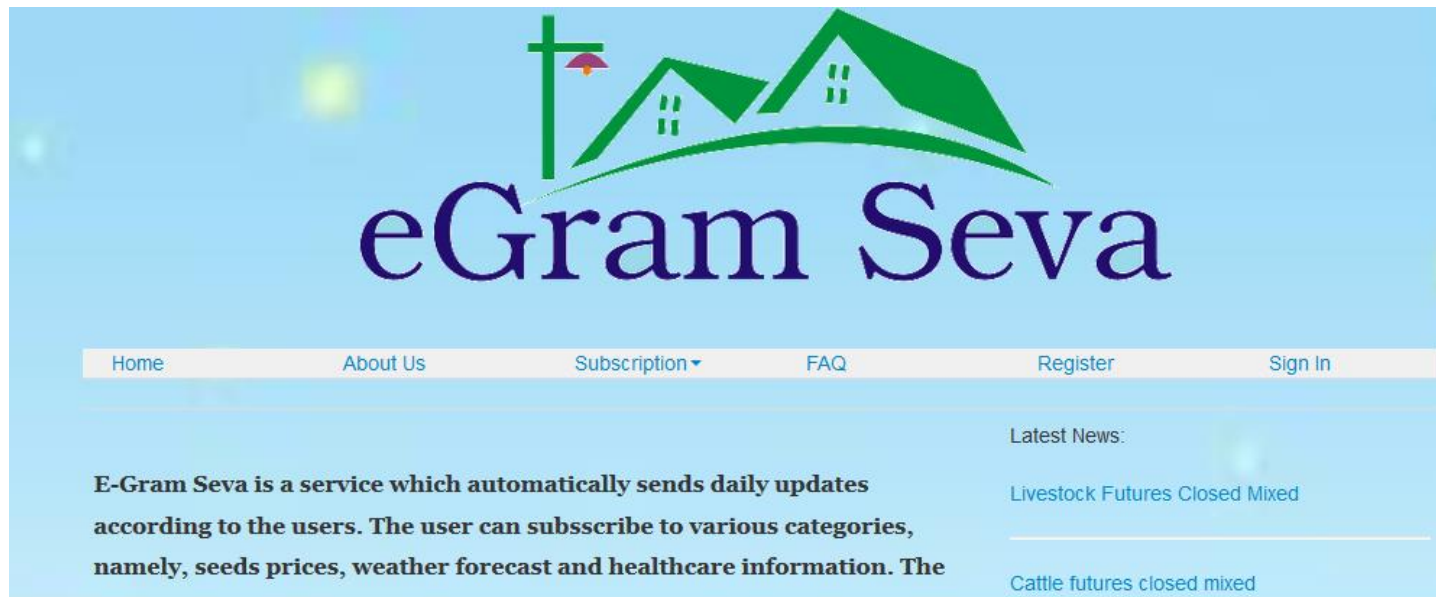
- Registration



6. User Interface

This section shows the website interface and the web pages provided for facilitating the users. The SMS service does not have a distinct interface and is in accordance with the respective handsets of the users.

- Homepage



- About Us Page



- FAQs Page



Register for Mobile updates

Phone NO.

+91

Only Enter 10 digit mobile no.

Enter Password

Password should be minimum 5 characters.

Confirm Password.

