A
Project Report
On

"FARM MANAGEMENT SYSTEM"

By
Ronak Chandrakant Ubale.
Pratiksha Sanjay Ushire.

Under the guidance of
Prof. Varsha Shirore.

Department of Computer Science

K. S. K. W. Arts, Science and Commerce College, Cidco, Nashik

Year 2022-23

K.S.K.W. Arts, Commerce & Science College, Cidco, Nashik - 8.

Department of Computer Science

ACADEMIC YEAR 2022-2023.

CERTIFICATE

This is to certify that the Project Title "***Farm Management System***" has been successfully completed by: ***Pratiksha Sanjay Ushire and Ronak Chandrakant Ubale.*** in partial fulfillment of the requirements of First year M.Sc. Computer Science to Savitribai Phule University for the academic year 2022-2023.

Project Guide:

Prof. Varsha Shirore.

Head of the Department:

Internal Examiner:

External Examiner:

ACKNOWLEDGEMENT

There are many people who helped us directly or indirectly in the successful completion of our project. We would like to take this opportunity to thank one and all.

I am very thankful to out project guide Prof. Varsha Shirore. ma'am who has been inspiring guide and committed caretaker for her unflinching devotion. The encouragement and support by her, especially in carrying out this project motivated me to complete this project.

I would like to thank all out friends for their help and constructive criticism during my project period. Finally, I am very much indebted to my parent for their moral support and encouragement to achieve goals. I am very thankful to my parent who have shown me this would and for every support they gave me.

I would like to express deep scene of gratitude to or staff members of Dept. of computer science for their co-operation, which has gives in the congruency to build up this project.

ABSTRACT

The agricultural information system provides its users and researches to get online information about, the crop, statistical details and new tendencies. The trends of the crops act so that these will be pretty important to the users who access these via the Internet. The main features of the information system include information retrieval facilities for users from anywhere in the form of obtaining statistical information about land availability, suitable soil concentration for the corresponding crops and etc. In addition, this provides individual information about Intercrops related to main crops. The system allows the retrieving facilities but also the updating facilities to the authorized persons in the corresponding institutes.

CONTENTS

Introduction of Soil and Crops:

A farm management system is a comprehensive software or tool that assists farmers in effectively managing various aspects of their agricultural operations. This software is supported to eliminate and, in some cases, reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all it proves it is user-friendly. Farm Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Crops, Farm, Insecticides, Equipments, Pesticides. Every Farm Management System has different Farm needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources

1. Soil Management:

Soil is the foundation of successful farming, and its quality greatly influences crop productivity. A farm management system provides tools to monitor and manage soil health. It tracks essential parameters such as soil moisture, pH levels, nutrient content, organic matter, and compaction. By collecting and analyzing this data, farmers can make informed decisions about irrigation schedules, fertilizer application, and soil conservation practices.

2. Crop Management:

Effective crop management is crucial for maximizing yields and ensuring healthy plant growth. A farm management system enables farmers to track and manage various aspects of crop cultivation. It includes functionalities like crop planning, planting schedules, seed selection, and pest and disease management. By utilizing historical data, weather forecasts, and crop models,

the system can provide optimal planting times, crop rotation strategies, and pest control measures.

objectives

The main objective of the Project on Farm Management System is to manage the details of Farm, Crops, Soil. It manages all the information about Farm, Cost Range, Pesticides, Farm. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Farm, Crops, Cost Range, Crops. It tracks all the details about the Crops, Soil.

Functionalities provided by Farm Management System are as follows:

- Provides the searching facilities based on various factors. Such as Farm, Crops, Soil, Alarm.
- Manage the information of Crops
- Shows the information and description of the Farm, Crops To increase efficiency of managing the Farm, Crops
- Manage the information of Farm
- Editing, adding and updating of Records is improved which results in proper resource management of Farm data.
- Manage the Alarm.

Project Scope

It may help collecting perfect management in details. In a very short time, the collection will be obvious simple and sensible. It also helps in current all works relative to Farm Management System. The project scope of a farm management system focused on crop and soil management encompasses the specific functionalities, features, and deliverables that will be included in the system.

- In computer system the person has to fill the various forms & number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the effort spent on their respective working areas
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- Be easy to understand by the user and operator
- Be easy to operate
- Have a good user interface
- Be expandable
- Delivered on schedule within the budget.
- Crop Planning and Management:
- Crop selection and recommendation based on soil suitability, market demand, and historical data.
- Tools for creating planting schedules, including optimal planting times and crop rotation plans.
- Integration with seed suppliers and inventory management for efficient seed selection and procurement.

