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Home



Welcome to your new space!

Confluence spaces are great for sharing content and news with your team. This is your home page. Right now it shows recent space activity, but you can customize this page in any way you like.

Complete these tasks to get started

- Edit this home page** - Click *Edit* in the top right of this screen to customize your Space home page
- Create your first page** - Click the *Create* button in the header to get started
- Brand your Space** - Click *Configure Sidebar* in the left panel to update space details and logo
- Set permissions** - Click *Space Tools* in the left sidebar to update permissions and give others access

Recent space activity



Yunqing Yu

Development Environment 11 •

Date 17/08/2023 35 •



Jiakang Li

Date 18/08/2023 2 •



Bowei Huang

Development Environment 3 •



Yunqing Yu

Prototypes 3 •

Space contributors

- [Yunqing Yu \(11\)](#)
- [Jiakang Li \(2\)](#)
- [Bowei Huang \(3\)](#)
- [Yilin Liu \(3\)](#)
- [admin admin \(15\)](#)

AquaTerra Project Overview



Project Objectives

Aquaterra, an organization specializing in simplifying and cost-effective online farming solutions utilizing parameters such as soil moisture and temperature, currently operates a web platform developed on AWS cloud services and a PostgreSQL backend. The platform facilitates user access to crucial moisture data across different sections of their fields.

The current focus involves developing a mobile application to optimize customer data presentation. This strategic move aims to elevate customer satisfaction and extend the company's market reach. The organization's proficient IT team will provide guidance to the team, encouraging them to leverage their creativity and innovation in designing the application.

Source: https://canvas.lms.unimelb.edu.au/courses/156871/pages/aquaterra-code-aq?module_item_id=4949498

Project Goals

★ Mobile Application Development

Design and develop a user-friendly mobile application to empower farmers to effectively manage and monitor sensor data from their farm fields. The application will provide a convenient platform for accessing real-time and historical data related to soil moisture, moisture depth, soil temperature, evaporation, and precipitation variations captured by the sensors.

★ Transition from Web to Mobile

Successfully migrate features from the existing Aquaterra web platform to the mobile application. This transition should maintain core feature consistency while optimizing the user experience for mobile devices.

★ Comprehensive Data Monitoring

To enable farmers to have a comprehensive view of their farm's status by offering insights into critical parameters. Farmers should be able to track fluctuations in moisture levels and temperature, allowing for timely adjustments in irrigation and other farming practices.

★ Enhanced Data Representation

To present sensor data in a visually appealing and understandable manner. The mobile application will utilize graphs, charts, and intuitive interfaces to convey complex data trends and patterns, enabling farmers to make informed decisions based on the information at hand.

★ Real-time Notifications

To provide a mechanism for sending real-time notifications and alerts to farmers. Alerts can be triggered by specific conditions such as sudden changes in moisture levels, extreme temperatures, or other parameters that may impact crop health. This feature ensures that farmers can respond promptly to emerging challenges.

Our Team

Name	Role	Responsibilities and Regular Activities	Email
------	------	---	-------

	Product Owner	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Reassess the product backlog of development tasks and adjust priorities as needed. <input checked="" type="checkbox"/> Maintain constant accessibility during development to address team members' inquiries and prevent misunderstandings. <input checked="" type="checkbox"/> Establish clear sprint objectives and goals. <input checked="" type="checkbox"/> Monitor updates, feedback, and inquiries from clients. 	yunqingy@student.unimelb.edu.au
	Scrum Master	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Ensure timely delivery of planned features within each sprint. <input checked="" type="checkbox"/> Conduct and coordinate standup meetings and other Scrum ceremonies. <input checked="" type="checkbox"/> Regularly oversee the Kanban board and allocate tasks to team members. <input checked="" type="checkbox"/> Maintain vigilance over project updates and progress, offering proactive feedback. 	yilliu3@student.unimelb.edu.au
	Dev Lead	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Engage in routine standup meetings, providing updates on ongoing development progress and sharing feedback. <input checked="" type="checkbox"/> Collaboratively address bugs and defects in the code, working together to find effective solutions. <input checked="" type="checkbox"/> Regularly monitor the Kanban board to stay informed about new changes and updates. 	boweih@student.unimelb.edu.au yozhou1@student.unimelb.edu.au
You Zhou	Dev Member		
	Quality Manager	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Monitoring and inspecting our mobile application to identify deviations from quality standards and taking corrective actions when necessary. <input checked="" type="checkbox"/> Identifying potential quality risks and implementing measures to mitigate them. 	jiakangl@student.unimelb.edu.au
Jiakang Li			

