

AquaTerra

IOS Mobile App Project

By Team AQ-RedBack



Our Team



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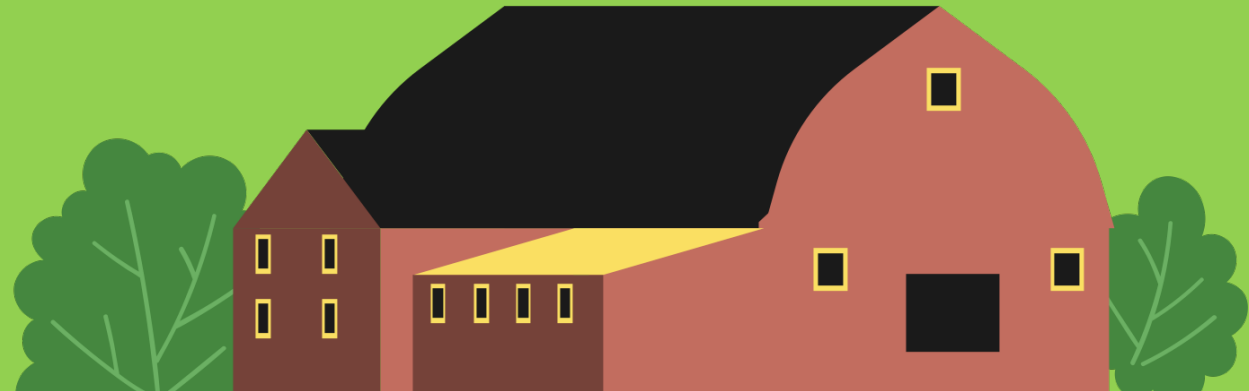
Lokesh Chandra

Client



Wei Wang

Supervisor



Project Background

Client Overview

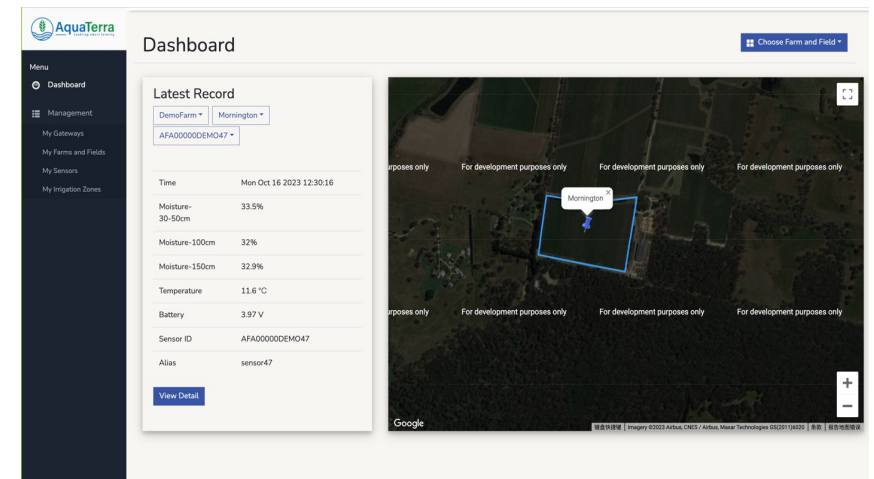
- Our client **AquaTerra** is an organization specializing in **online farming solutions**. Their focus is on utilizing soil moisture and temperature data to enable **smart farming**.

Current Infrastructure

- AquaTerra's existing infrastructure is based on **AWS cloud services** and it hosts their web platform. The platform provides users with critical soil data across different field sections.

Project Objective

- To develop an IOS mobile application integrating all the functionalities available on its web app.
- To enhance **customer data presentation, improve customer satisfaction and expand the company's market reach**.