Existing system

- The very concept of farm management has a fascinating appeal to the mankind as there is not a single creed which is not affected by this bread-butter subject. It is the study of farmer as a producer of food and other raw materials, who occupies a strategic position in the economic life of a country.
- Farm management investigations give thrust and direction to farm business improvement by providing useful information to planners, farmers and extension workers. Better understanding of the sequential flow of new technology is provided by farm management research that contributes to more realistic projection potential. Again, basic information by farm management studies on specific farm projects such as land reclamation, irrigation and drainage, serves as an aid to formulate national policies.
- In the context of socio-economic changes that are likely to occur as the wheels of economy of developing countries move to the closing years of the present century, there is likelihood of the emergence of problems of population explosion and scarcity of resources. But farm management has an inherent capacity of developing strategic approaches for making the best use of scarce-resources. Hence, there is bound to be far greater awareness and understanding of the role of farm management in the nations' economy.

Proposed system

Looking at the farm structure as a whole, it is apparent that the objectives of farm management are to:

-study the existing resources, land, labour, capital, management and the production pattern on the farm;

-perform the strategic task of finding out the deviation of the resources from their optimum utilization;

-explain the means and procedure of moving from the existing combination of resources to their optimum use for profit maximization.

-outline conditions that would simultaneously obtain its objectives of profit maximization and family satisfaction through optimum use of resources and judicious income distribution; and

-work out costs and returns on individual enterprises and on the farm as a whole

-In this system we provided the alarm and the information about soil and crops. Here we provided information about the for which crop we can use the which soil.

Feasibility Study

After doing the project Farm Management System, study and analyzing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible given unlimited resources and infinite time Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economical Feasibility

This is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor.
All hardware and software cost has to be borne by the organization.
Overall, we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

B. Technical Feasibility

This included the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system as described in the System. Requirement Specification (SRS) and checked if everything was possible using different type of frontend and backend platforms.

C. Operational Feasibility

No doubt the proposed system is fully GUI based that is very user friendly and all inputs to be taken all self-explanatory even to a layman. Besides, a proper training has been conducted to let know the essence of the system to the users so that they feel comfortable with new system. As far our study is concerned the clients are comfortable and happy as the system has cut down their loads and doing.

METHODOLOGY

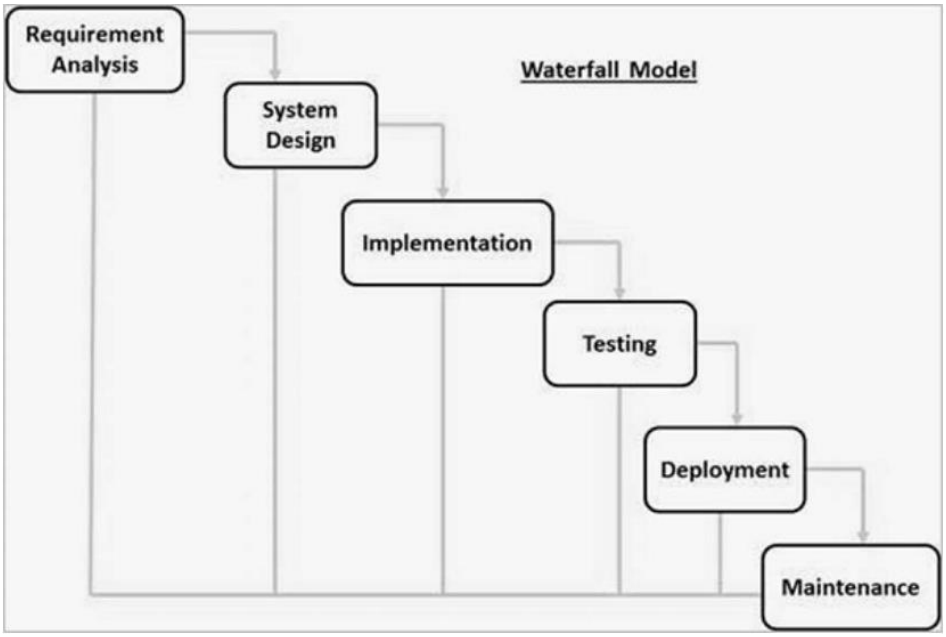
The waterfall model was used. The waterfall model is a linear sequential design approach for software development, in which process flows in one direction downwards through the phases of conception, initiation, analysis, design, construction, testing, deployment and maintenance. It will be used because it allows for departmentalization and managerial control.

