

SOIL PREDICTION AND PLANT RECOMMENDATION

A Project Report

Submitted for the partial fulfillment for the award of degree of
BACHELOR OF COMPUTER APPLICATIONS

By

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APRIL – 2024

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This is to certify that the report entitled

Being submitted to the Thiruvalluvar University, Vellore

Soil Prediction And Plant Recommendation

By

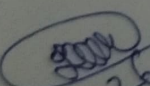
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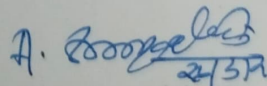
For the partial fulfillment for the award of degree of

BACHELOR OF COMPUTER APPLICATIONS

Is a bona-fide record of work carried out by him under my guidance and Supervision.


26/02/24
Signature of the Guide

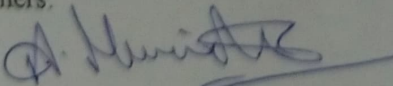
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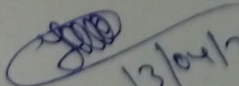

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Submitted for the viva-voce examination held on 13 / 04 / 2024

Examiners:

1. 

2. 
13/04/24

1.1 Abstract

The Soil Prediction System and Plant Recommendations is an IOT-based project designed to improve agricultural productivity by accurately assessing soil quality and recommending suitable plants or crops to farmers. The system utilizes sensors to measure key parameters such as pH value, moisture content, and temperature level in the soil. By analysing these data points, the system can provide real-time insights into the health of the soil and suggest appropriate plants or crops that are well-suited to the specific conditions. This helps farmers make informed decisions about what to plant, leading to increased yields and reduced costs associated with failed crops or ineffective soil management practices. The benefits of this project are multifaceted. It not only enhances agricultural productivity but also reduces the workload and costs for farmers by automating the process of soil analysis and plant selection. Additionally, by delivering results immediately, it enables farmers to take timely actions to optimize their farming practices and maximize their yields. Overall, the Soil Prediction System with Intelligent Plant Recommendations represents a promising solution for sustainable and efficient agriculture.

1.2 Existing System

- **Lab Visits** Traditionally, farmers visit labs to analyse soil samples and obtain crucial information about soil qualities. This process involves physically collecting samples from their fields and sending them to specialized laboratories for detailed analysis.
- **Sensor Measurements**, Soil qualities are measured like pH, moisture, and temperature using sensors, and only the values are displayed on a monitor.

1.3 Problem Statement

- **Costly Soil Testing**, Soil testing is a high costs due to laboratory fees and a financial burden on farmers. Additionally, the process of collecting samples and sending them to labs adds to farmers' workload.
- **Recommendations**, There is no recommendation was built for plants using the soil qualities.

1.4 Proposed System

- **Plant Recommendation** The system offers plant recommendations based on soil parameters such as pH value, moisture content, and temperature using the KNN(K Nearest Neighbour) algorithm .
- It has user friendly interface having quick authenticated access and it can also access without the IOT Device for user's needs.

1.5 Software and hardware Requirements

Software Requirements

- **Eclipse IDE** (Integrated Development Environment) is a widely used open-source IDE for Java development, although it supports various other programming languages as well.
- **Arduino IDE** the Arduino Integrated Development Environment (IDE) is an open-source software application that facilitates the development of projects using the Arduino platform.
- **Node-Red** It is Node Js library are called flow diagram program and it also used transmitting the IOT Device value to the database.

Hardware Requirements

- | | |
|---------------------|-------------------------|
| • System | Intel Core I5 Processor |
| • CPU | Intel I5 |
| • Clock Speed | 2.4 MHz |
| • Main Memory (RAM) | 8GB DDR 4 |
| • Secondary Memory | 1 TB SSD |
| • Operating System | MS-Windows 10 |
| • Environment | Windows 7,8,9,10 |

Sensor

- Arduino UNO R3-It is used for communicate with the sensor.
- DHT11 Humidity & Temperature Sensor-it is used for getting the temperature value.
- PH Sensor-it is used for getting the soil ph value.
- Soil Moisture-It is used for getting the moisture level in soil.
- Jumper Wires Male to Female-used to connect each other devices.

1.6 List of Modules

This the Soil Prediction and Plants Recommendations contains five main modules they are,

- Soil Predict
- On-Value Predict
- History
- Feedback
- Administration
 - Overall View
 - User Details
 - User Feedback
 - Plants Details

Soil Predict

- Get the soil quality value using IOT Device and Recommend the plant to the user.

On-Value Predict

- To predict the soil value using user input Moisture, Ph and Temperature values and Recommend the plant.

History

- It is used to display provisory Recommended Plants given to the user.

Feedback

- User can send message of an issues or service rating to the admin.

Administration

- This module is used for admin to view the overall view, admin can add, update and delete the user.
- Admin can also view all the user sent feedback and delete it.
- Admin can also view all plants present in the dataset and add new plants to the dataset.

1.7 Summary

The chapter describes Project Proposal Document (Abstract, Existing System, Problem Statement, Proposed System, Software and hardware Requirements, List of Modules) and in next chapter describe Feasibility study.

FEASIBILITY STUDY

2.1 Introduction

An important outcome of the preliminary investigation is the confirmation that the system requested is feasible. The soil prediction and plants recommendations is web application used for soil predict and plant recommendation. The existing system process is more workload and reduce the cost of farmers.

2.2 Feasibility Analysis

An important outcome of the preliminary investigation is the affirmation that system requested is feasible. The three types of feasibility studies which helped me to identity the solutions are stated below

- Technical Feasibility
- Economical Feasibility
- Operational Feasibility

Technical Feasibility

In order to identity whether it is technical feasible, technology platform, supporting software and tools ad work area have to be given the first priority. Further, this system requires the duration of three months to complete.

The objectives of new tool are to maximum scalability and security of the business application. And the feasibility study resulted in 'yes' for the following question

- Does the necessary technology exist to do what is suggested?
- Does the proposed equipment have the technical capacity to hold the data required to use the new tool?
- Can the system be upgraded if developed?

The result 'yes' to the above questions and the proposed system requires the duration of six months to complete.

Economic Feasibility

The website owners must buy the software and hardware which are required; no initial cost regarding that is incurred.

Operational Feasibility

The system is developed using the front-end that is used that case coding, as it is more a web application rather than giving much concentration on network and their implementations. Backend requires having capability to store Data.

Thus, economically and technically the new system tool is feasible. The operational feasibility is to take into consideration of the user's acceptance of the system. Any new system, especially a monitoring system, can result in users going against it since they may feel that it intruders into their privacy. However, properly specifying the merits of system can help overcome the initial rejection.

2.3 Vision Document

Problem Statement

The problem of	Farmer's didn't Know best crops for their fields.
Affects	Farmer's
The impact of which	In this process, Better growth in crops.
A successful solution would be	Farmer's enhance their productivity.

Problem Positioning Statement

Name	Represent	Roles
User	Farmers	User helped to know about the application they are getting into.
Admin	who manage the website.	Making ensure that everything is fine or any Issues are present.

2.4 Summary

This chapter concludes with the summary and objectives of the project. The next chapter describes the requirements analysis of the project.

SYSTEM REQUIREMENTS SPECIFICATION

3.1 Introduction

This chapter describes the modules that are implemented in the software with UML diagrams and use case designs.

3.2 Modules Description

It is an IOT-based technology, which is used to set the Soil Prediction and Plants Recommendations System.

Modules

This the Soil Prediction and Plants Recommendations contains five main modules they are,

- Soil Predict
- On-value Predict
- History
- Feedback
- Administration
 - Overall View.
 - User Details.
 - User Feedback.
 - Plants Details.

3.3 Module Specification

Soil Predict

- **Purpose**
To predict the soil quality value using IOT Device and Recommend the plant.
- **Responsible person**
Users and Admin.
- **Entry Criteria**
By clicking the soil predict Module.
- **Input**
Moisture, Ph and Temperature values are given by the IOT device.
- **Process**
Get the values by IOT device and Recommend the plants.
- **Output**
Recommend plant will display.

- **Exit Criteria**

You can exit by clicking the logout button.

On-Value Predict

- **Purpose**

To predict the soil value using user input Moisture, Ph and Temperature values like and Recommend the plant.

- **Responsible person**

Users and Admin.

- **Entry Criteria**

By clicking the Value-plant recommendation Module.

- **Input**

Moisture, Ph and Temperature values are given by the user.

- **Process**

Get the values by user and Recommend the plants.

- **Output**

Recommend plant will display.

- **Exit Criteria**

You can exit by clicking the logout button.

History

- **Purpose**

It is used to display provisory Recommended Plants given to the user.

- **Responsible person**

Users and Admin.

- **Entry Criteria**

By clicking the History Module.

- **Input**

Plant name, moisture, temperature and ph from the database.

- **Process**

Get the details from database and display provisory recommended plants.

- **Output**

Display provisory recommended plants.

- **Exit Criteria**

You can exit by clicking the logout button.

Feedback

- **Purpose**
User can send message of an issues or service rating to the admin.
- **Responsible person**
Users and Admin.
- **Entry Criteria**
By clicking the Feedback Module.
- **Input**
Various question answered by the user.
- **Process**
Get the details from the user and store in the user.
- **Output**
Successfully sent message will display.
- **Exit Criteria**
You can exit by clicking the back button.

Administration

Dashboard

- **Purpose**
Admin can view the overall of total users, total plants available in dataset and total feedback received.
- **Responsible person**
Admin.
- **Entry Criteria**
By clicking the Dashboard Module.
- **Input**
Total user, plant and feedback from the database.
- **Process**
Retrieve data's from database.
- **Output**
Display the total users, total plants and total feedback.
- **Exit Criteria**
You can exit by clicking the back button.

User

- **Purpose**
Admin can view all user's details and Admin can add new user, delete user and update user details.
- **Responsible person**
Admin.
- **Entry Criteria**
By clicking the user Module.
- **Input**
User's details from the database.
- **Process**
Retrieve user's details from database, add new user, update the user details and delete the user.
- **Output**
Display the all the users details.
- **Exit Criteria**
You can exit by clicking the back button.

