

Learning Reflection

R0328: Modelling of Digital Service

MDS_Team3

UrbanFarming-IOT

13.04.2022

UrbanFarming-IOT



UrbanFarming-IoT is a mobile application and a service that offers a way to monitor and take care of customers' plants. It will make it easier for the customer to see how healthy the plants are - what is the water level, acidity etc.

Main part of the product would be an app that also has IOT sensors connected to it by Bluetooth/WLAN to track the data. And the ability to pair multiple sensors and devices together under a single application.

A very important focus is the ease of use and the displaying of data in an attractive manner.

Project overview



The product:

UrbanFarming-IOT is a smart garden mobile application, which gives the user data from the garden's sensors aimed at people who are interested in trying their hand at high tech gardening.



Project duration:

About 135 hours in total per person.

A screenshot of a mobile application interface for 'UrbanGarden-IoT'. The top header is dark teal with a white back arrow, the text 'UrbanGarden-IoT', and a white hamburger menu icon. The main content area is light teal and features the 'UrbanGarden' logo (a green monstera leaf above the text 'UrbanGarden'). Below the logo, it says 'Welcome to UrbanGarden' and 'Please type in your email and password to login.' There are two white input fields with dark borders, labeled 'E-mail' and 'Password'. Below these is a dark teal 'Login' button. Under the button, there are two links: 'Create a new account here!' and 'Forget your password?'. The bottom navigation bar is dark teal and contains four white buttons labeled 'Dashboard', 'Plants', 'Support', and 'User Profile'.

Project overview



The problem:

- Smart gardens are still quite unknown as a hobby and we'd like to change that.
- Setting up your garden can be quite a hassle. Due to the knowledge needed.
- Smart garden applications can still be pretty hard to understand & use.



The goal:

- A smart garden application on a mobile platform to make this more approachable to your average person.
- A smart garden application that is easy to understand & use.

Project overview

Siim Laineste



My role:

We didn't have clear roles for the project, but I did look at the problems from a developers viewpoint.



Responsibilities:

We shared the workload in our team as evenly as possible. So each of us had a hand in everything.

Project overview

Jackson Wilken



My role:

Although no there were no clearly defined roles, cohesively we all took part in achieving our goal, which I played a key role in.



Responsibilities:

Wireframing, coordinating with other team members to produce our outcome, prototyping and researching.

- Jackson Wilken

Project overview

Ida Bragge



My role:

Our team did not have clear roles on this project but I have been the unofficial project manager here.



Responsibilities:

I have organized the meetings, given tasks to other group members and also been responsible for most of the designing work like logos and photographs in addition to taking part on each assignment with the team.

-Ida Vilhelmiina

Project overview

Matias Laukka



My role:

I can't say that our group had a clear role divide on this project. I was focused on whatever happened to be important at the moment.



Responsibilities:

I worked on multiple things. If I had to pinpoint a couple responsibilities, I'd mention user research, personas, user journey maps, and generating text for presentations.

Understanding the user

- User research
- Personas
- User Stories

User research: summary



Our research for this project was somewhat limited.

It mostly consisted of general research in the area of smart gardening, UI/UX Design and mobile application design. Personas and user journey maps were constructed based on the overall knowledge of the field and its customers that we accumulated during this initial research phase.

Our research definitely did change how we saw the average smart garden user – almost anyone could have a little more green in their lives and this is a booming field right now.

Persona: Juuso

Problem statement:

Juuso is a lover of exotic plants who needs information on foreign flora because of the lack of information online.

LAU
REA



Name:

Juuso

Age:

42

Occupation:

IT Project Manager

Bio

Juuso is a 42-year-old project manager at a large multinational technology corporation working on their latest hardware project: a smart garden –type of hardware solution for sale in both retail and B2B situations. He enjoys his work, and it pays well enough for him to do what he loves – travel.

Juuso is married and has two kids who are in elementary school. He loves to travel the world with his family, and this has instilled a love for foreign plants and flowers in him. Unfortunately, most smart gardens don't have much information about how to grow them.