Project Initial Challenges And Goals

Challenges



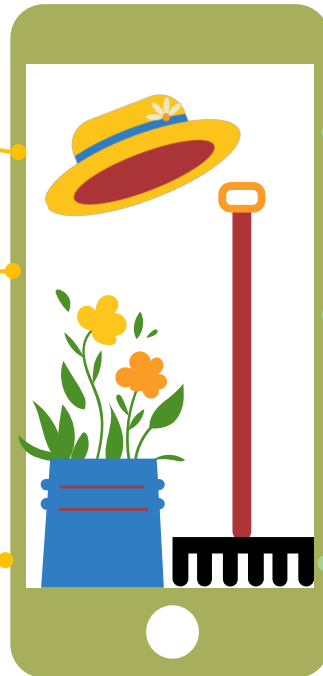
Team's unfamiliarity of IOS development and AWS knowledges.



Limited access to physical sensors so additional IT support required.



Time constraints & scheduling conflicts due to team members' other commitments



Goals

Support elderly farmers in overcoming physical limitations during farm management.



Allow farmers to integrate technologies into farm operations, increase efficiency.



Ensure great usability of all features, especially for the less tech-savvy farmers.



Users' Core Requirements

I want to register and edit my irrigation zones to better manage my crops within the zone.

I want to register new gateways and fields within the farm to connect to the sensors.

I want to register and edit sensors for my field to effectively track and record their data.

I want an informative and clear dashboard to get a better overview of the sensor status.

Our User



Scenario 1

Our User

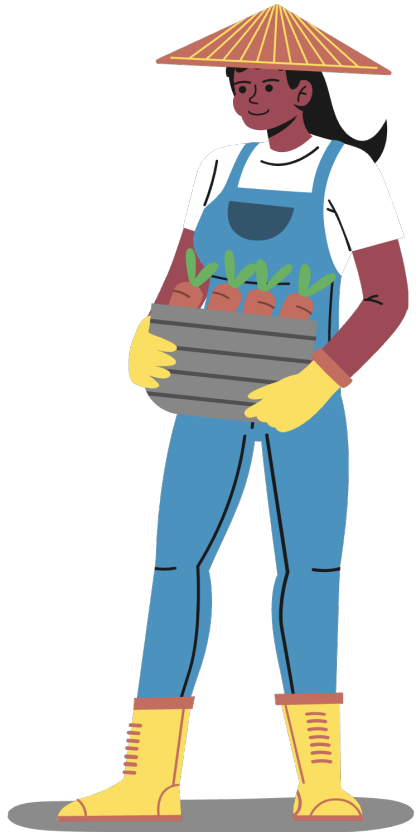


I want to register a new gateway and a new field so that I can later connect my sensor to the field through the gateway.

A mobile app interface for AquaTerra. At the top, there's a header image of a wheat field. Below it is the AquaTerra logo, which consists of a circular icon with a stylized leaf and waves, followed by the text "AquaTerra". The main content area contains two input fields: "Email" and "Password". Below the "Password" field is a link that says "Forgot Password". There is a green "Log in" button. Below this is a horizontal line with the word "or" in the center. At the bottom is a black button with the text "Create New Account". The status bar at the very top shows the time "12:29" and battery level.

Scenario 2

Our User



I want to create a new irrigation zone in the Mornington field for rice and document soil details and related information.

Farm Management



My Gateways



My Farm and Fields



My Sensors



My Irrigation Zones



Scenario 3

Our User



I bought a new Version 1 sensor from AquaTerra Group today, now I want to register this new sensor to Mornington field.