Communication Plan

Owner	Meeting Title	Audience	Objective	Frequency	Format (virtual /face to face)
Scrum Master	Project status report	Product Owner	Review the project's current status and discuss the potential issues.	Weekly	Virtual (Zoom)
Product Owner	Report progress to stakeholders	Project stakeholders	Report progress of the project to stakeholders and get feedback from them.	Weekly	Virtual (Zoom)
Scrum Master & Product Owner	Task progress	Dev Team	Discuss the progress of the task and check if any resources are needed for development.	Twice a week	Face-to-face
Team	Discuss project status	Supervisor	Describe the problem we faced with the project, then seek advices and suggestions.	Whenever the consultation is required	Virtual (Zoom)

Team	Clarify requirements	Client	Clarify requirements and resolve doubts	Weekly	Virtual (Zoom)
Scrum Master	Sprint planning ceremony	Dev Team	Discuss the goals and requirements for the project and generally identify the goals for each sprint	Beginning of the project	Virtual (Zoom)
Scrum Master	Sprint demo and review	Dev Team	Review each sprint and see if any of them fell short of expectations	Weekly	Virtual (Zoom)

Development Environment

Subject to change

Due to our team's limited experience in iOS development, it's important to acknowledge that the current development environment is susceptible to adjustments and modifications. As we delve further into the intricacies of iOS app development and gain a deeper understanding of the platform, we may identify areas where refinements or updates are necessary.

Mobile Development Stack:

Category	Details
Mobile Platform	iOS
Programming Language	Swift 5.5
Development Environment	Xcode (latest version)

Backend Services:

Category	Details
Authentication	Amazon Cognito
Database Integration	Amazon RDS (PostgreSQL) or Amazon DynamoDB
Storage	Amazon S3
API Management	Amazon API Gateway

Database:

Category	Details
Database Management System	PostgreSQL 13

Mobile Application Development Tools and Frameworks:

Category	Details
User Interface	UIKit (or SwiftUI, based on design)
User Authentication	Amazon Cognito SDK or OAuth libraries
Push Notifications	Apple Push Notification Services (APNs)

Required Packages and Libraries:

Package/Library	Purpose
Alamofire	Simplifies networking tasks and API communication
Charts	Provides customizable charts and graphs for data visualization
Amazon Cognito SDK	Facilitates user authentication and authorization
AWS SDK for iOS	Provides libraries for integrating with AWS services
UserNotifications	Manages push notifications and user alerts

Prerequisites

Before beginning, make sure to have the following prerequisites:

- A Mac computer running macOS (required for iOS development)
- Xcode: The integrated development environment (IDE) for iOS app development. Download Link: <https://developer.apple.com/xcode/resources/>

Steps to Set Up the Development Environment

1. Xcode Installation

Xcode serves as an essential tool for iOS app development. Users can obtain it from the Mac App Store or the Apple Developer website. After downloading, ensure installation and maintain the latest version for optimal performance.

2. Swift Language

Swift, the Apple-developed language for iOS app creation, comes integrated with Xcode. There's no separate installation required, streamlining the development process.

3. Git for Version Control

Git stands as a crucial version control solution for efficient collaboration and code management. If not already present, users should install Git to facilitate seamless team interactions.

4. Apple Developer Account

An Apple Developer account becomes essential for testing and deploying apps on real iOS devices and the App Store. For those without an account, enrollment in the Apple Developer Program is necessary.

5. Simulator and Device Testing

Xcode incorporates an in-built iOS simulator, enabling app testing across diverse device setups. Additionally, developers can assess apps on physical iOS devices connected to their Macs. The setup of provisioning profiles and certificates within Xcode facilitates device testing.

6. IDE Customization

Customize Xcode preferences to align with personal choices. Tweaking settings like code formatting, keyboard shortcuts, and editor themes enhances the overall development experience.

7. Project Organization

Maintain a structured project layout for enhanced clarity. Segregate app components into distinct folders, such as views, models, controllers, and resources. This systematic arrangement simplifies code management and scalability as the project evolves.

Meetings

Client Meeting

Date 11/08/2023

Attendees

- AQ-redback Team
- Client
- Supervisor

Times

Friday 11 August 12:00 pm - 1:00 pm

Questions Prepared

Redback First Client Meeting Questions

1. Are we going to convert the web application to an Android app or iOS app?
2. What are the core functionalities of this application?
3. Is the application a to B or C application? If it is a to C app, what are the user personas?
4. What are some current user pain points you would like us to resolve?
5. Do we need to build the mobile application from scratch or do we have some code base to start with?
6. What are some prior knowledge we should acquire before starting the project? Eg. technical tools and coding language
7. Do we need to hit the ground running or do we have some time to familiarize ourselves with the new tools and coding languages (swift?)
8. How do we use AWS as we need our user account?
9. Do you prefer us to do a risk analysis or not? (Optional)
10. How do we contact the IT support team?
11. Do we need Microsoft Teams?
12. On which frequency and on which day of the week would you like us to schedule a meeting with you?