Goals

- To be successful at his job.
- To find a suitable software for his company's smart garden to cut costs.
- To find a software solution that is compatible with their hardware.

Frustrations

- A lot of the possible third-party software solutions are incompatible with their hardware.
- A lot of possible third-party software don't offer easy-to-find knowledge about how to grow foreign plants.

Solutions

- Offer wide cross platform compatibility with different kinds of smart garden hardware.
- Offer a wide variety of information on how to grow almost any type of plant, local or foreign.
- Offer this knowledge in a way that is easy to find right when you're planting your seeds.

Persona: Elsa

Problem statement:

Elsa need a way to synchronize her busy lifestyle with gardening and getting better results with it easily at home.



Name

Elsa

Age:

29

Occupation:

Sales manager

“Life is what happens while you are busy making other plans.”-John Lennon. And Elsa agrees.

Goals

- To be able to keep up with her gardening and synchronize that with her busy lifestyle
- To get better results in home gardening

Frustrations

- To find mobile app that's scalable for home gardening as well and not only for industrialized use
- To find an app which also offers information about how to grow the plants instead of just offering pure statistic data on their growth.

Solutions

- Offer app in private person/ home gardening and industrialized versions
- Offer information about the plants and growing plans to the user
- Make the information easy to find in the app

User Functionality or Features

1

Creating an account / Logging in

Creating a new account and logging in later helps the user retain their personal smart garden information regardless of where they are in the world.

Maybe we should add Google / Facebook login?

2

Add / Remove Sensors

This functionality allows the user to dynamically add or remove sensors from the smart garden application. Our goal is to make it as easy as possible to go with a custom set of sensors.

3

Plant automation

Plant automation is one of the key functionalities of smart gardens. Our goal is to make plant automation something that's easy to modify on the fly. You can also turn earlier automations on or off according to your needs.

4

Plant information

This is one of the more open questions in our design at the moment. What is the best way to convey information about how to grow your plant? Should we link this to automation?

User Stories

1

Persona

As a User I want to Have an overview of my plants' health readings so that I can make an educated adjustment to my plants well-being.

2

Persona

As a User I want to easily connect my sensors to my application so that I can easily start monitoring the plants.

3

Persona

As a User I want the application to teach me how to take care of my plant in an easy-to-understand way so I can keep it healthy and growing.

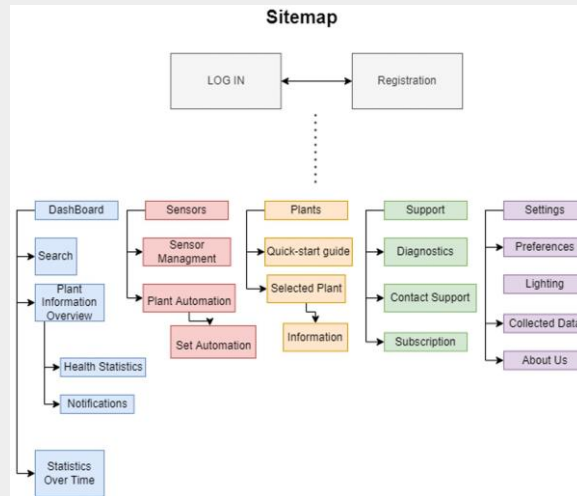
4

Persona

As a User I want to add sensors to my application in a structured manner so I can have a good overview on which sensors belong to which soil bed.

Wireframes

In our wireframes we wanted to clearly but with simple elements to define our application, what requirements it should have and how the application would roughly look like. We went through some mobile apps that looked good and clear to us and tried to make our application wireframes to match.