- **WATERFALL MODEL:**

The Waterfall Model was first process model to be introduced. It is very simple to understand and use.

The sequential phases in waterfall model are:

1. Requirement Gathering and analysis.
2. System Design.
3. Implementation Integration and Testing.
4. Deployment of System.
5. Maintenance.



Requirement specification

The requirement specification for a farm management system outlines the specific features, functionalities, and performance expectations of the system. Here are key areas to consider in the requirement specification for a farm management system.

User management:

User registration and authentication for farmers, agronomists, and administrators.

User roles and permissions to define access levels and privileges.

User-friendly interfaces for easy navigation and interaction.

Functional Requirements:

This is a necessary task, action or activity that was accomplished. The proposed system is able to:

i) Allow administrator to add user details

ii) Allow the admin to add crop details.

Hardware Requirements:

1. Processor: core i5 and above.
2. Hard Disk :500 Gb.
3. Memory :16Gb.

Software Requirements:

1. Windows 10 and above.
2. Android Studio
3. SQLite

DIAGRAMS

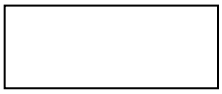
E-R(Entity-Relationship) Diagram:-

E-R diagram enable to fully specify the data objects that are input & output from a system. The attributes that define the properties of these objects & their relationships.

There are three basic notations that are used in E-R diagram :-

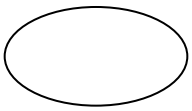
1. Entity :

   It is a object which you want to store information.



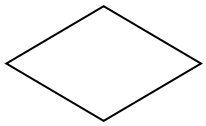
2. Attributes :

   It is the unique, distinguishing characteristics of entity.

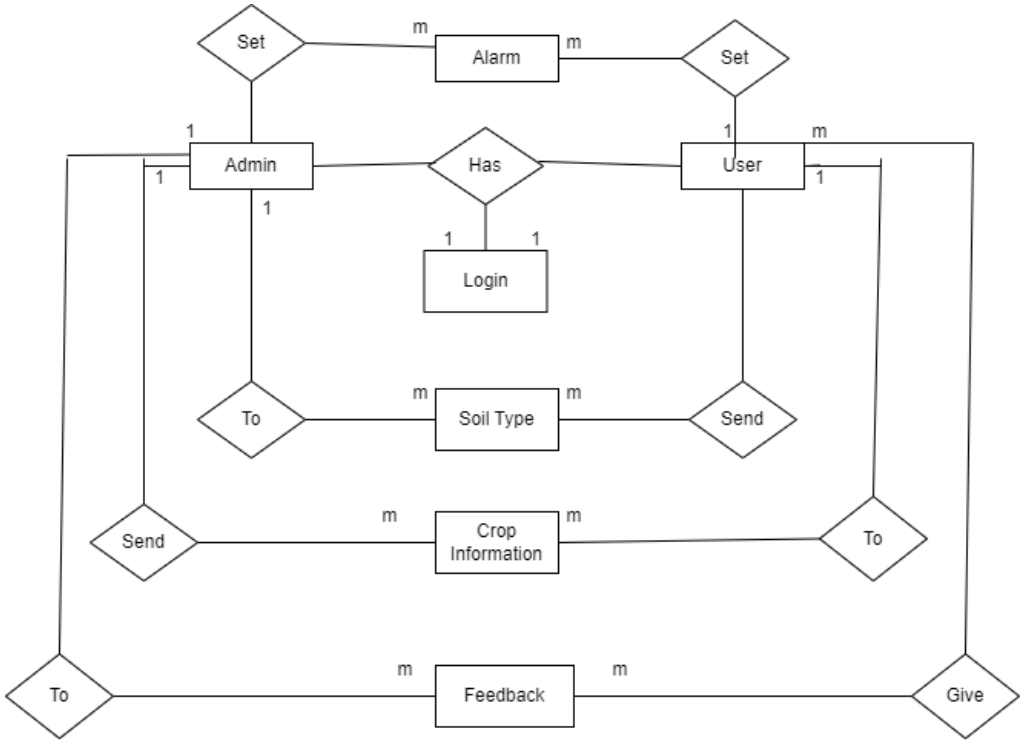


3. Relationships :

   How two entities share information in the database structure.



ER diagram



1-1 : One to One relationship.