Goals

1. Understand the Current Project Background
2. Understand the Future Needs of Clients

Discussion Details

Time	Item	Decision
5 mins	Team members and clients introduce	Introduce the team product owner, scrum master and team members.
25 mins	Client Backgrounds	Product backgrounds: AquaTerra provides a simple and cost-effective online platform to improve farming operations based on soil moisture and temperature data, amongst other parameters. Obtain permission to enter the Webapp: Demo
20 mins	Clients' needs and Q&A	Create a mobile app Improve app satisfaction among farm managers Be creative in app development QA Time for projects and design choices

Date 17/08/2023

Attendees

- AQ-redback Team
- Client
- Supervisor

Times

Tuesday 17 August 12:00 pm - 12:40 pm

Questions Prepared

Redback First Client Meeting Questions

1. Firstly, we'd like to mention that our team has collectively decided to focus on developing the iOS mobile application. But we're actually relatively new to this platform and its programming language, Swift. As we dive into learning this new language, we might need a bit of time to get up to speed. If that is okay?

We've also discovered that in order to test the application on iPhones, an Apple developer account is required, which comes at a membership price of \$149 per year. So we would like to know your preference—whether you'd like us to acquire a developer account or if using a virtual machine for testing is enough.

2. We would also love to share the user personas we've crafted and the product backlog we've put together. To see if there are any problems or anything you would like us to change or let us know

3. We also have some questions regarding the irrigation zone feature, we're seeking clarity on its purpose and functionality. Our understanding is that it's used to track information about these zones, but we're curious if it serves any additional purposes beyond that. Is it more like a note-taking feature?

4. We have developed a prototype for the login and register pages. While we're still refining these, we're excited to share our progress with you. Once they're fully complete, we'll be sure to notify you. Please have a look at them and feel free to give any advice.

Goals

1. The team is focused on confirming the focus on iOS development, and whether it is necessary to use Apple developer users and virtual machines in the later stage.
2. The team has completed part of sprint 1, share the user personas and the product backlog, and propose changes.
3. The team has some questions regarding the irrigation zone feature, seeking customers to know its purpose and function.
4. Discuss some improvements and comments on the login interface.

Discussion Details

Time	Item	Decision
5 mins	Developing the iOS mobile application	iOS development uses Swift language tools and currently does not require Apple developer users and virtual machines. Later, when developing the program, we can use an Apple computer for free debugging.
15 mins	Share the user personas and the product backlog	User personas, as users, there may be 5%-10% of aging farmers who do not know how to use mobile phones, so personas mainly discuss young people. Consider their existing technology and their ideas. Product Backlog Clients are more satisfied.
15 mins	Some questions regarding the irrigation zone feature	The function of the irrigation area is solved, showing the complete process, which is mainly used to track and monitor these areas in real-time.
5 mins	Discuss the login interface	The company name is written on the icon, and there is no problem overall. The following link to Client feedback .

Scrum Ceremony

Date 13/08/2023

Attendees

4 team members

Yunqing Yu, Yilin Liu, Bowei Huang and Jiakang Li.

Times

ZOOM, Monday 13th August 8:00 pm - 8:45 pm

Goals

1. Estimate the workload of Sprint 1
2. Assign tasks and works to each team member based on their strength and interests
3. Go through project details together
4. Scrum master sets up Jira and invites team members to collaborate

Discussion Details

Time	Item	Decision
5 mins	Team members go through the meeting minutes of the last client meeting.	Avoid any misunderstanding and confusion, and ensure everyone is on the same page.
25 mins	Login to the AquaTerra web application using demo ID, take a good overview of the existing functionalities	Compiling all the requirements by considering the features of the web application. Anticipating and assessing potential roadblocks and challenges for the upcoming project.
15 mins	Set up Jira and invited all team members in and also assign tasks to each team member	Yunqing Yu and Yilin Liu are responsible for writing and managing all the project-related documents and artefacts. Bowei Huang, Jiakang Li and You Zhou are responsible for setting up the git hub repository and researching the appropriate development environment

Stand-up Meeting

Date 03/08/2023

Attendees

5 team members

Yunqing Yu, Yilin Liu, Bowei Huang, You Zhou and Jiakang Li.

Times

ZOOM Thursday 3 August 3:00 pm - 4:00 pm

Goals

1. Establish team member roles.
2. Knowledge of project background and goals.
3. Check Team members' e-mails and access GitHub.