Our site map and login page

Urban Garden

Logo

Welcome to Urban Garden

Digital wireframes

We wanted to have clear look on our application and the logo on the top of the page and all the details underneath that

The wireframe shows a vertical layout. At the top is a dark grey header with the text 'Urban Garden'. Below this is a light grey rectangular box labeled 'Logo'. Under the logo is the text 'Create a new account'. This is followed by three input fields: the first is labeled 'E-mail', and the next two are both labeled 'Password'. Below the input fields is a grey button labeled 'Create a new account', and underneath that is the text 'Forgot your password?'. At the bottom is a dark grey footer containing four white rounded rectangular buttons labeled 'Suggestions', an empty box, 'Support', and 'User Profile'. A yellow arrow points from the text 'We wanted to have clear look on our application and the logo on the top of the page and all the details underneath that' to the 'Logo' box. Another yellow arrow points from the text 'Quick menu on the footer for easy navigation' to the footer area.

Urban Garden

Logo

Create a new account

E-mail

Password

Password

Create a new account

Forgot your password?

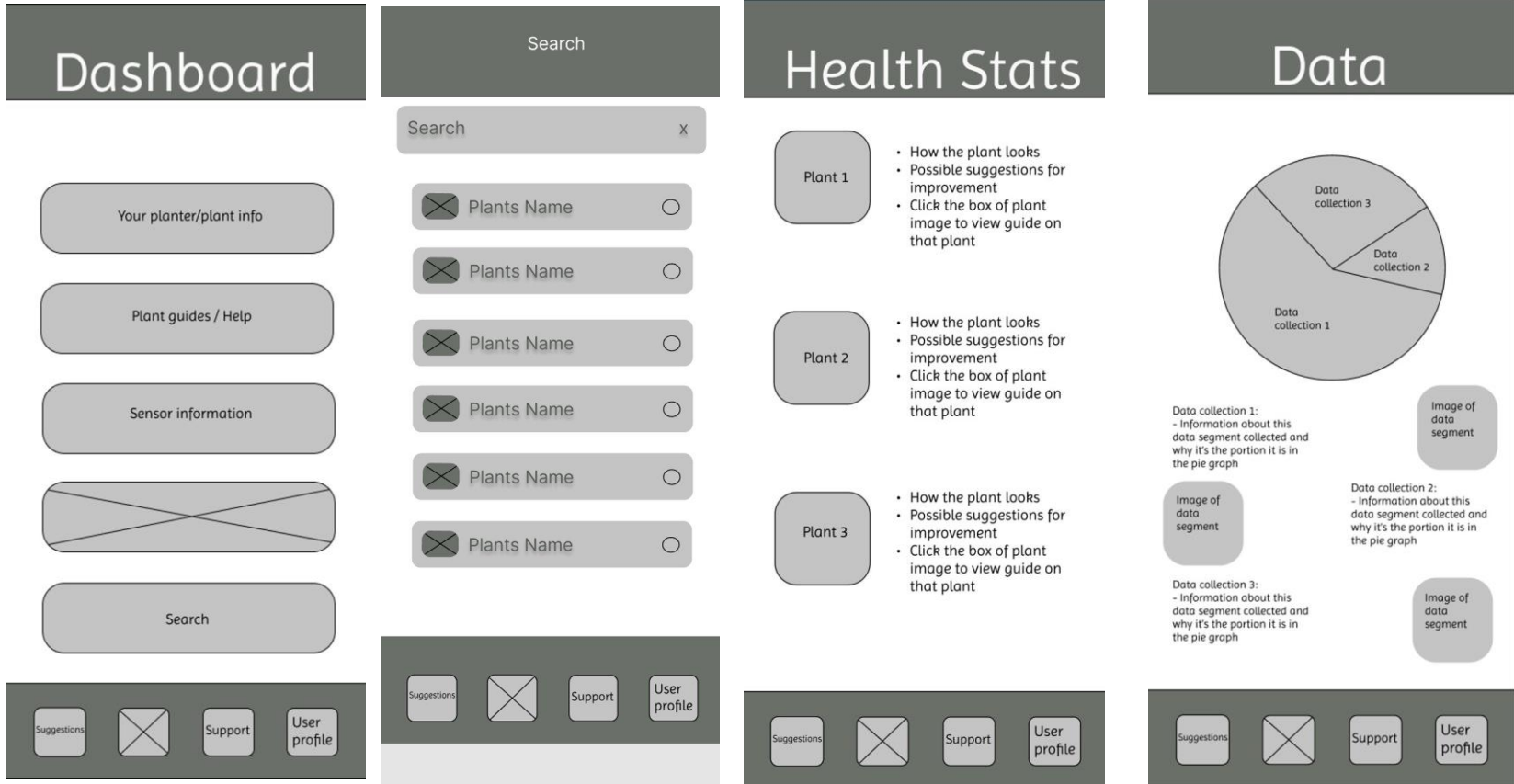
Suggestions

Support

User Profile