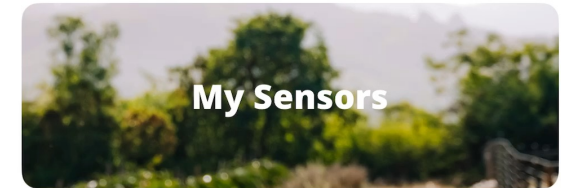
Farm Management



My Gateways



My Farm and Fields



My Sensors

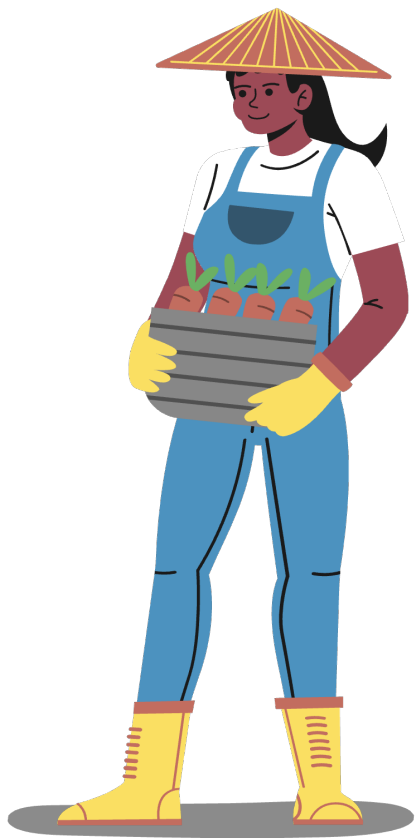


My Irrigation Zones

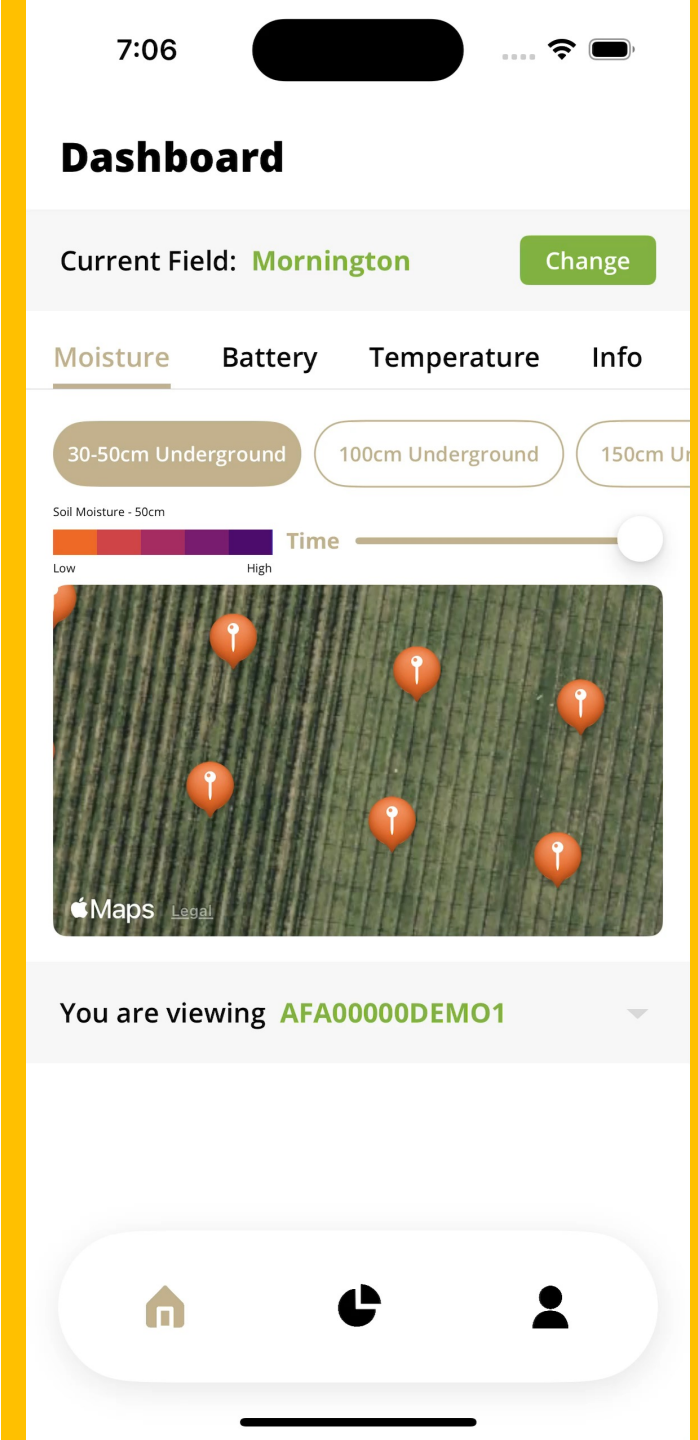


Scenario 4

Our User



I want to check the moisture levels at a 100cm underground depth from the sensor DEMO022 and gather related sensor details.