Discussion Details

Time	Item	Decision
5 mins	Members meet each other	Introduce your own strengths and past experience in learning IT
40 mins	Understand project background and Nominate Product owner and Scrum Master	Create a better way to show our data to customers using a mobile application Nominate Yunqing Yu as Product Owner, and Yilin Liu as Scrum Master.
15 mins	Check each team email and get access to GitHub	The respective mailboxes are confirmed to be correct, and the project documents are created

Date 18/08/2023

Attendees

Supervisor Wei Wang

5 team members Yunqing Yu, Yilin Liu, Bowei Huang, You Zhou and Jiakang Li.

Times

ZOOM Thursday 18 August 4:30 pm - 6:00 pm

Goals

1. Invite supervisor to check current project progress.
2. Modify and improve the sprint1 project.

Discussion Details

Time	Item	Decision
60 mins	The supervisor checks the current project document	<ol style="list-style-type: none">1. Sprint1 is an assessment, changes the directory structure and content, and reads the documents more impressively2. We introduced the basic persona and who they are in general introduction and information, the supervisor expressed his approval and gave suggestions for further, how to research the data and statistics listed to make the content more convincing3. Some important document content titles and subtitles need to be highlighted4. The records and feedback of the re-meeting need to be backed up for future use.5. Add story point to Product Backlog6. Documents are checked against the checklist to ensure that no content is missed.7. Adding to the list of technical needs, the project is built using a powerful combination of frameworks and tools to ensure efficient and scalable development.
30 mins	Improve the Sprint1 document	<p>Yunqing Yu, Yilin Liu added Project Requirements and Project Plan as project owner and scrum master, and checked the documentation work of sprint1.</p> <p>Bowei Huang, as a technology leader, perfects the additional technology required by the project and builds a powerful framework</p> <p>You Zhou completed the story point in the Product Backlog</p> <p>Jiakang Li records the minutes of the meeting and completes all the minutes to add to the document</p>

Meeting note

Meeting Notes with the Client:

1. Firstly, we'd like to mention that our team has collectively decided to focus on developing the iOS mobile application. But we're actually relatively new to this platform and its programming language, Swift. As we dive into learning this new language, we might need a bit of time to get up to speed. If that is okay?

We've also discovered that in order to test the application on iPhones, an Apple developer account is required, which comes at a membership price of \$149 per year. So we would like to know your preference—whether you'd like us to acquire a developer account or if using a virtual machine for testing is enough?

2. We would also love to share the user personas we've crafted and the product backlog we've put together. To see if there are any problems or anything you would like us to change or let us know

3. We also have some questions regarding the irrigation zone feature, we're seeking clarity on its purpose and functionality. Our understanding is that it's used to track information about these zones, but we're curious if it serves any additional purposes beyond that. Is it more like a note-taking feature?

4. We have developed a prototype for the login and register pages. While we're still refining these, we're excited to share our progress with you. Once they're fully complete, we'll be sure to notify you. Please have a look at them and feel free to give any advice.

Project Plan

Sprint 2 (18/08/2023 - 22/09/2023)

Sprint 3 (22/09/2023 - 20/10/2023)

Sprint 2 (18/08/2023 - 22/09/2023)

Subject to Change

This page presents a draft plan and user story mapping for Sprint 2. Finalized version will be discussed and created in the corresponding Sprint planning meeting.

Note: The story points for user stories are measured by estimating the overall effort that will be required to fully implement them instead of calculating the days spent on each task.

Status: IN PROGRESS COMPLETED DELAYED ABORTED

Epic	User Story ID	Sprint Backlog User Story	Story Points
As an app user, I want data visualisation and clear navigation , so that I have a good experience using the app.	US001	As an app user, I want to have an informative dashboard home page, so that I can choose to see my field's conditions straight away.	5
	US002	As an elder user, I want to have a friendly interface with clear visuals and large buttons to easily get to each page so that I do not get lost in navigation.	3
As an app user, I want to register sensors into the farm remotely using the app so that it can be more convenient for me.	US006	As an app user, I want to register Gateways, so that I can allow my sensors to connect to them later.	3
	US007	As an app user, I want to delete Gateways, so that I can remove unused Gateway resources.	2
	US008	As an app user, I want to register new farms and fields, so that I can later select those fields I want my sensors installed.	3
	US009	As an app user, I want to delete farms or fields, so that I can remove those fields that are mistakenly registered or no longer need sensors.	2
	US010	As an app user, I want to register Version 1 physical sensors with selected fields, so that I can later check my field's data from the paired sensor.	3
As an app user, I want to manage sensors remotely using the app so that it can be convenient for me.	US012	As an app user, I want to create new Version 2 sensors in fields, so that I can expand my monitoring capabilities.	2
	US013	As an app user, I want to view and edit existing sensors, so that I can manage sensor details as needed.	2
As an app user, I want a place to do user registration so that I can use more features of the tool.	US021	As an app user, I want to have a log out option, so that I can quit this app safely.	1
	US022	As an app user, I want to have an initial log-in page, so that I can log in to my account.	2