1-M: One to Many relationship.

M-1: Many to One relationship.

M-M: Many to Many relationship.

UML Diagrams:-

UML stands for Unified Modelling Language. It is a general-purpose modelling language which is designed to provide a standard way to visualize the design of a system.

Use Case Diagram :-

A Use Case diagram use to interact with the system to solve a problem. Use Case diagram commonly contains: Subject, Use cases, Actors, Dependency, Association, Generalization and Relationship between them.

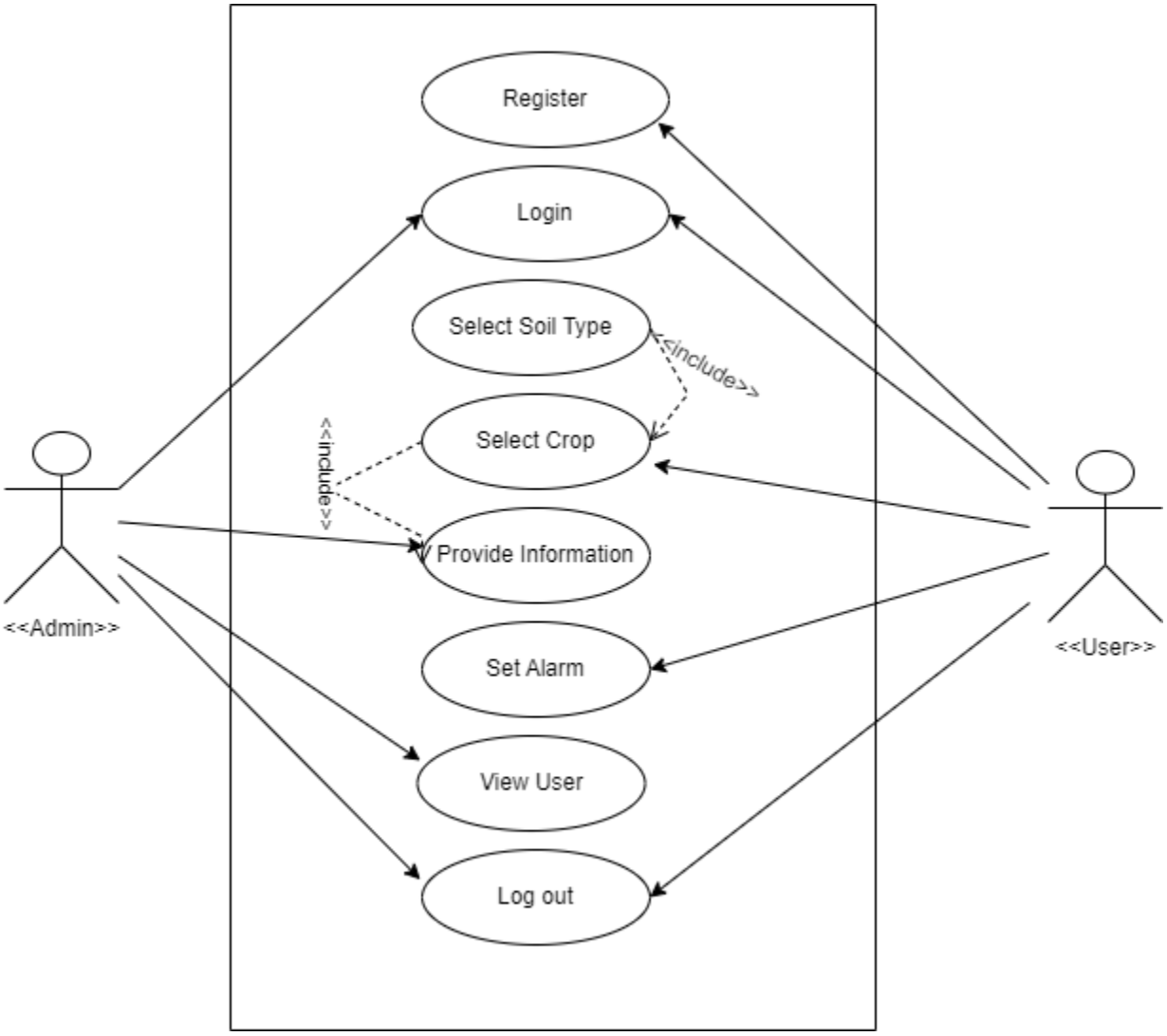
{

Include:- Compulsory Field.