Subscription

☐ Crop-Prices

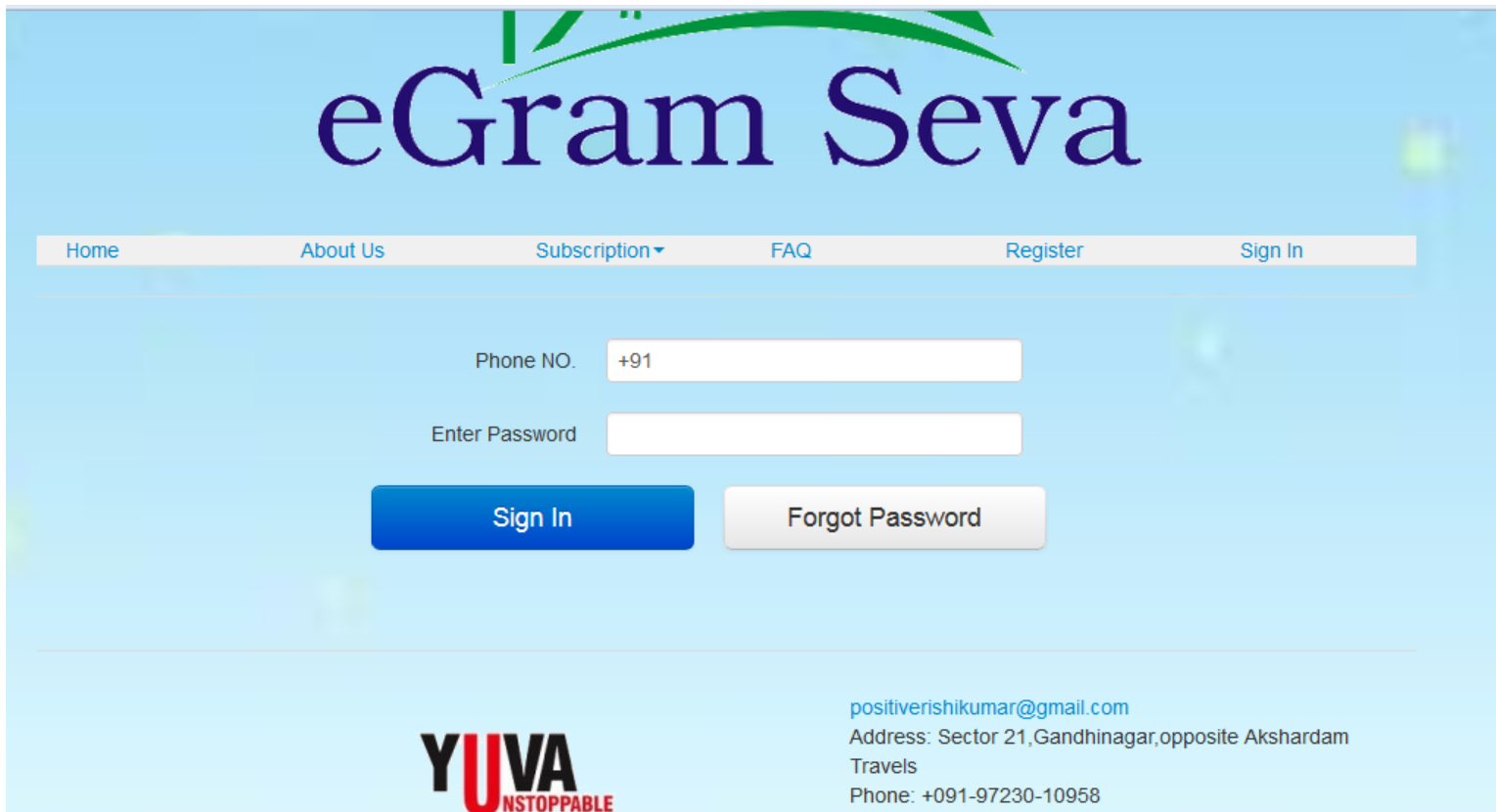
☐ Weather Bulletin

☐ Healthcare News

Register

Reset

- Login Page



The image shows a login page for 'eGram Seva'. The header features the title 'eGram Seva' in a large, dark blue serif font, with a green leaf-like graphic above it. Below the title is a navigation bar with links: 'Home', 'About Us', 'Subscription' (with a dropdown arrow), 'FAQ', 'Register', and 'Sign In'. The main content area contains a login form with two input fields: 'Phone NO.' with a pre-filled value of '+91' and 'Enter Password'. Below these fields are two buttons: a blue 'Sign In' button and a light grey 'Forgot Password' button. The footer section includes the 'YUVA UNSTOPPABLE' logo on the left and contact information on the right, including an email address, an address, and a phone number.

eGram Seva

Home About Us Subscription ▼ FAQ Register Sign In

Phone NO. +91

Enter Password

Sign In Forgot Password

YUVA
UNSTOPPABLE

positiverishikumar@gmail.com
Address: Sector 21, Gandhinagar, opposite Akshardam Travels
Phone: +091-97230-10958

- Change Password Page



The image shows a web page titled "eGram Seva" with a light blue background. At the top, there is a navigation bar with links: Home, About Us, Subscription (with a dropdown arrow), FAQ, Sign Out, and a welcome message "Welcome, +91735917". Below the navigation bar, the page title "eGram Seva" is displayed in a large, dark blue serif font. The main content area is titled "Change Password" in a bold, black sans-serif font. It contains three input fields: "Enter Old Password.", "New Password.", and "Confirm New password.". Below the "New Password." field, there is a note: "Password should be minimum 5 characters or digits.". At the bottom of the form, there are two buttons: a blue "Submit" button and a grey "Reset" button.

eGram Seva

Home About Us Subscription ▼ FAQ Sign Out Welcome, +91735917

Change Password

Enter Old Password.