JIRA KANBAN Board

Link: <https://aqreadback.atlassian.net/jira/software/projects/KAN/boards/1>

Jira Software Your work Projects Filters Dashboards Teams Apps Discover products Create

Projects / AQ_Redback KANBAN board

UPGRADE

PLANNING Timeline Board

DEVELOPMENT Code Project pages AQ_Redback_code... Add shortcut Project settings

You're on the Free plan

GROUP BY None Insights

BACKLOG 23

- US001: As an app user I want to have an informative dashboard home page, so that I can choose to see my field's conditions straight away. (KAN-15)
- US002: As an elder user I want to have a friendly interface with clear visuals and large buttons to easily get to each page, so that I do not get lost in navigation. (KAN-16)
- US003: As an app user I want to have important data highlighted/enlarged on the dashboard, so that I can see the most useful data at the first glance. (KAN-17)
- US004: As an app user, i want to view Weather prediction, so that I can anticipate weather conditions for better planning. (KAN-27)

MILESTONE BACKLOG (SPRINT 1)

TO DO 2

- [S1] Digital Prototype (KAN-2)
- [S1] Create High Fidelity Prototype for the Project (KAN-12)

+ Create issue

IN PROGRESS 2

- [S1] Work on Confluence Space (KAN-14)

IN REVIEW 2

- [S1] Motivational Model (KAN-10)
- [S1] Create User Stories for the Project (KAN-13)

SPRINT 1 - DONE

You're in a team-managed project Learn more

Sprint 3 (22/09/2023 - 20/10/2023)

Subject to Change

This page presents a draft plan and user story mapping for Sprint 3. Finalized version will be discussed and created in the corresponding Sprint planning meeting.

Note: The story points for user stories are measured by estimating the overall effort that will be required to fully implement them instead of calculating the days spent on each task.

Status: IN PROGRESS COMPLETED DELAYED ABORTED

Epic	User Story ID	Sprint Backlog User Story	Story Points
As an app user, I want data visualisation and clear navigation , so that I have a good experience using the app.	US003	As an app user, I want to have important data highlighted/ enlarged on the dashboard so that I can see the most useful data at first glance.	2
	US004	As an app user, I want to view Weather prediction, so that I can anticipate weather conditions for better planning.	3
	US005	As an app user, I want to see details of each sensor, so that I can access specific sensor information for monitoring.	3
As an app user, I want to manage sensors remotely using the app so that it can be convenient for me.	US011	As an app user, I want to download the report of data from my dashboard, so that I can conduct data analysis to discover trends and make more informed decisions about farm management.	3
	US014	As an app user, I want to delete sensors from the field, so that I can remove sensors no longer needed.	2
	US015	As an app user, I want to have customized alerts, so that I can take immediate action whenever needed.	3
As an app user, I want to manage my irrigation zones remotely using the app so that it can be convenient for me.	US016	As an app user, I want to create new irrigation zones, so that I can efficiently manage water distribution.	2
	US017	As an app user, I want to view and edit existing irrigation zones, so that I can adjust irrigation parameters as needed.	2
	US018	As an app user, I want to delete irrigation zones, so that I can remove unnecessary irrigation zones.	2
As an app user, I want a place to do user registration so that I can use more features of the tool.	US019	As an app user, I want to change my password, so that I can allow myself to be registered.	2
	US020	As an app user, I want to edit my profile, so that I can customize my profile.	2

JIRA KANBAN Board

Link: <https://aqreadback.atlassian.net/jira/software/projects/KAN/boards/1>

Project Requirements

User Persona

Product Backlog

Prototypes

Project Goal

User Persona

Initial communication with clients

Following our group meeting with the client, it was explicitly communicated that the AquaTerra mobile app is intended for **farmers**. This application serves as a complementary tool to the sensor hardware, aiding farmers in monitoring crucial indicators like moisture levels and precipitation variations.