Extend :- Optional Field.

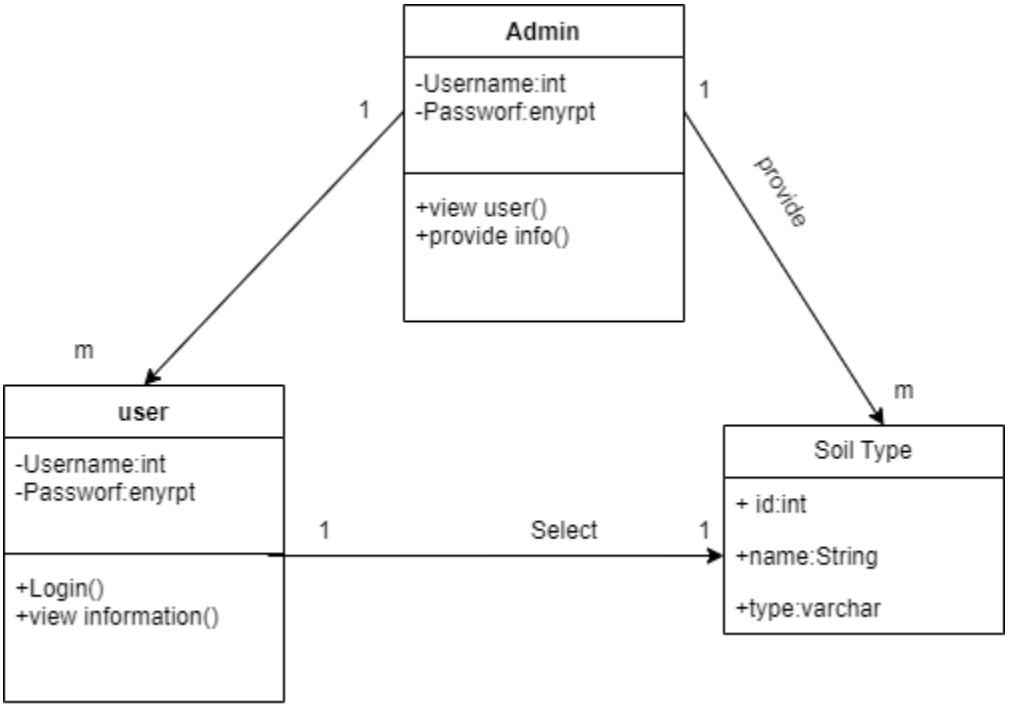
}

Usecase diagram



4.2.2 Class Diagram:-

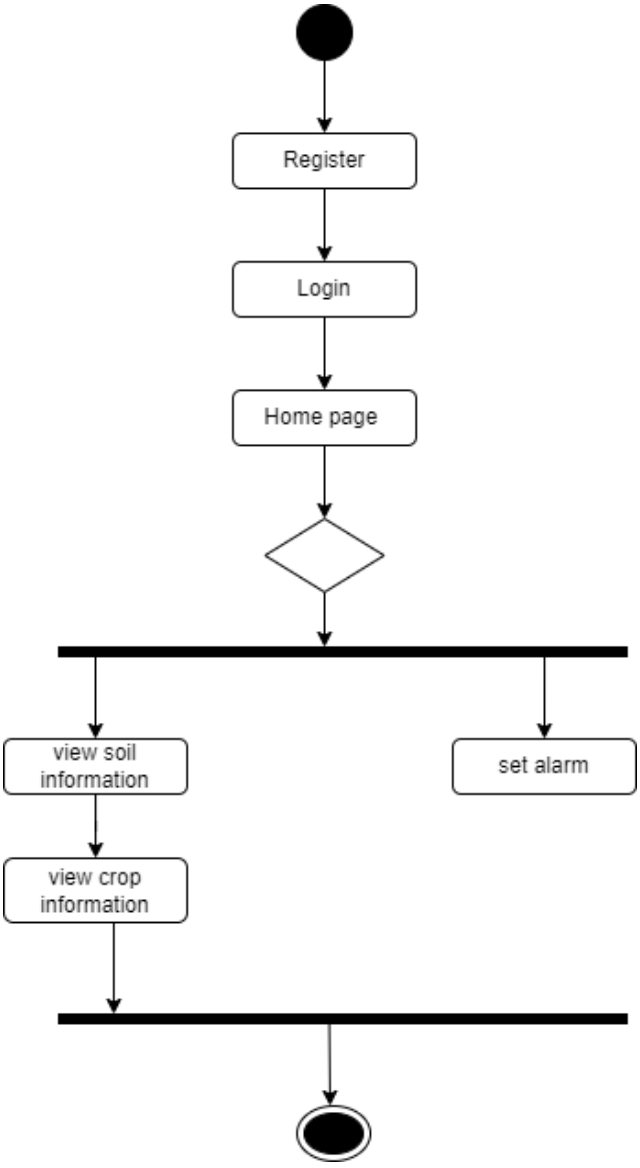
It is a type of static structure diagram. That describes the structure of system by showing the system's classes, their attributes, operations and the relationship among objects.