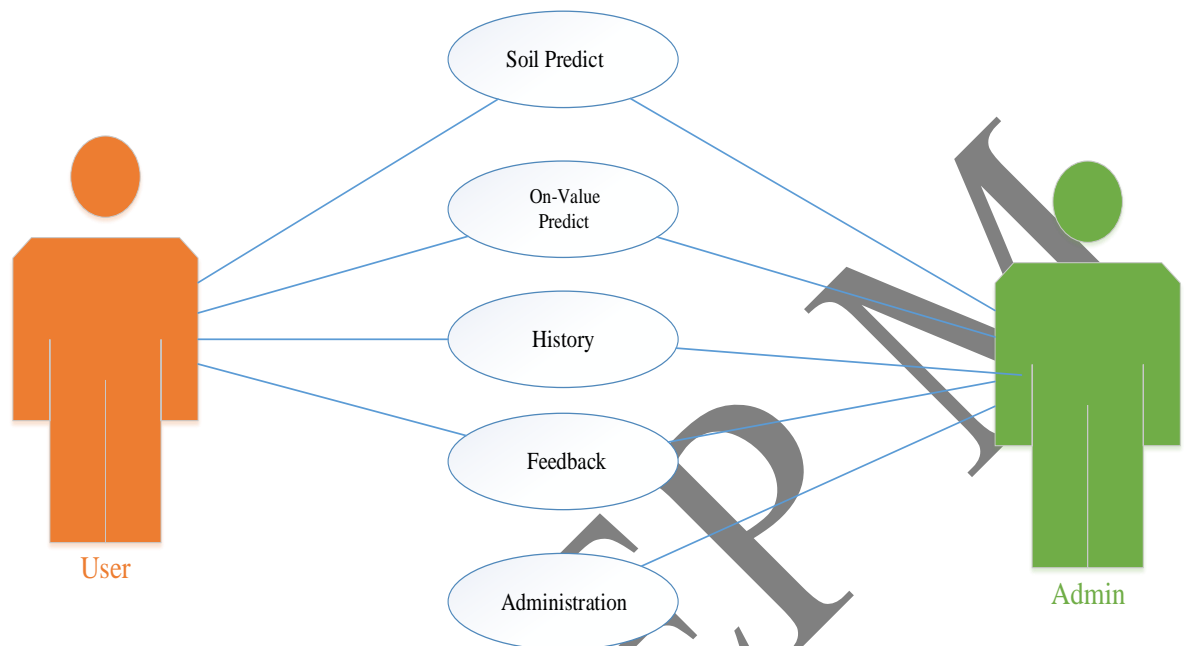
Feedback

- **Purpose**
Admin can view and delete all received feedback.
- **Responsible person**
Admin.
- **Entry Criteria**
By clicking the feedback Module.
- **Input**
Feedback details from the database.
- **Process**
Retrieve user's details from database and delete the feedback.
- **Output**
Display the all the received feedback.
- **Exit Criteria**
You can exit by clicking the back button.

Plant

- **Purpose**
Admin can view all plants and Admin can add new plant, and delete plants.
- **Responsible person**
Admin.
- **Entry Criteria**
By clicking the plant Module.
- **Input**
Plants details (moisture, ph and temperature values) from the database.
- **Process**
Retrieve user's details from database, add new user, update the user details and delete the user.
- **Output**
Display the all the users details.
- **Exit Criteria**
You can exit by clicking the back button.

3.4 UML Use Case



USE CASE	DESCRIPTION
Soil Predict	The user and admin can predict the soil value with plant recommendation.
On-Value Predict	The user and admin can give value and get the plant recommendation.
History	The user and admin can view the previously recommended plants.
Feedback	The user can send any issues or suggestions to the admin.
Administration	The admin can view overall of users, plants and feedbacks.

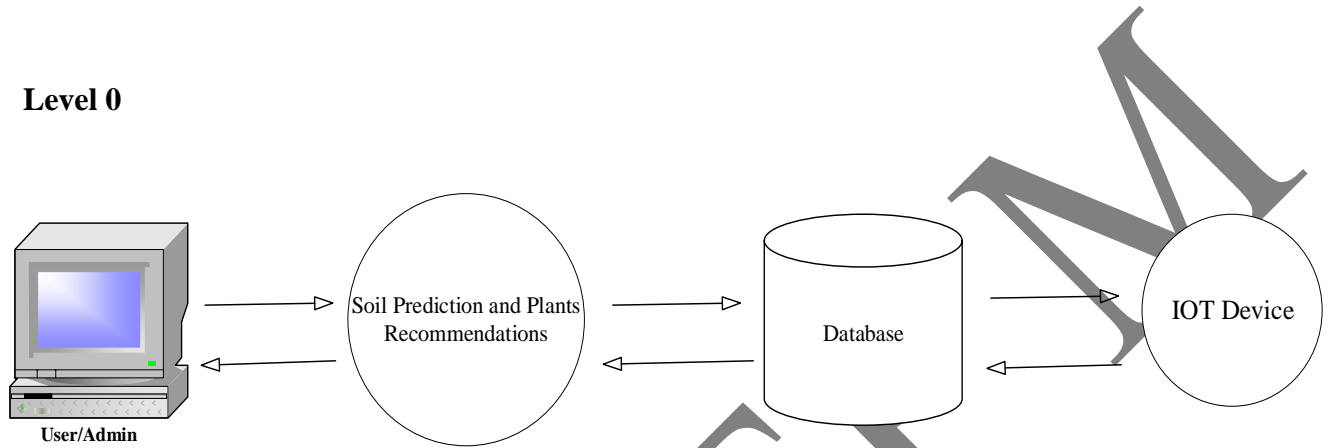
3.5 Summary

This session is described about System Analysis and design introduces the module description, and use case diagram