Updated - 18/08/2023

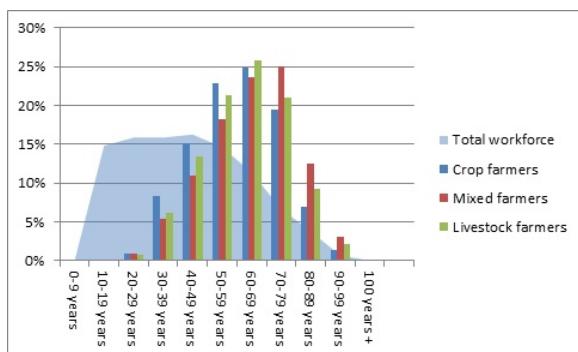
The client has expressed contentment with the user persona that has been developed. In particular, the client holds the view that the persona of the young farmer, Dave Smith, is notably accurate and thorough in its representation. However, when it comes to the persona of the older farmer, Samuel Bundarra, the client has raised a valuable point. The client has pointed out that a subset of the older farmer demographic might face challenges in downloading applications, thus constituting approximately 10% of the entire user base. Despite this observation, the client maintains a positive outlook on the personas, deeming them accurate and detailed.

Client Meeting Minutes - Date 17/08/2023

Research on farmer demographics

Based on our study of Australian farmers' demographics and insights from Australian farm institutes, our findings align with recent research by Deloitte Australia. Their report on agriculture emphasises the challenge of an aging farmer population. The average age of Australian farmers is 52, which is 12 years older than the national average for other jobs.

This aging trend is expected to lead to more farmers retiring soon, which could result in a shortage of skilled farmers. To address this, around \$400 billion may be needed for the transition of farm ownership to new individuals. This investment aims to ensure that younger farmers take over the farms and continue agricultural practices.



Reference: <https://www.farminstitute.org.au/farmers-are-getting-older-but-its-not-a-problem/>

According to this information, our team believes that there are two typical types of farmers our mobile application is going to serve:

- **The Aging Generation** This segment comprises older farmers who have accumulated years of experience and knowledge in the field. As they approach retirement, they can utilize the AquaTerra mobile app to facilitate a smoother transition of their farming operations.
- **The New Generation** With the aging demographic in mind, the new generation of farmers will be crucial in sustaining the future of Australian agriculture. These younger farmers will leverage the app's user-friendly interface to gain insights into farming. Equipped with this data, they can make informed decisions and apply their innovative approaches to farming practices.

Therefore, the following 2 user personas are made:



Dave Smith's persona _ PersonaGenerator.pdf



Samuel Bundarra's persona _ PersonaGenerator.pdf

Product Backlog

Client Feedback

This page was reviewed by the client during the client meeting. The client was overall satisfied with the product backlog. However, it is imperative to highlight that the client has a query regarding EP05 (User Registration). Currently, they undertake manual user registration upon sensor purchases, sending over usernames and passwords to users for them to login. A point of consideration is whether users should autonomously create accounts for the mobile application. To clarify this aspect, consultation with their own development team is needed. Once confirmation is received from the client, a copy of this backlog will be sent to the client for further review.

Client Meeting - 2023/08/17

The epics/feature-level user stories are split into four sections: **data visualisation clear navigation; registering sensors into the farm remotely; managing sensors remotely; managing irrigation zones remotely; user registration**, which leads to the product backlog in the below table.

Note: The story points for user stories are measured by estimating the overall effort that will be required to fully implement them instead of calculating the days spent on each task.

To complete the Product Backlog would require a total of 56 Story Points.

Epic ID	Epic	User Story ID	As	I Want To	So That	Size Estimation	MoSCoW Priority	Justification	Story Point
EP01	As an app user, I want data visualisation and clear navigation , so that I have a good experience using the app.	US001	Dave (Young Farmer & Existing User)	Have an informative dashboard home page.	I can choose to see my field's conditions straight away.	Large	Must Have	<i>Size estimation:</i> It contains a lot of information and is connected to other pages. <i>MoSCoW priority:</i> The dashboard should be the home page as it matches the original web app.	5
		US002	Samuel (Elder Farmer & New User)	Have a friendly interface with clear visuals and large buttons to easily get to each page.	I do not get lost in navigation.	Medium	Should Have	<i>Size estimation:</i> Have to design each page's layout. <i>MoSCoW priority:</i> Important as we need to consider elder farmers who do not often use mobile apps.	3
		US003	Dave (Young Farmer & Existing User)	Have important data highlighted/enlarged on the dashboard.	I can see the most useful data at the first glance.	Small	Should Have	<i>Size estimation:</i> Simply change the font or color of the temperature and moisture data. <i>MoSCoW priority:</i> This was mentioned to be a user pain point on the original web app.	2
		US004	Dave (Young Farmer & Existing User)	View Weather prediction	I can anticipate weather conditions for better planning.	Medium	Must Have	<i>Size estimation:</i> Incorporating weather data integration and display. <i>MoSCoW priority:</i> Part of original web app features.	3
		US005	Samuel (Elder Farmer & New User)	See details of each sensor	I can access specific sensor information for monitoring.	Medium	Must Have	<i>Size estimation:</i> Developing 'view details' functionality. <i>MoSCoW priority:</i> Part of original web app features.	3