4.2.2 Activity Diagram :-

Activity diagram emphasize the flow of control from activity to activity. An activity is an ongoing non-atomic execution within a static machine.

Activity diagram represents a activity model which contains simple & composite states, branches, fork & joins.

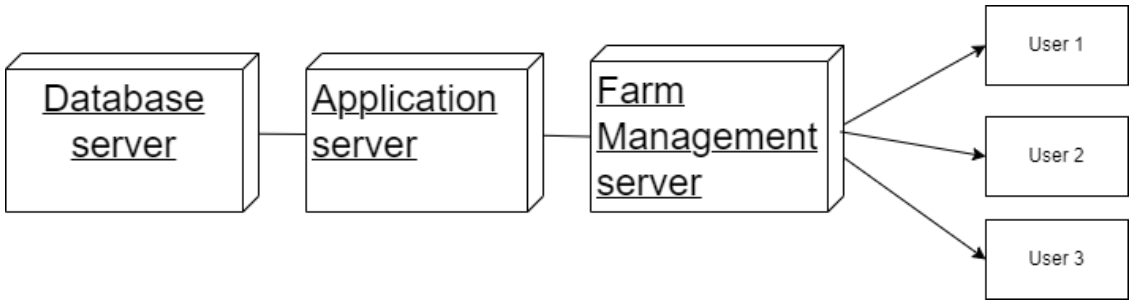


4.3.4 Deployment Diagram :-

Deployment diagrams are important for visualizing, specifying, and documenting embedded, client/server, and distributed systems, but also for managing executable systems through forward and reverse engineering.

A deployment diagram is a diagram that shows the configuration of run time processing nodes and the artifacts that live on them.

Graphically, a deployment diagram is a collection of vertices and arcs.