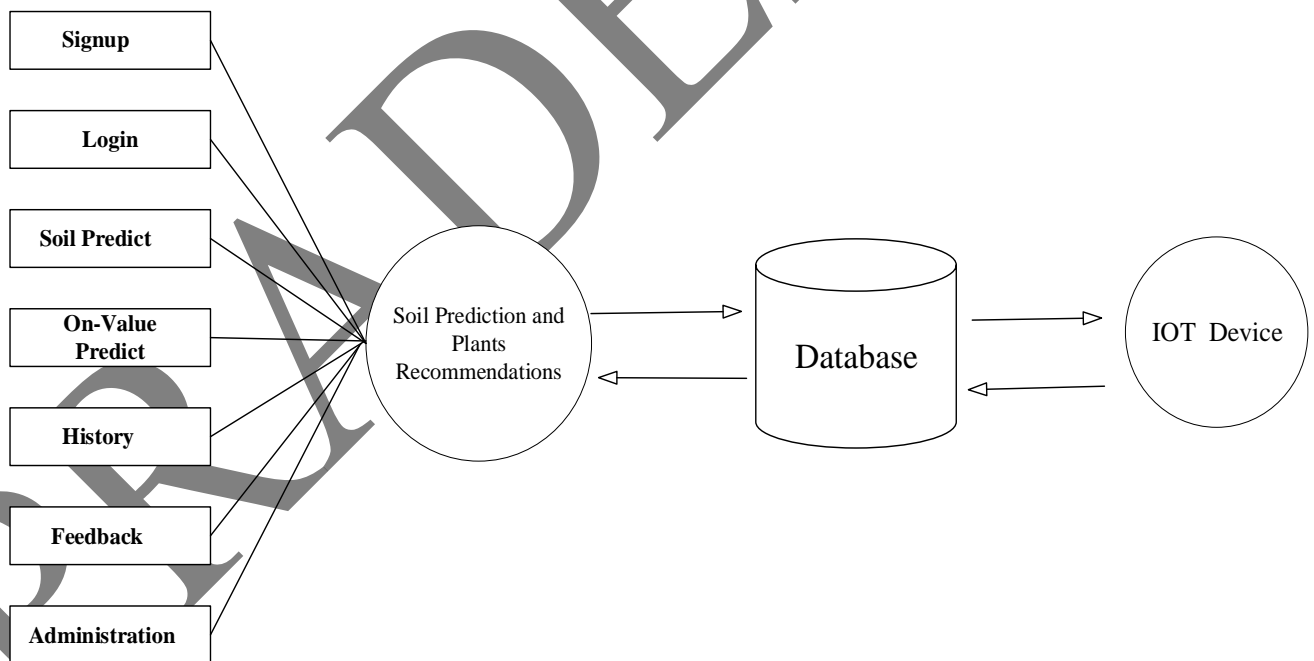
SOFTWARE ANALYSIS AND DESIGN

4.1 Data Flow Diagram

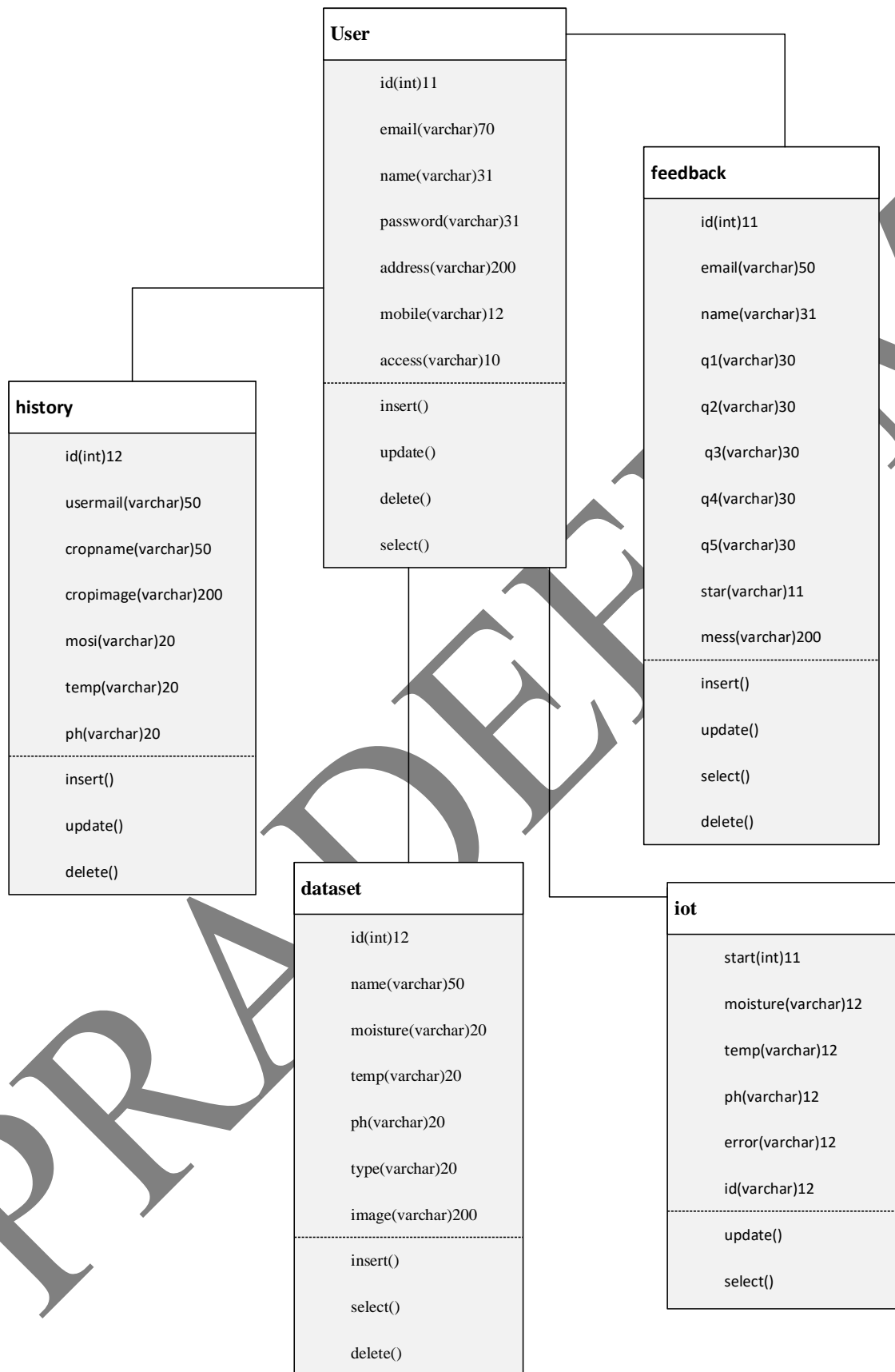
Level 0



Level 1

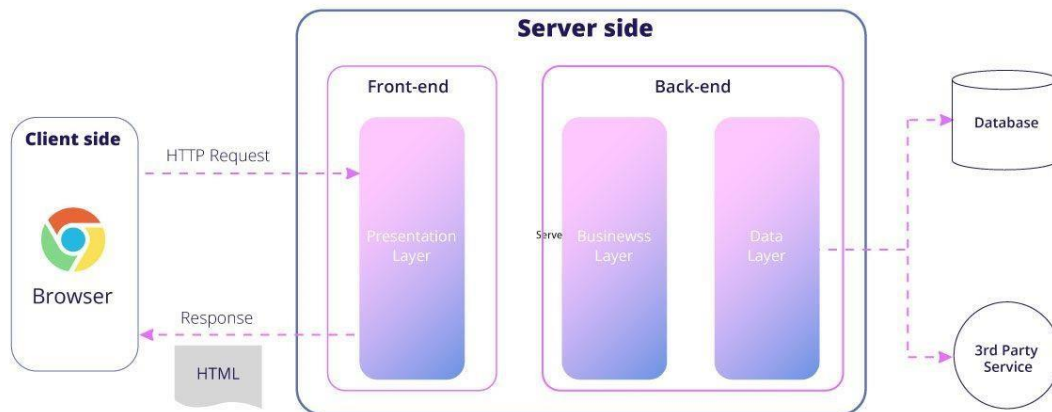


4.2 Class Diagram



4.3 Architecture Diagram

SERVER SIDE RENDERING (SSR)



4.4 Table Design

User

Column Name	Data type	Length	Key
id	Int	11	Auto_Increment
email	varchar	60	Primary Key
name	varchar	31	Not Null
password	varchar	17	Not Null
address	varchar	100	Not Null
mobile	varchar	11	Primary Key
access	varchar	20	Not Null

History:

Column Name	Data type	Length	Key
id	int	11	Auto_Increment
useremail	varchar	60	Primary Key
cropname	varchar	31	Not Null
cropping	varchar	100	Not Null
moisture	varchar	11	Not Null
temperature	varchar	11	Not Null
ph	varchar	11	Not Null

Feedback

Column Name	Data type	Length	Key
id	int	11	Auto_Increment
email	varchar	60	Primary Key
name	varchar	31	Not Null
q1	varchar	100	Not Null
q2	varchar	11	Not Null
q3	varchar	11	Not Null
q4	varchar	11	Not Null
q5	varchar	11	Not Null
star	varchar	11	Not Null
message	varchar	200	Not Null

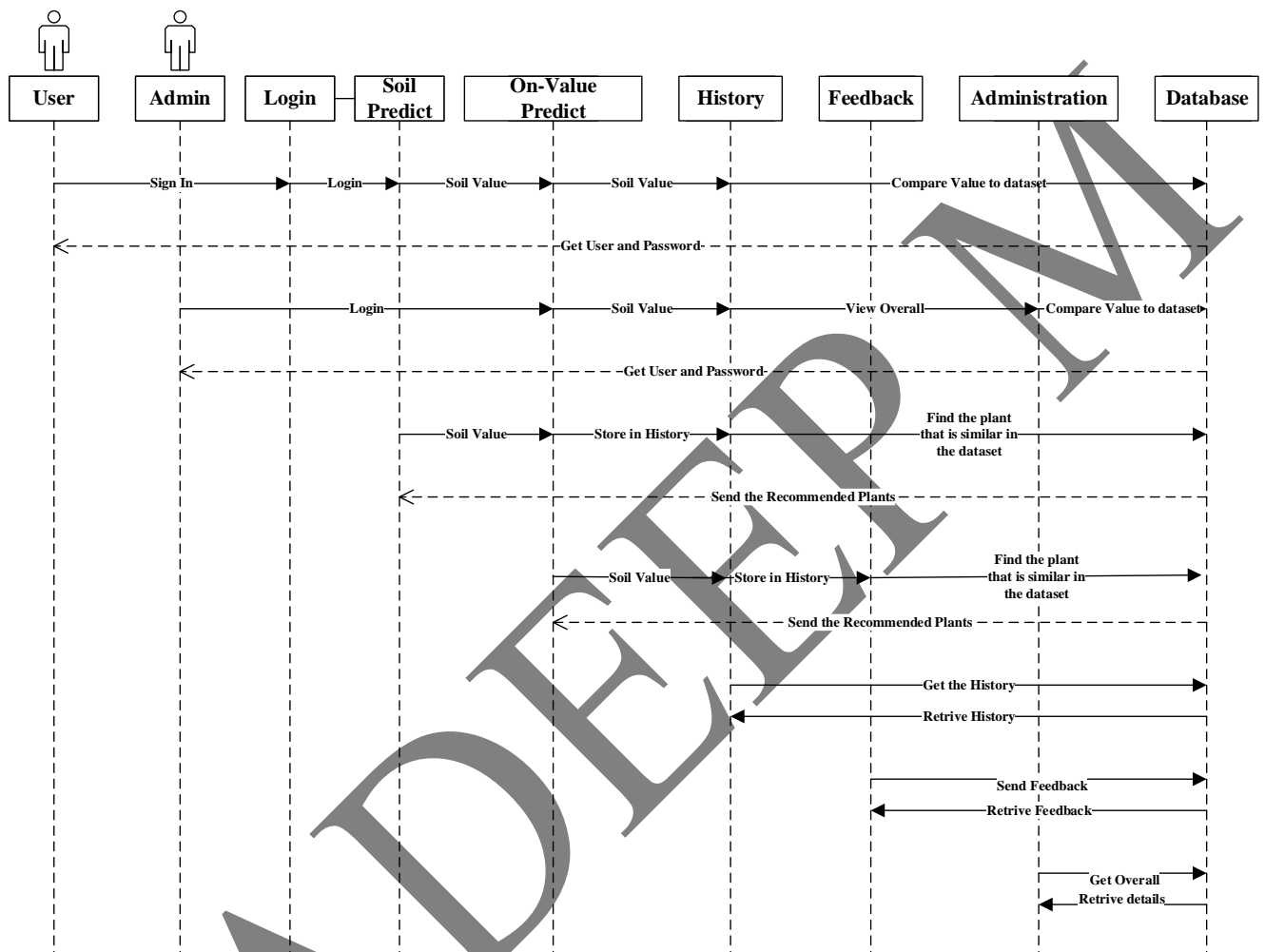
Dataset:

Column Name	Data type	Length	Key
id	int	11	Auto_Increment
name	varchar	31	Not Null
moisture	varchar	11	Not Null
temperature	varchar	11	Not Null
ph	varchar	11	Not Null
type	varchar	11	Not Null
image	varchar	200	Not Null