EP02	As an app user, I want to register sensors into farm remotely using the app so that it can be more convenient for me.	<i>US006</i>	Dave (Young Farmer & Existing User)	Register Gateways.	I can allow my sensors to connect to them later.	Medium	Must Have	<i>Size estimation:</i> Developing gateway registration logic. <i>MoSCoW priority:</i> Essential for sensor connectivity.	3
		<i>US007</i>	Dave (Young Farmer & Existing User)	Delete Gateways.	I can remove unused Gateway resources.	Small	Must Have	<i>Size estimation:</i> Implementing gateway deletion functionality. <i>MoSCoW priority:</i> Ensures proper resource management.	2
		<i>US008</i>	Dave (Young Farmer & Existing User)	Register new farms and fields.	I can later select those fields I want my sensors installed.	Medium	Must Have	<i>Size estimation:</i> Developing farm and field registration logic. <i>MoSCoW priority:</i> Essential for proper setup.	3
		<i>US009</i>	Dave (Young Farmer & Existing User)	Delete farms or fields	I can remove those fields that are mistakenly registered or no longer need sensors.	Small	Must Have	<i>Size estimation:</i> Implementing farm and field deletion functionality. <i>MoSCoW priority:</i> Enhances usability and resource management.	2
		<i>US010</i>	Dave (Young Farmer & Existing User)	Register Version 1 physical sensors with selected fields.	I can later check my field's data from the paired sensor.	Medium	Must Have	<i>Size estimation:</i> Developing sensor registration logic. <i>MoSCoW priority:</i> Essential for proper data monitoring.	3
		<i>US011</i>	Dave (Young Farmer & Existing User)	Download the report of data from my dashboard.	I can conduct data analysis to discover trends and make more informed decisions about farm management.	Medium	Must Have	<i>Size estimation:</i> Managing exported report format may require effort. <i>MoSCoW priority:</i> This was part of the original web app features.	3
EP03	As an app user, I want to manage sensors remotely using the app so that it can be convenient for me.	<i>US012</i>	Samuel (Elder Farmer & New User)	Create new Version 2 sensors in fields.	I can expand my monitoring capabilities.	Small	Must Have	<i>Size estimation:</i> Developing sensor creation functionality. <i>MoSCoW priority:</i> This was part of the original web app features.	2
		<i>US013</i>	Samuel (Elder Farmer & New User)	View and edit existing sensors.	I can manage sensor details as needed.	Small	Must Have	<i>Size estimation:</i> Developing sensor editing functionality. <i>MoSCoW priority:</i> This was part of the original web app features.	2
		<i>US014</i>	Samuel (Elder Farmer & New User)	Delete sensors from the field.	I can remove sensors no longer needed.	Small	Must Have	<i>Size estimation:</i> Implementing sensor deletion functionality. <i>MoSCoW priority:</i> This was part of the original web app features.	2

		<i>US015</i>	Samuel (Elder Farmer & New User)	Have customized alerts (battery, moisture, temperature etc.).	I can take immediate action whenever needed.	Medium	Must Have	<i>Size estimation:</i> Need to connect with the AWS service and database. <i>MoSCoW priority:</i> This was required by the client and is considered to be a key feature in the app.	3
EP04	As an app user, I want to manage irrigation zones remotely using the app so that it can be convenient for me.	<i>US016</i>	Dave (Young Farmer & Existing User)	Create new irrigation zones.	I can efficiently manage water distribution.	Small	Must Have	<i>Size estimation:</i> Developing irrigation zone creation logic. <i>MoSCoW priority:</i> This was part of the original web app features.	2
		<i>US017</i>	Dave (Young Farmer & Existing User)	View and Edit existing irrigation zones.	I can adjust irrigation parameters as needed.	Small	Must Have	<i>Size estimation:</i> Developing irrigation zone editing functionality. <i>MoSCoW priority:</i> This was part of the original web app features.	2
		<i>US018</i>	Dave (Young Farmer & Existing User)	Delete irrigation zones.	I can remove unnecessary irrigation zones.	Small	Must Have	<i>Size estimation:</i> Implementing irrigation zone deletion functionality. <i>MoSCoW priority:</i> This was part of the original web app features.	2
EP05	As an app user, I want a place to do user registration so that I can use more features of the tool.	<i>US019</i>	Dave (Young Farmer & Existing User)	Change my password.	I can allow myself to be registered.	Small	Must Have	<i>Size estimation:</i> Need to connect with the database. <i>MoSCoW priority:</i> Only registered users can access the dashboard and all features.	2
		<i>US020</i>	Dave (Young Farmer & Existing User)	I want to edit my profile	I can customize my profile.	Small	Should Have	<i>Size estimation:</i> Need to connect with a database to store the information. <i>MoSCoW priority:</i> This is part of the original web app features.	2
		<i>US021</i>	Dave (Young Farmer & Existing User)	Have a log-out option.	I can quit this app safely.	Small	Must Have	<i>Size estimation:</i> A simple feature to log the user out of the app. <i>MoSCoW priority:</i> This is part of the original web app features.	1
		<i>US022</i>	Dave (Young Farmer & Existing User)	Have an initial log-in page	I can log in to my account.	Small	Must Have	<i>Size estimation:</i> A simple feature to log the user out of the app. <i>MoSCoW priority:</i> This is part of the original web app features.	2