New Password.

Password should be minimum 5 characters or digits.

Confirm New password.

- Prices of Crops Page

[Home](#)
[About Us](#)
[Subscription ▼](#)
[FAQ](#)
[Register](#)
Welcome, +917359176480

Commodity

Subscribe to this option to receive regular updates regarding the information of various crops available in the local markets near you. Following is the list of crops whose updates you will receive :

- 1)Okra
- 2)Jaggery
- 3)Cabbage
- 4)Eggplant
- 5)Peppermint
- 6)Bottle Gourd
- 7)Green Ginger
- 8)Green Pepper

[Subscribe](#)

Latest Crop Prices	
Crop	Price(Rs/Quintal)
Green pepper	1700
Eggplant	1200
Gourd	1200
Tomato	600
Cucumber	1200
Cabbage	500
French bins	6500
Toria	3000
Green ginger	6500
Lime	4500

- Weather Information Page


[Home](#)
[About Us](#)
[Subscription ▼](#)
[FAQ](#)
[Register](#)
Welcome, +917359176480

Weather report

Subscribe to this option to receive regular weather updates. The different updates you will receive are as follow :

- 1)Temperature
- 2)Humidity
- 3)Sky Clearance
- 4)Wind Speed
- 5)Wind Direction

[Subscribe](#)



Latest Weather Forecast

- Conditions for Gandhinagar, IN at 11:40 am IST

Home	About Us	Subscription ▼	FAQ	Register	Welcome, +917359176480
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Healthcare

Subscribe to this option to receive updates regarding the listed diseases. The updates will include symptoms and remedies of the disease requested by you. Following is the list of diseases included in the website database :

- 1)Malaria
- 2)Dengue
- 3)Tuberculosis
- 4)Jaundice
- 5)Cholera
- 6)Measles

[Subscribe](#)

Latest Healthcare Bulletins

High mercury exposure tied to increased diabetes risk

Hypertension kills nearly 1.5 million every year in SE Asia: WHO

Dengue cases may be 4 times more common than known

Low melatonin levels tied to diabetes risk

Home	About Us	Subscription ▼	FAQ	Sign Out	Welcome, +917359176480
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E-Gram Seva is a service which automatically sends daily updates according to the users. The user can subscribe to various categories, namely, seeds prices, weather forecast and healthcare information. The daily updates will be sent as Short Message Service (SMS) to their mobile phones. The villagers can subscribe to one or more type of updates from above mentioned set of categories. These messages are translated for the convenience of the users.

Edit subscriptions Change password	<p>Latest News:</p> <p>Livestock Futures Closed Mixed</p> <hr/> <p>Cattle futures closed mixed</p> <hr/>
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- User Account (edit subscriptions)



The image shows a web application interface for 'eGram Seva'. At the top, there is a logo featuring a green house with a red roof and a green umbrella, with the text 'eGram Seva' in a large, dark blue serif font. Below the logo is a navigation bar with links: 'Home', 'About Us', 'Subscription' (with a dropdown arrow), 'FAQ', 'Sign Out', and a welcome message 'Welcome, +917359176480'. The main content area has a heading 'Change Subscriptions' and a note: 'Note: Not checking any box will de-register you from the service and delete your website account.' Below this, there is a section titled 'Subscription' with three checkboxes: 'Crop-Prices', 'Weather Bulletin', and 'Healthcare News'. At the bottom, there are two buttons: 'Change' (blue) and 'Reset' (grey).

eGram Seva

[Home](#) [About Us](#) [Subscription ▼](#) [FAQ](#) [Sign Out](#) Welcome, +917359176480

Change Subscriptions

Note: Not checking any box will de-register you from the service and delete your website account.

Subscription ☐ Crop-Prices ☐ Weather Bulletin ☐ Healthcare News

[Change](#) [Reset](#)

- Admin Account (View Users Registered)