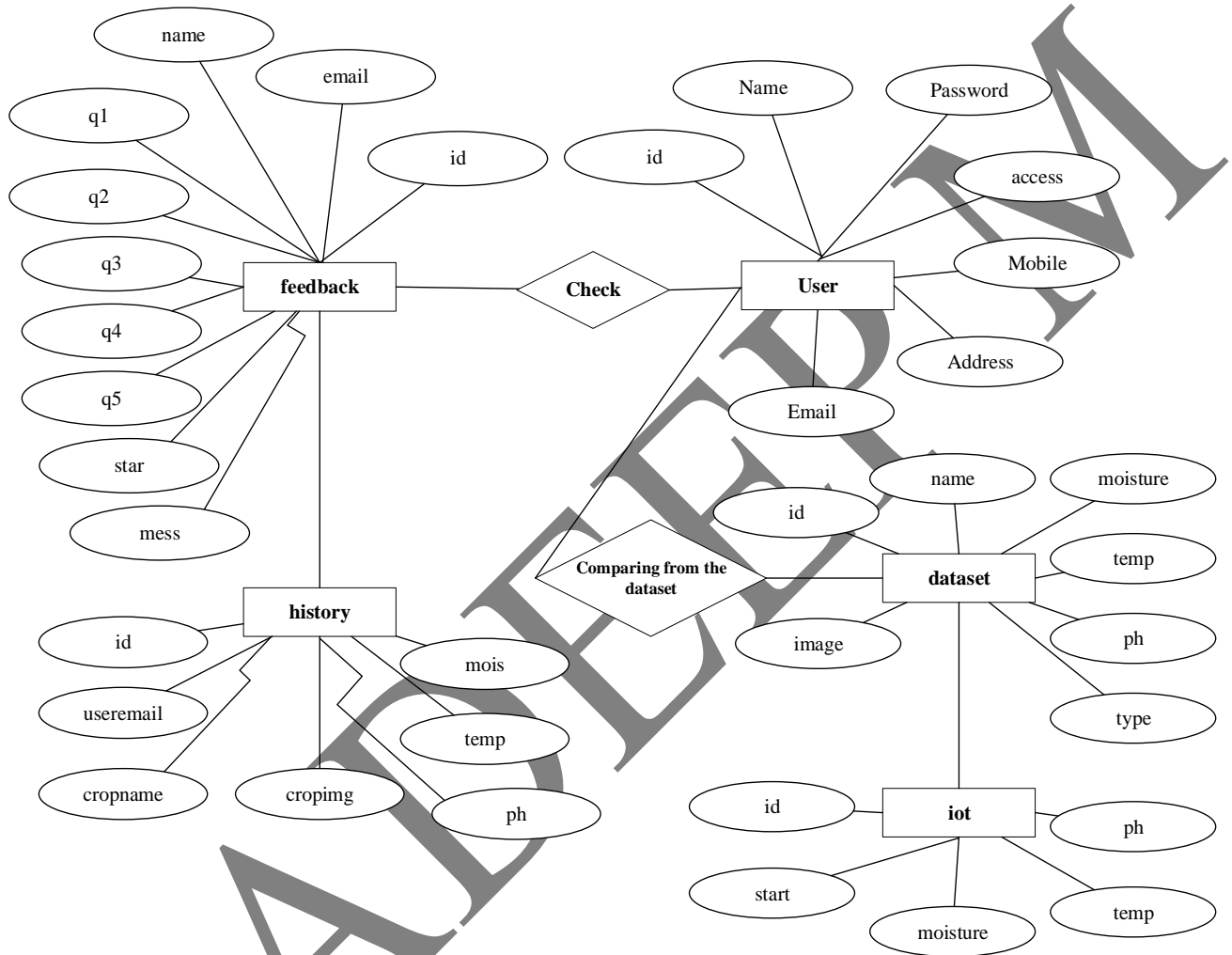
Iot:

Column Name	Data type	Length	Key
start	int	11	Not Null
moisture	varchar	11	Not Null
temperature	varchar	11	Not Null
ph	varchar	11	Not Null
id	int	11	Not Null