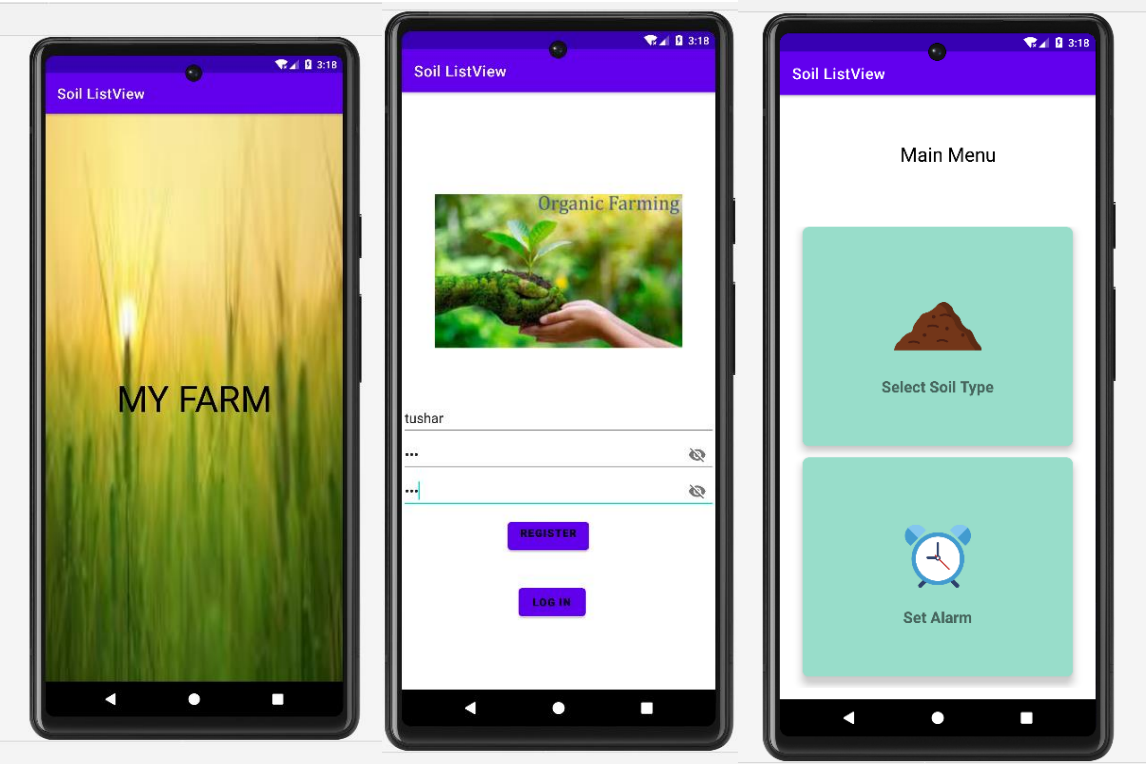
Data Dictionary

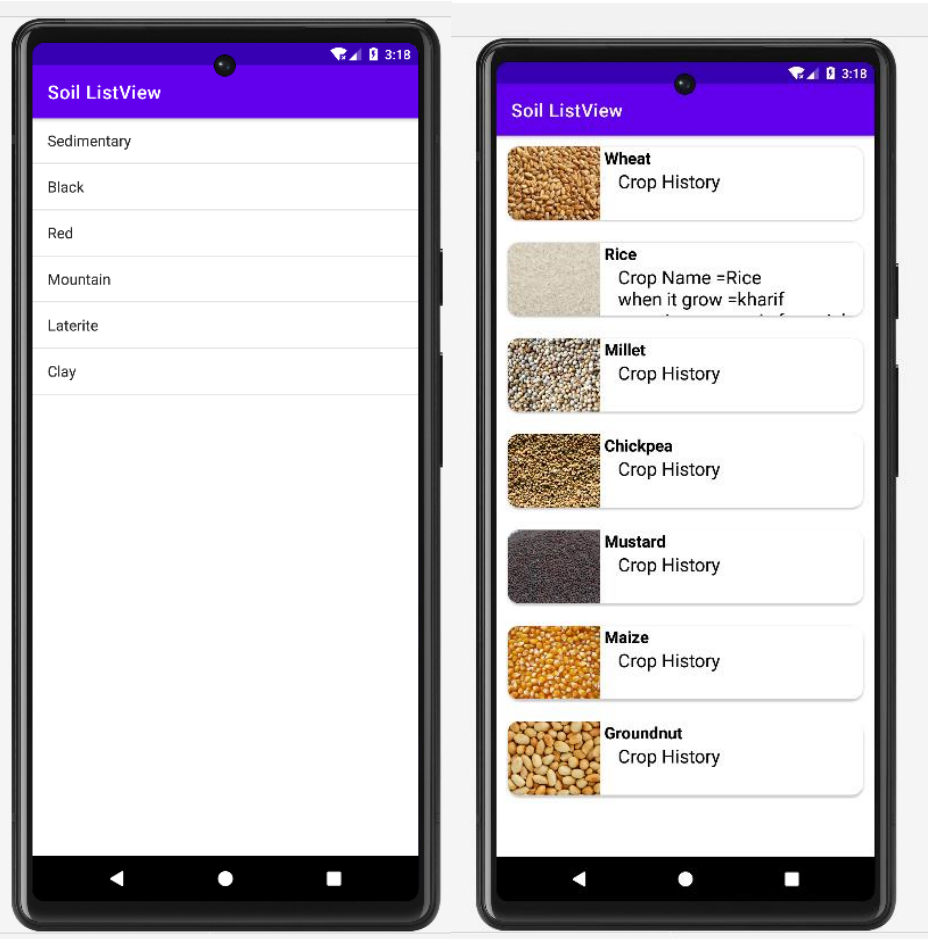
1.Register Table

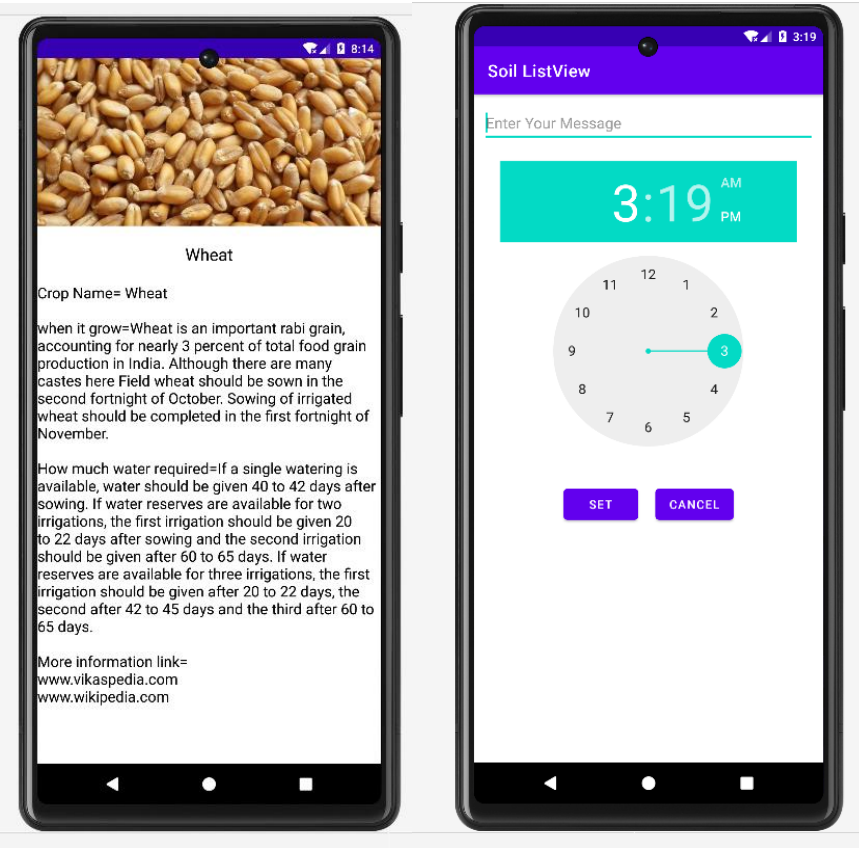
Field Name	Data Type	Description
Username	Varchar	Not Null
Email	Varchar	Primary key
Password	Varchar	Not Null
Confirm Password	Varchar	Not Null

2.Login Table

Field Name	Data Type	Description
Email	Varchar	Primary key
Password	Varchar	Not Null


Soil ListView
MY FARM
Soil ListView
Organic Farming
tushar
REGISTER
LOG IN
Soil ListView
Main Menu
Select Soil Type
Set Alarm


Soil ListView
Sedimentary
Black
Red
Mountain
Laterite
Clay
Soil ListView
Wheat
Crop History
Rice
Crop Name =Rice
when it grow =kharif
Millet
Crop History
Chickpea
Crop History
Mustard
Crop History
Maize
Crop History
Groundnut
Crop History


8:14
Wheat
Crop Name= Wheat
when it grow=Wheat is an important rabi grain, accounting for nearly 3 percent of total food grain production in India. Although there are many castes here Field wheat should be sown in the second fortnight of October. Sowing of irrigated wheat should be completed in the first fortnight of November.
How much water required=If a single watering is available, water should be given 40 to 42 days after sowing. If water reserves are available for two irrigations, the first irrigation should be given 20 to 22 days after sowing and the second irrigation should be given after 60 to 65 days. If water reserves are available for three irrigations, the first irrigation should be given after 20 to 22 days, the second after 42 to 45 days and the third after 60 to 65 days.
More information link=
www.vikaspedia.com
www.wikipedia.com
3:19
Soil ListView
Enter Your Message
3:19
AM
PM
12
1
2
3
4
5
6
7
8
9
10
11
SET
CANCEL

Conclusion

In conclusion, a farm management system is a valuable tool that offers a wide range of benefits to farmers and agricultural businesses. By leveraging technology, data analysis, and streamlined processes, a farm management system enhances efficiency, productivity, and sustainability in farming operations.

The system enables farmers to make informed decisions by providing access to real-time and historical data on crop growth, soil conditions, weather patterns, and other relevant factors. This data-driven approach allows for precision agriculture practices, optimizing resource allocation, and reducing waste.

Furthermore, a farm management system helps farmers manage soil health effectively by monitoring soil parameters, providing tailored nutrient management plans, and promoting sustainable soil management practices. It also assists in risk mitigation by identifying potential threats, enabling timely interventions, and minimizing crop losses.

The system also aids in regulatory compliance, facilitating adherence to environmental regulations, nutrient management guidelines, and food safety standards. It generates necessary reports and documentation, reducing administrative burdens and ensuring compliance.

Bibliography:

- www.youtube.come
- Wikipedia.org
- www.w3schools.com