Current Status Of Our Project



100%

5/5 user stories
fully completed



80%

4/5 user stories
fully completed

1/5 user stories
partially completed



66%

4/6 user stories
fully completed

2/6 user stories
partially completed



100%

3/3 user stories
fully completed



100%

3/3 user stories
fully completed

In Total

86% of the user stories are fully completed

14% partially
completed

Project Handover

Source Code Repository & Zip file

- Compress our source code to Zip file and send over to client through email.
- In-code comments that provide explanations for the code.

Documentation for Codebase

- High-level explanations of the code's structure, core algorithms and data structures in a README
- Send over to client through email.



Project Confluence Pages Access

- Export all pages including product backlogs, test plans etc. into PDF with embedded navigation links
- Send over to client through email.

App User Guide and Instructions

- Provide a document explaining how to use the software, its features, and options.
- Include an application workflow diagram, send through email.

Reflections On Project Management



Timeline Management

Efficient use of Jira Timeline and built-in dependency links to ensure smooth development progress. Our team carefully assigned story points to each user stories and allocated a distributed number of user stories to each sprint.



Team Dynamics

Our team holds frequent communications to discuss roadblocks and progress. We frequently share learning resources within our group chats, and we employ pair-programming strategies for debugging and quality assurance.



Adaptability

We encountered changes in client requirements during the sprint. By gaining a comprehensive understanding of their vision and closely engaging with our client, we successfully incorporated the changes.



Future Improvement

Utilizing more project management tools such as a team dashboard. Our team's scope of responsibility is not very clearly defined, which can lead to ambiguity in roles and responsibilities, potentially hindering our project's efficiency.

Lessons Learned

Embrace Adaptability

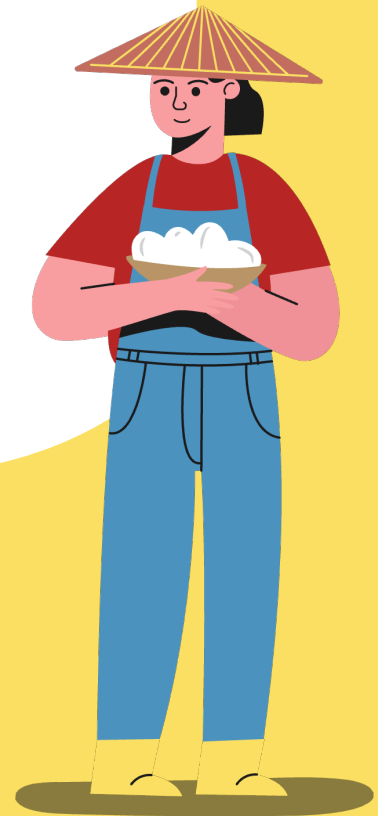
Changes are normal, especially in real-world scenarios.

The Importance of Time and Task Management

Proper management can lead to increased productivity and efficiency.

Communication With Stakeholders Is Crucial

Effective communication can facilitate decision-making and expectation management, allowing for the establishment of robust feedback loops.



References

Gardening in the Greenhouse for Kids | Google Slides & PPT. (n.d.). Slidesgo.com. Retrieved October 16, 2023, from <https://slidesgo.com/theme/gardening-in-the-greenhouse-for-kids#search-farm&position-7&results-71&rs=search&rs=search>

Farmhouse Infographics | Google Slides & PowerPoint template. (n.d.). Slidesgo.com. Retrieved October 16, 2023, from <https://slidesgo.com/theme/farmhouse-infographics#search-farm&position-34&results-71&rs=search&rs=search>

High School Environmental Science - Asian Countryside. (n.d.). Slidesgo.com. Retrieved October 16, 2023, from <https://slidesgo.com/theme/environmental-science-subject-for-high-school-the-asian-countryside#search-farm&position-43&results-71&rs=search&rs=search>

Aquaterra Web App. (n.d.). Webapp.aquaterra.cloud. Retrieved October 16, 2023, from <https://webapp.aquaterra.cloud/#/login>

Q&A

We are happy to answer any questions related to our project!