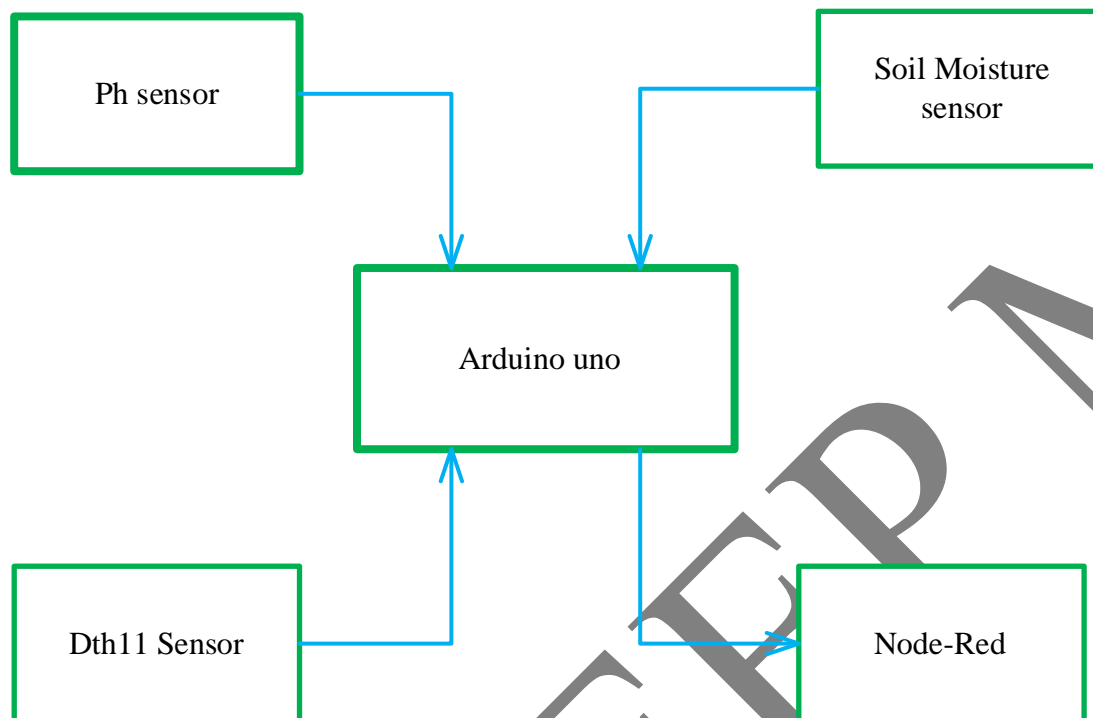
4.5 Sequence Diagram



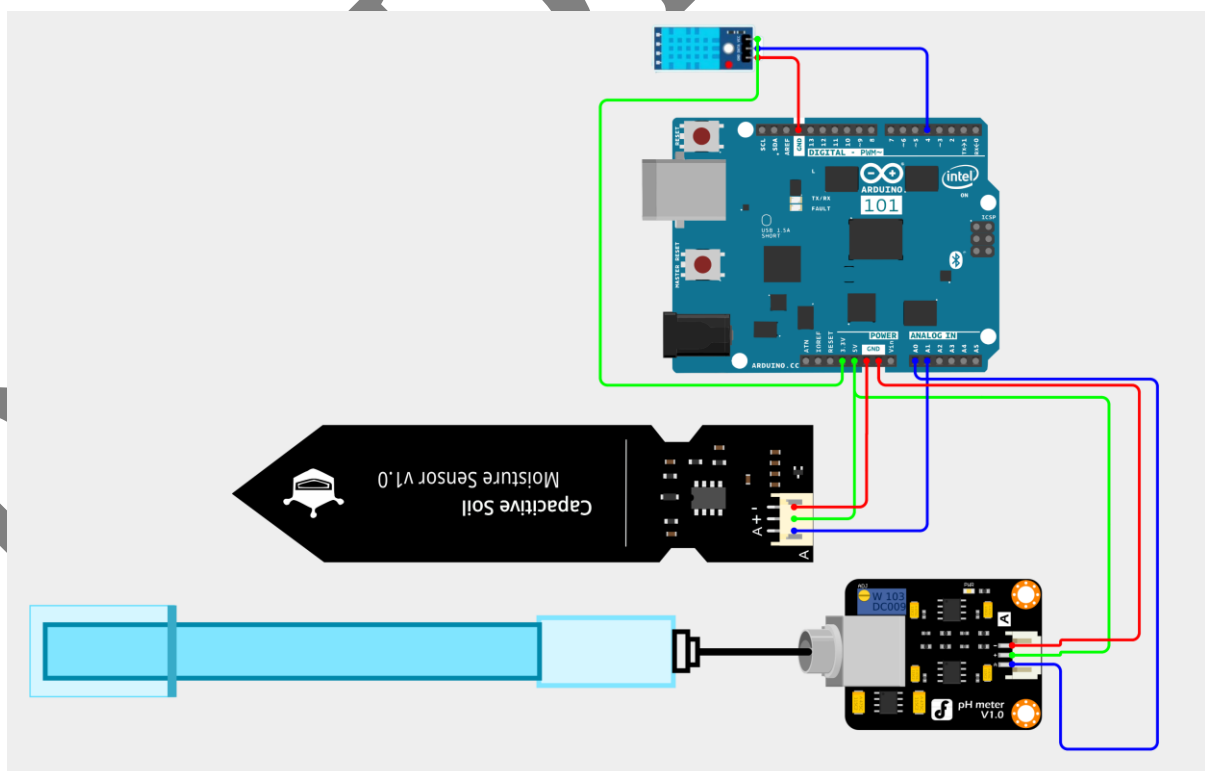
4.6 E-R Diagram



4.7 Block Diagram

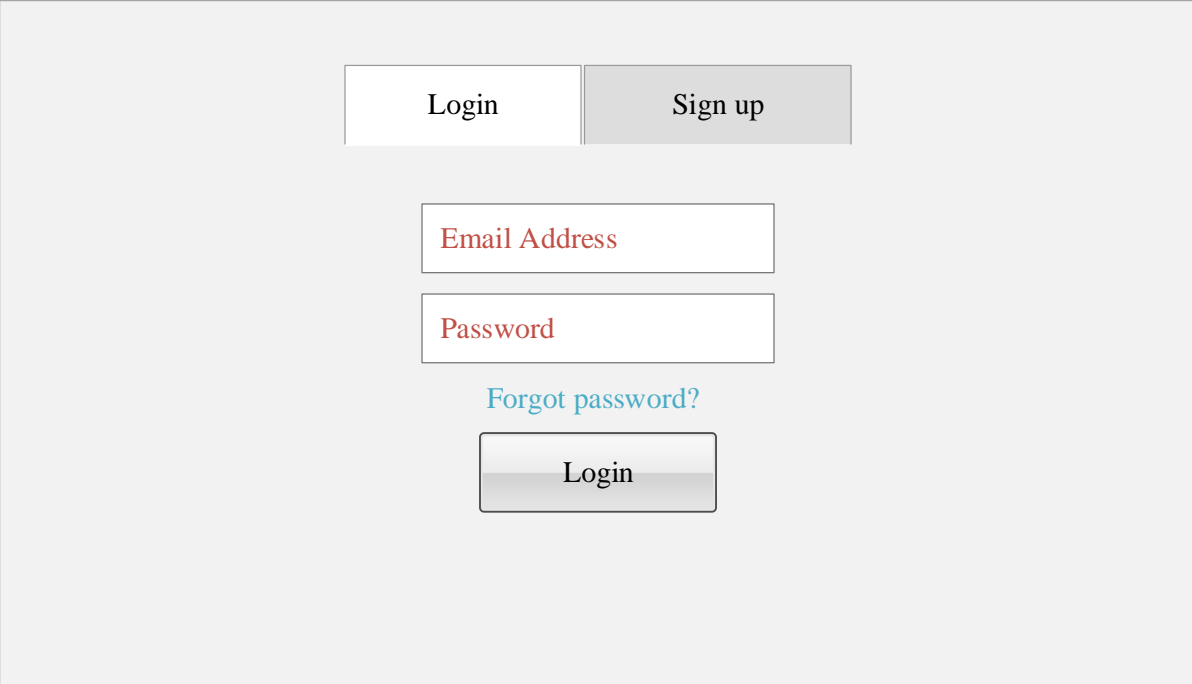


4.8 Circuit Diagram



4.9 UI Design

Login



A login form UI design on a light gray background. At the top, there are two buttons: 'Login' (white with a black border) and 'Sign up' (gray with a black border). Below these buttons are two input fields: 'Email Address' and 'Password', both with red placeholder text. Under the 'Password' field is a blue link that says 'Forgot password?'. At the bottom is a 'Login' button with a gradient from light gray to dark gray.

Login Sign up

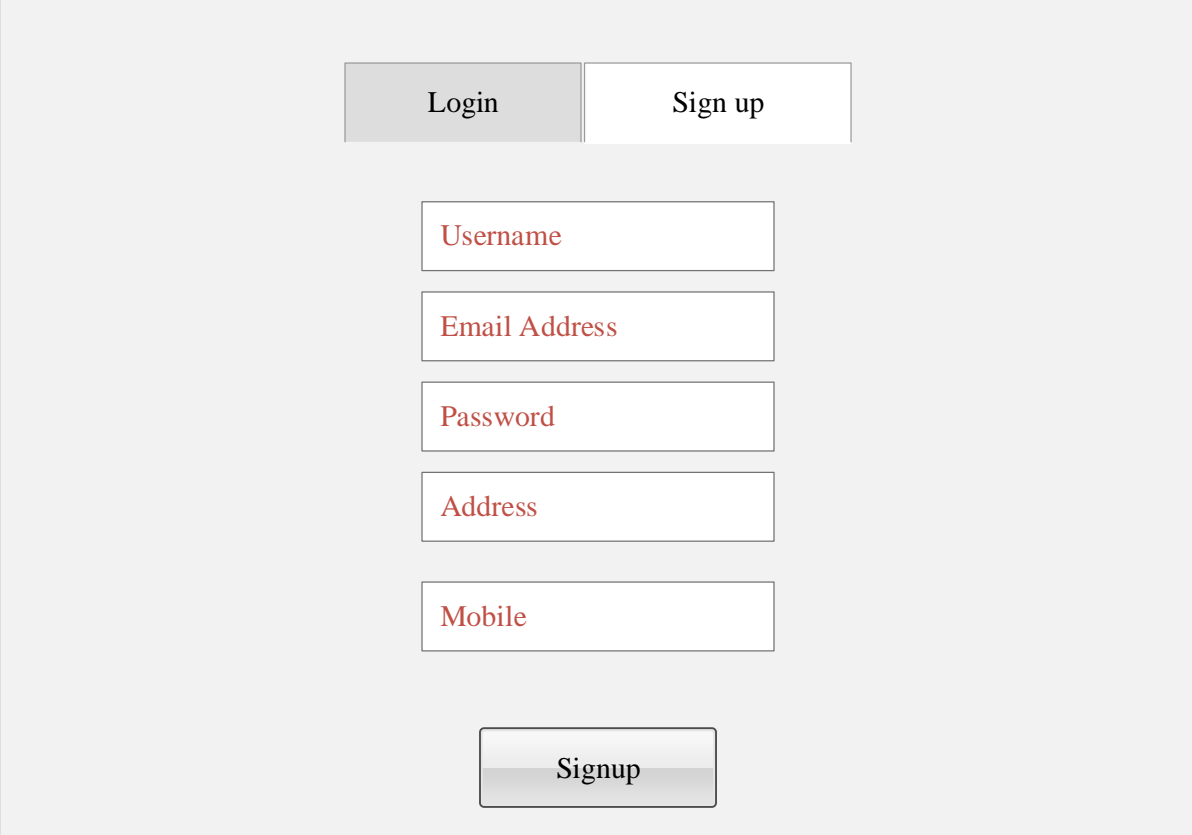
Email Address

Password

[Forgot password?](#)

Login

Sign Up



A sign up form UI design on a light gray background. At the top, there are two buttons: 'Login' (gray with a black border) and 'Sign up' (white with a black border). Below these buttons are five input fields: 'Username', 'Email Address', 'Password', 'Address', and 'Mobile', all with red placeholder text. At the bottom is a 'Signup' button with a gradient from light gray to dark gray.

Login Sign up

Username

Email Address

Password

Address


Mobile

Signup

Soil Predict

Soil Predict

Scan



Name:
Ph:
Moisture:
Temperature:

On-Value Predict


Value-Based
Prediction

Moisture

Temperature




Ph

Predict



Name:
Ph:
Moisture:
Temperature:

History

		
Name: Moisture: Temperature: Ph:	Name: Moisture: Temperature: Ph:	Name: Moisture: Temperature: Ph:

Feedback

Feedback

Question1
☒ Yes ☐ No ☐ May be

Question1
☒ Yes ☐ No ☐ May be

Question1
☒ Yes ☐ No ☐ May be

Question1
☒ Yes ☐ No ☐ May be

Any Suggestions

Send

Admin

Dashboard

Admin Dashborad

Dashboard

User

Feedback

Plant

Back

Total User
0

Total Feedback
0

Total Plant
0

Users Details

View All

S/no	Name	Password	Status
------	------	----------	--------

Feedback

View

Details
Details

User

Admin Dashborad

Dashboard

User

Feedback

Plant

Back

Users Details




Add User

S/no	Name	Password	Email	Mobile	Status	Operation
Details	Details	Details	Details	Details	Details	<div>UpdateDelete</div>

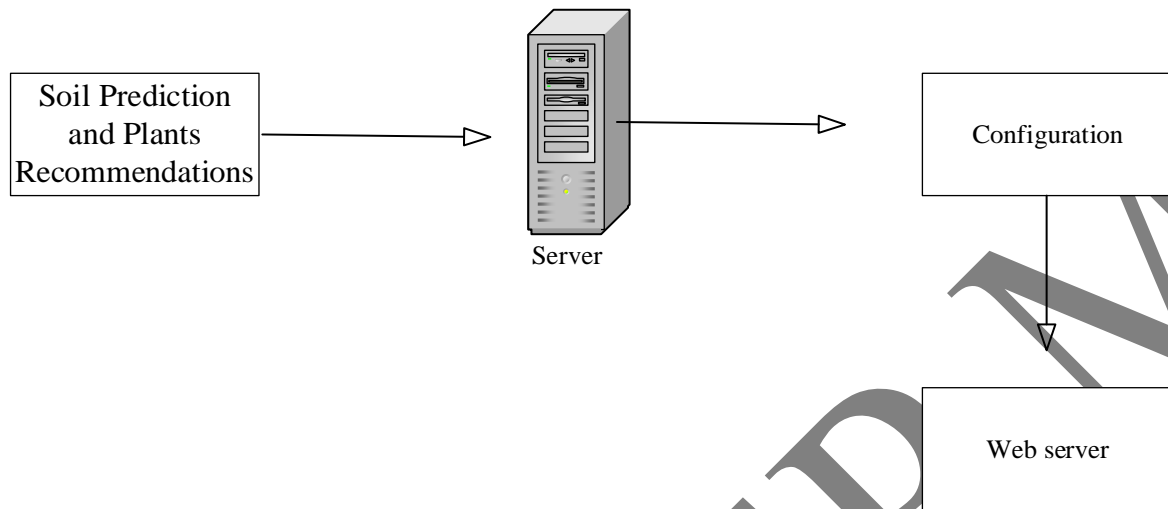
Feedback

<div>Admin Dashborad</div> <div>Dashboard</div> <div>User</div> <div>Feedback</div> <div>Plant</div> <div>Back</div>	<div>Feedback</div> <div>Delete All</div> <div><div>Name</div><div>Email</div><div>Start</div></div>
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Plant

<div>Admin Dashborad</div> <div>Dashboard</div> <div>User</div> <div>Feedback</div> <div>Plant</div> <div>Back</div>	<div>Plant</div> <div>Add Plant</div> <div><div><div>Name Moisture Temperature Ph</div></div><div><div>Name Moisture Temperature Ph</div></div><div><div>Name Moisture Temperature Ph</div></div></div>
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4.10 Deployment Diagram



4.11 Summary

This session is described about software analysis and design, data flow diagram, class diagram, activity diagram, E-R diagram, circuit diagram, Block diagram and table design.

5.1 Introduction

Testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. It includes preventing bugs, reducing deployment costs and improving performance.

5.2 Types of testing

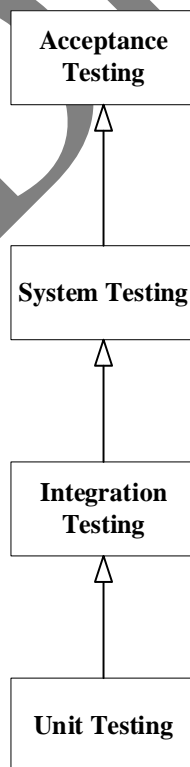
Manual Testing

Manual testing is a type of software testing in which test cases are executed manually by a tester without using any automated tools. The purpose of Manual Testing is to identify the bugs, issues, and defects in the software application.