Prototypes

Subject to change

The current prototype includes the user login and reset password page. The rest of the pages (e.g. Dashboard) will be added in later development phases according to the status of the project progress.

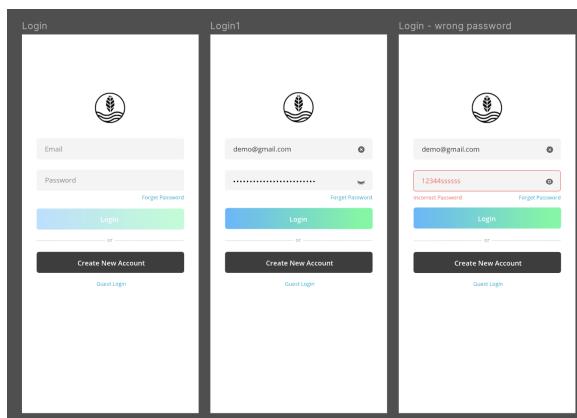
[Link to Prototypes](#)

Client Feedback

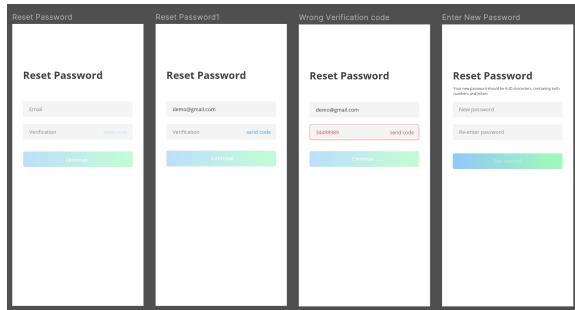
The client has evaluated the initial design in a recent meeting and expressed contentment with the present design of the user login pages. No additional feedback was provided regarding the colour or font selections. During the discussion, it was noted that the client prefers the company name positioned above the company icon instead of having the icon solely on the page. Additionally, they expressed interest in incorporating farm imagery into the background, akin to their web application.

Client Meeting - Date 17/08/2023

User Login Page



Reset Password Page



Project Goal

★ Mobile Application Development

Design and develop a user-friendly mobile application to empower farmers to effectively manage and monitor sensor data from their farm fields. The application will provide a convenient platform for accessing real-time and historical data related to soil moisture, moisture depth, soil temperature, evaporation, and precipitation variations captured by the sensors.

★ Transition from Web to Mobile

Successfully migrate features from the existing Aquaterra web platform to the mobile application. This transition should maintain core feature consistency while optimizing the user experience for mobile devices.

★ Comprehensive Data Monitoring

To enable farmers to have a comprehensive view of their farm's status by offering insights into critical parameters. Farmers should be able to track fluctuations in moisture levels and temperature, allowing for timely adjustments in irrigation and other farming practices.

★ Enhanced Data Representation

To present sensor data in a visually appealing and understandable manner. The mobile application will utilize graphs, charts, and intuitive interfaces to convey complex data trends and patterns, enabling farmers to make informed decisions based on the information at hand.

★ Real-time Notifications

To provide a mechanism for sending real-time notifications and alerts to farmers. Alerts can be triggered by specific conditions such as sudden changes in moisture levels, extreme temperatures, or other parameters that may impact crop health. This feature ensures that farmers can respond promptly to emerging challenges.

Do-Be-Feel List

Who	Do	Be	Feel
Team AQ Redback	Develop <ul style="list-style-type: none">Seamless data integration from the web platform.<ul style="list-style-type: none">Continuously communicate and updateInnovate to enhance user experienceDevelop and migrate mobile app features	Reliable Efficient Responsible	Empowered
Farmers (Users)	Use <ul style="list-style-type: none">Collaborate to define project goals and prioritiesProvide access to existing web platform featuresShare domain knowledge about user requirements.	Responsive Helpful	Supported
AquaTerra Group	Access <ul style="list-style-type: none">Provide feedback and suggestionsUse the mobile application to monitor and manage farm	Effective	Innovated

Motivational Model