Automatic Testing

Automated testing is a technique where software tests are executed automatically by a software tool or script, which compares the actual test results with the expected results.

5.3 Levels of Testing



Unit Testing

Unit testing is a type of software testing that focuses on individual units or components of a software system. The purpose of unit testing is to validate that each unit of the software works as intended and meets the requirements.

Test No	Module Name	Test Case	Expected Input	Expected Output	Test status
1	Sign in	To allow the user to enter the user details	Username	The username must contain only with alphabets and digits. Or If the username doesn't valid.	Successful
			Password	The password should contain at least one special character, digits, uppercase letter, and a lowercase letter. Or If the password doesn't valid.	Unsuccessful
			Mobile	The only numbers expected in Mobile Or If the Mobile number doesn't valid.	Successful
					Unsuccessful

			Email	Email is valid to the email format Or If the email doesn't valid.	Successful Unsuccessful
			Address	Address Should Contain be address Or If Address is empty doesn't Valid	Successful Unsuccessful
2	Login	Checks Whether the username and password correct or not.	Email Password	Email is valid to the email format The password should contain at least one special character, digits, uppercase letter, and a lowercase letter.	Successful Successful
3	Soil Predict	Allow the user to Start scan	Connect to IOT	If the IOT is connected Or If the IOT not is connected.	Successful Unsuccessful

4	On-Value Predict	Allow the user to enter the soil value like moisture,ph and Temperature	Moisture	The value should only number and up 30 to 100. Or If the value is invalid it alerts not found.	Successful
			Temperature	The value should only number and up 0 to 40. Or If the value is invalid it alerts not found.	Successful
			Ph	The value should only number and up 4.4 to 9.0. Or If the value is invalid it alerts not found.	Successful
					Unsuccessful
					Unsuccessful
					Unsuccessful

Integration Testing

Integration testing is a software testing technique that tests the interaction between different software modules or components. It is conducted after unit testing and before system testing.

Test No	Module Name	Test Case	Expected Input	Expected Output	Test status
1	Login & Sign in	Checks whether the email and password retrieved from sign up form.	Email Password	If the Email and password is in signup form, it receives.	Successful
				Or If the Email and password is not in the signup form, it doesn't receive.	Unsuccessful

System Testing

System testing is a type of software testing that evaluates the overall functionality and performance of a complete and fully integrated software solution. It is conducted after integration testing and before acceptance testing. The purpose of system testing is to ensure that the software meets the customer's requirements and specifications, and to identify any defects or issues that may arise when the software is deployed to the end users.

Acceptance Testing

Acceptance testing is a type of software testing that is performed to determine whether the software meets the customer's requirements and specifications. It is conducted as a formal testing process based on user requirements and function processing, and it determines whether the software is conforming to specified requirements and user requirements or not .

5.4 Summary

The chapter describes Test design case and in next chapter describe Conclusion.

CONCLUSION

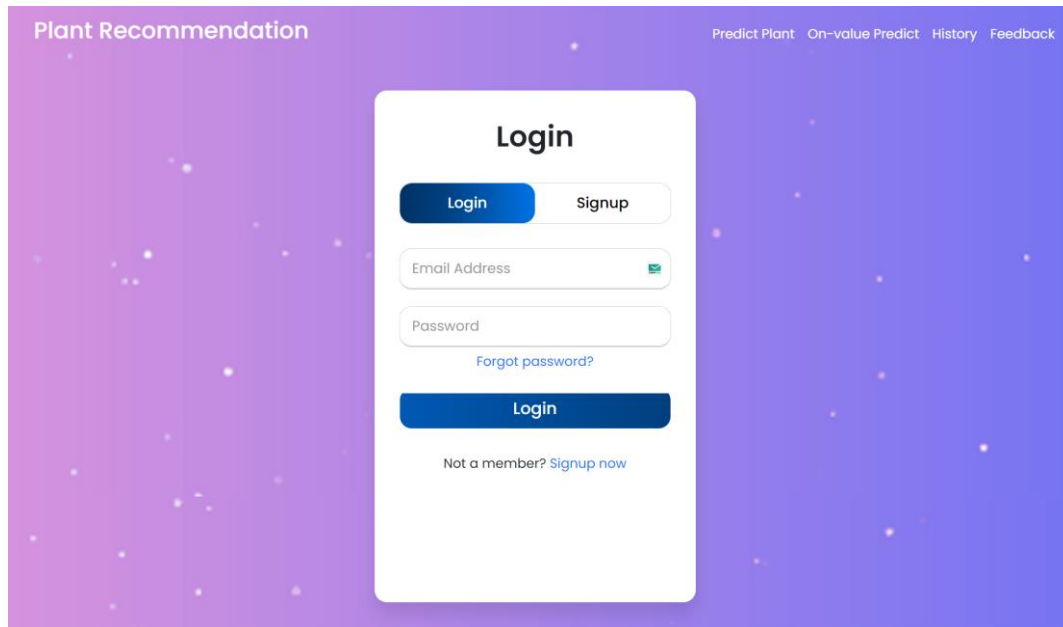
The Soil Prediction System and Plant Recommendations was an IOT-based project developed to enhance agricultural productivity by accurately assessing soil quality and recommending suitable plants or crops to farmers. The system utilized sensors to measure key parameters such as pH value, moisture content, and temperature level in the soil. By analysing these data points, the system provided real-time insights into the health of the soil and suggested appropriate plants or crops that were well-suited to the specific conditions. This helped farmers make informed decisions about what to plant, leading to increased yields and reduced costs associated with failed crops or ineffective soil management practices. The benefits of this project were multifaceted. It not only enhanced agricultural productivity but also reduced the workload and costs for farmers by automating the process of soil analysis and plant selection. Additionally, by delivering results immediately, it enabled farmers to take timely actions to optimize their farming practices and maximize their yields. Overall, the Soil Prediction and Plant Recommendations represented a promising solution for sustainable and efficient agriculture.

REFERENCE

- https://www.w3schools.com/html/html_responsive.asp
- <https://griddb.net/en/blog/k-nearest-neighbor-algorithm-in-java/>
- <https://themewagon.com/blog/loginsign-up-form-to-compliment-your-website/>
- <https://docs.arduino.cc/hardware/uno-rev3/>
- <https://getbootstrap.com/docs/4.0/getting-started/introduction/>
- <https://getbootstrap.com/docs/4.0/utilities/embed/>
- <https://www.quora.com/Is-Java-good-for-Internet-of-Things-IOT>

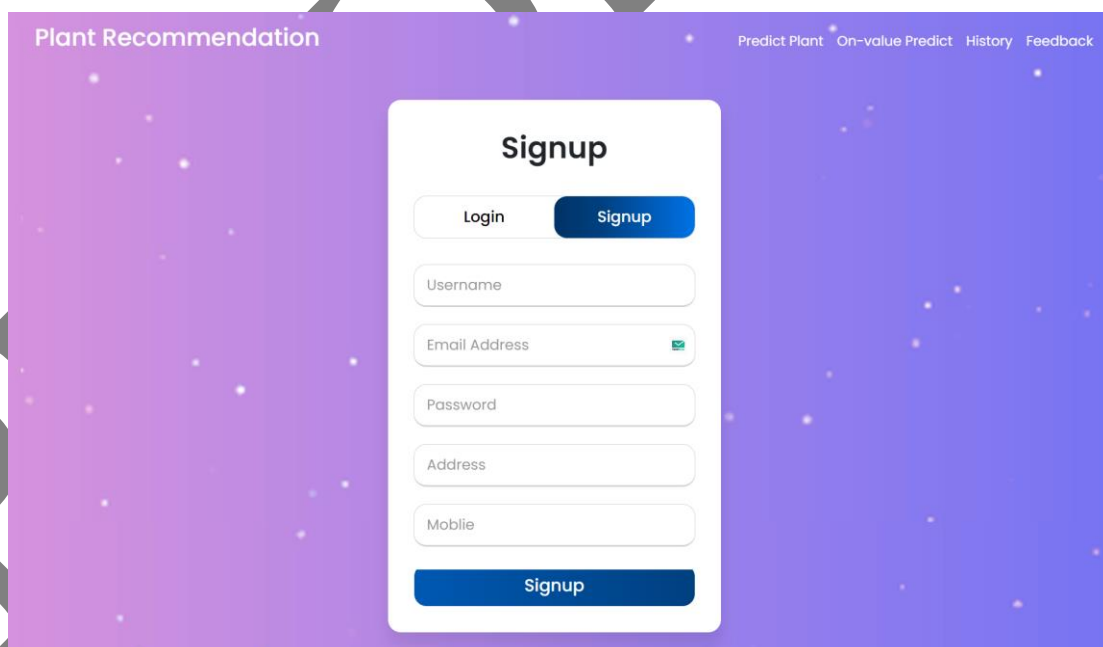
8.1 Screenshot

Login



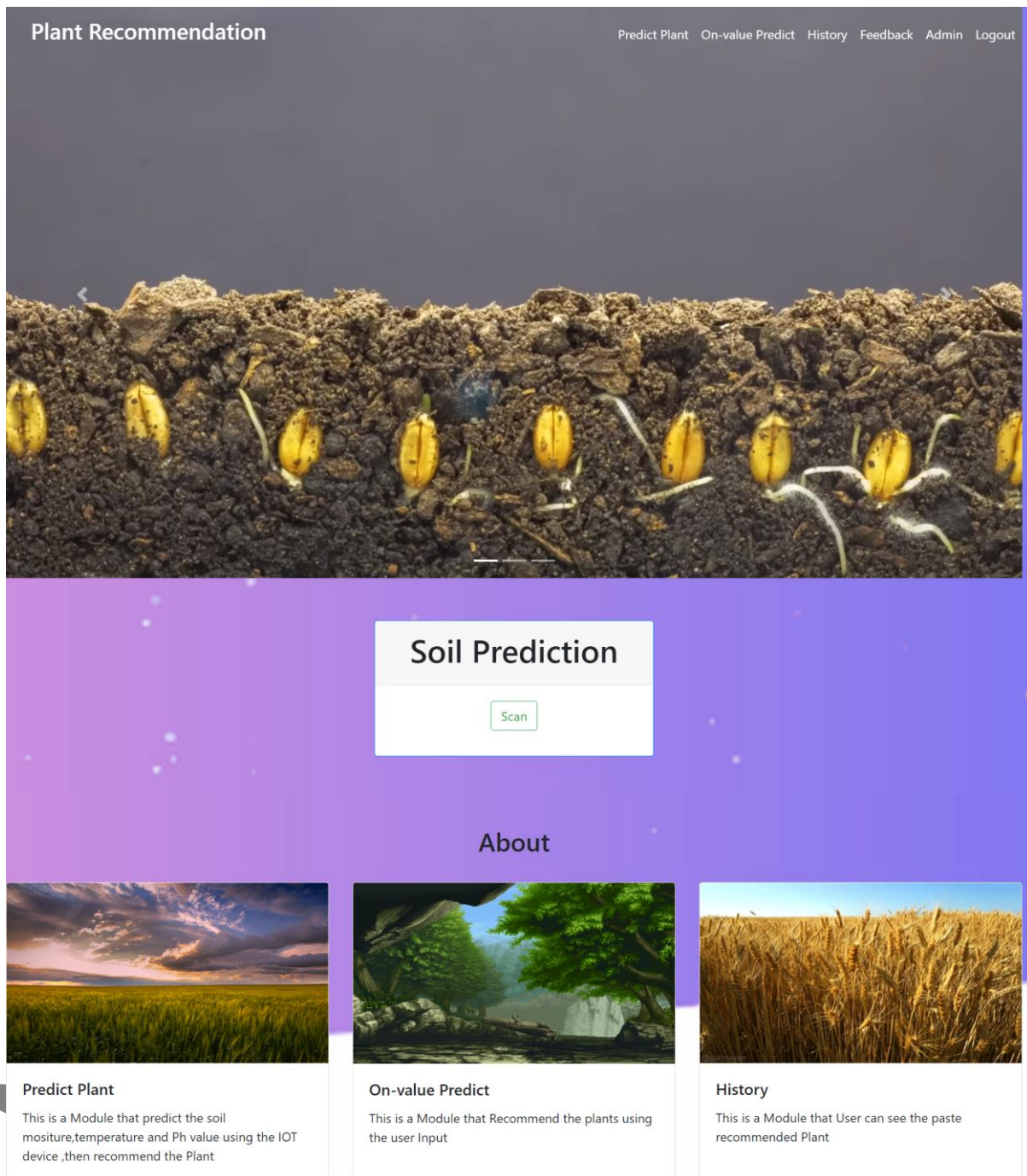
The screenshot shows the 'Login' page of the 'Plant Recommendation' application. The page has a purple gradient background with a starry pattern. At the top left, the text 'Plant Recommendation' is displayed. At the top right, there are links: 'Predict Plant', 'On-value Predict', 'History', and 'Feedback'. The main content is a white card with the title 'Login'. Inside the card, there are two buttons: 'Login' (blue) and 'Signup' (white). Below these are two input fields: 'Email Address' (with an email icon) and 'Password'. A link 'Forgot password?' is positioned below the password field. At the bottom of the card, there is a blue 'Login' button and a link 'Not a member? Signup now'.

Sign up



The screenshot shows the 'Signup' page of the 'Plant Recommendation' application. The page has a purple gradient background with a starry pattern. At the top left, the text 'Plant Recommendation' is displayed. At the top right, there are links: 'Predict Plant', 'On-value Predict', 'History', and 'Feedback'. The main content is a white card with the title 'Signup'. Inside the card, there are two buttons: 'Login' (white) and 'Signup' (blue). Below these are five input fields: 'Username', 'Email Address' (with an email icon), 'Password', 'Address', and 'Mobile'. At the bottom of the card, there is a blue 'Signup' button.

Soil Predict




On-Value Predict

Plant Recommendation

Predict Plant On-value Predict History Feedback Admin Logout

Predicted Successfully



Value-Based Prediction

Moisture

Enter the moisture level(0 to 100)


Temperature

Enter the Temperature in °C(Celsius)

Ph


Enter the PH Level(3 to 9.9)

Predict




Name: Orange
Ph: 6.75
Moistuer: 70
Temperature: 22.5


About



Predict Plant
This is a Module that predict the soil moisture,temperature and Ph value using the IOT device ,then recommend the Plant



On-value Predict
This is a Module that Recommend the plants using the user input





History
This is a Module that User can see the paste recommended Plant

History

Plant Recommendation

Predict PlantOn-value PredictHistoryFeedbackAdminLogout






Name:Orange

Mositure:70.0

Tempearture:23.0

Ph:7.0




Name:Apple

Mositure:70.0

Tempearture:23.0

Ph:6.5




Name:Orange

Mositure:70.0

Tempearture:23.0

Ph:7.0




Name:Apple

Mositure:70.0

Tempearture:23.0

Ph:6.5




Name:Ash Gourd (Petha)

Mositure:113.0

Tempearture:28.0

Ph:4.4




Name:Ash Gourd (Petha)

Mositure:113.0

Tempearture:28.0

Ph:4.4




Name:Ash Gourd (Petha)

Mositure:113.0

Tempearture:28.0

Ph:4.4




Name:Esfand/Harmal

Mositure:29.0

Tempearture:28.0

Ph:4.4



Name:Esfand/Harmal

Mositure:-31.0

Tempearture:28.0


Ph:4.4

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Feedback

Plant Recommendation

Predict PlantOn-value PredictHistoryFeedbackAdminLogout



Feedback

Full Name

Email Address

Are you satisfied with our services?

☒ Yes ☐ No ☐ May be

Has our website UI added positively to your overall satisfaction?

☒ Yes ☐ No ☐ May be

Would you recommend Plant recommend for work to your friends?

☒ Yes ☐ No ☐ May be

Have you used a similar Plant recommend before?

☒ Yes ☐ No ☐ May be

Do you feel our Plant recommend is worth the cost?

☒ Yes ☐ No ☐ May be


How was your experience?

★★★★★

Give any suggestions


Send

About




Predict Plant

This is a Module that predict the soil moisture,temperature and Ph value using the IOT device ,then recommend the Plant



On-value Predict

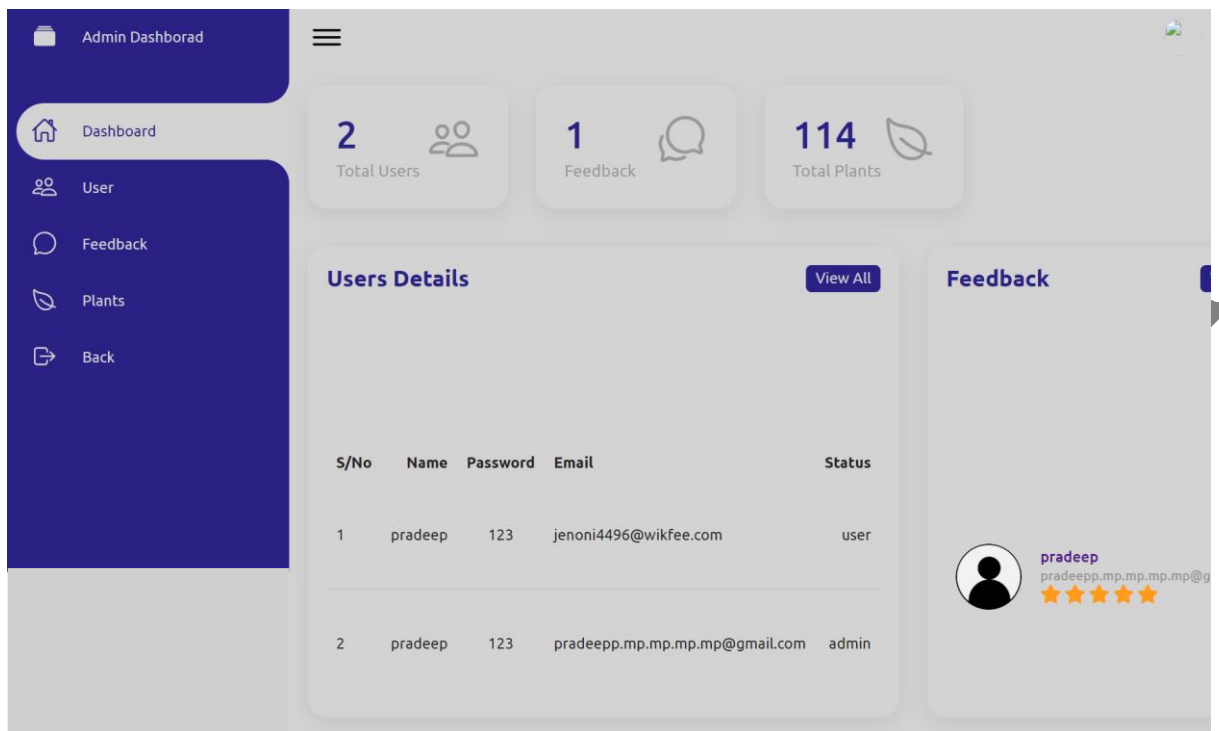
This is a Module that Recommend the plants using the user input



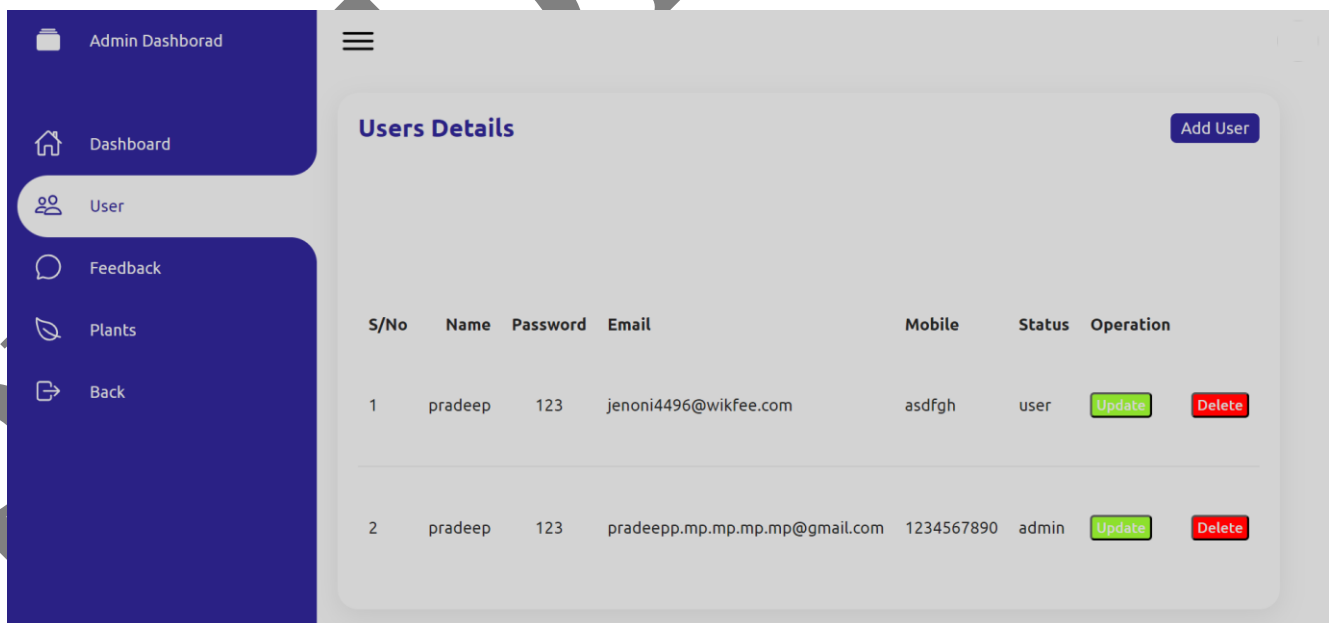
History

This is a Module that User can see the paste recommended Plant

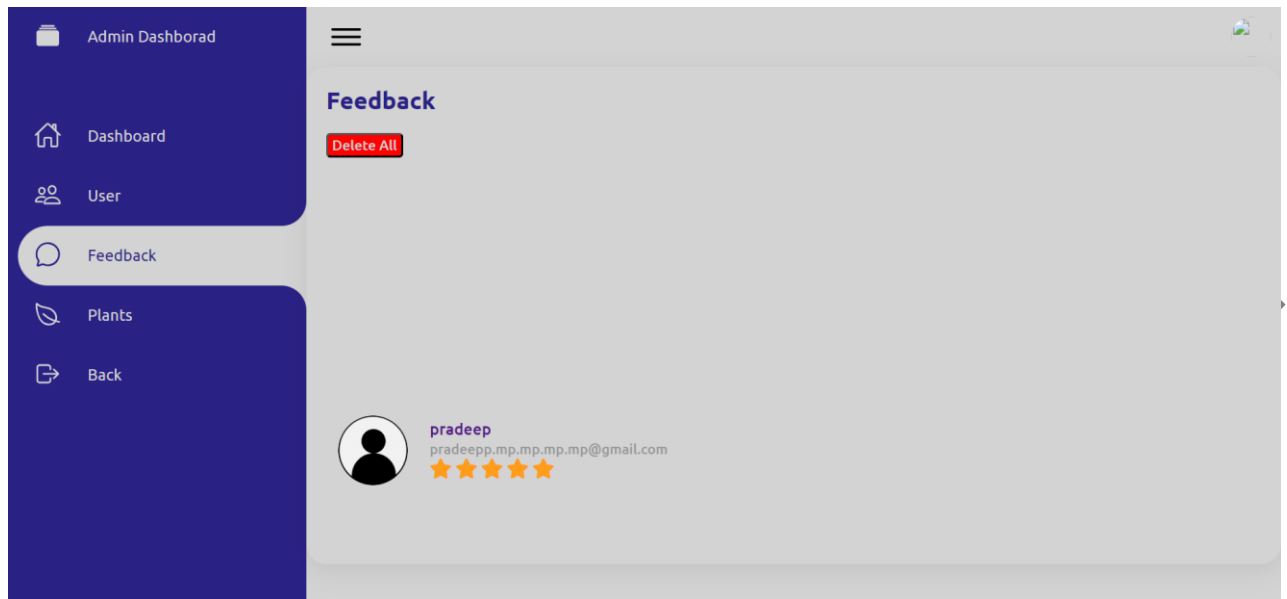
Admin Dashboard



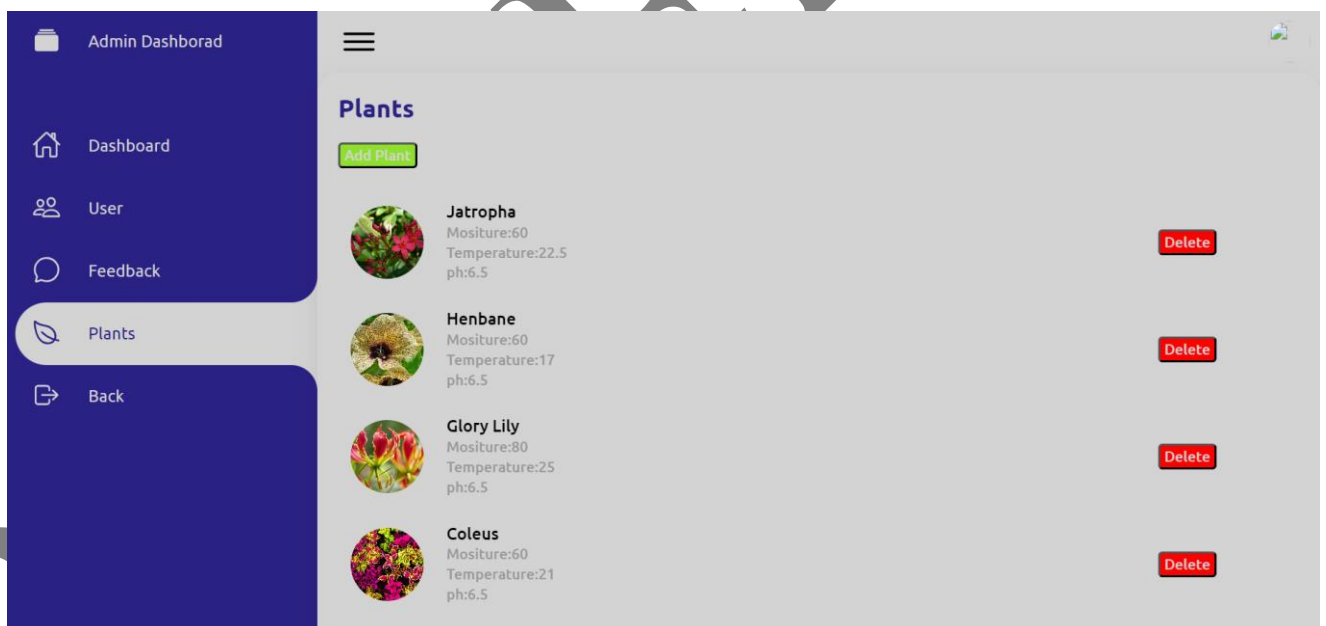
User



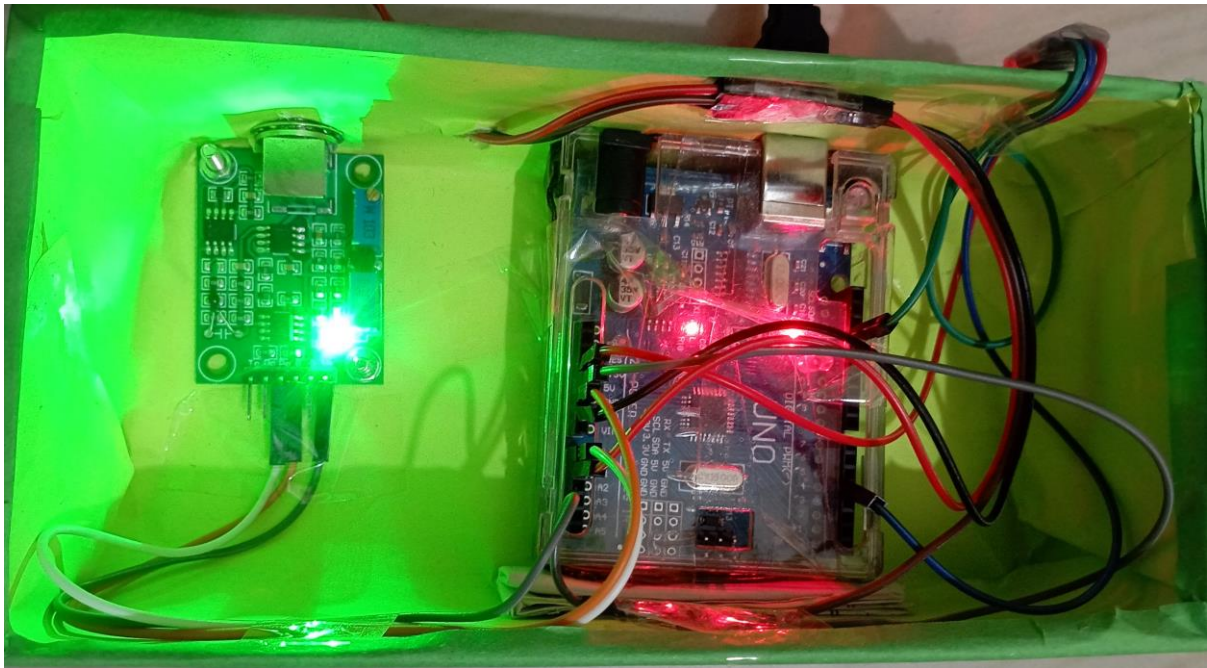
Feedback



Plants



IOT



IOT Sensor