Quick menu on the footer for easy navigation

Digital wireframes



Digital wireframes

Subscription

Subscription package 1
5,99€
p/m

Subscription package 2
11,99€
p/m

Subscription package 3
19,99€
p/m

- When you hover over each subscription bundle, information appears here as to what is offered compared to the bundle previous/after.

Notifications

May 5

- Don't forget to water your 'Basil' ☒

May 7

- Your coriander needs attention :! ☐

Yesterday

- You added 'Rosemary' to the planter! ☐

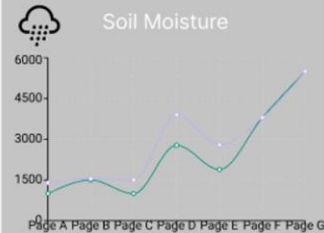
Today

- Remember to check all plants, we're thirsty! ☐

Today

- Congratulate your friend on their first harvest! ☐

Plants Information Over Time



Plants

Logo

Quick-start
guide

Information

Suggestions



Support

User
profile

Suggestions



Support

User
profile

Suggestions



Support

User
profile

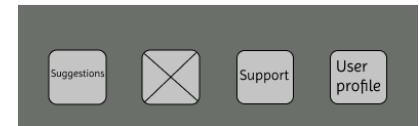
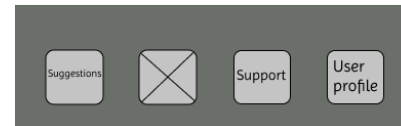
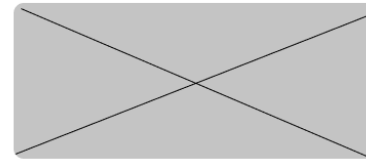
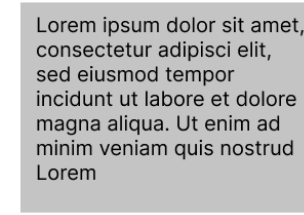
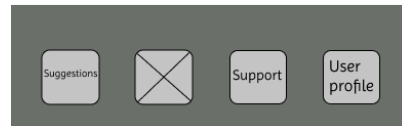
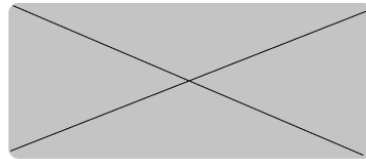
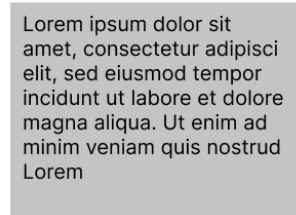
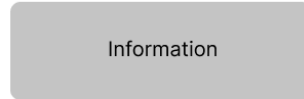
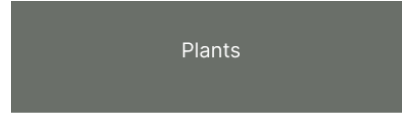
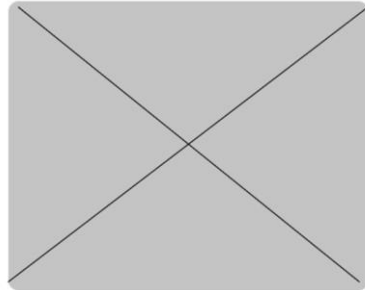
Suggestions



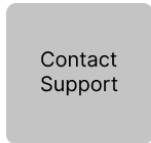
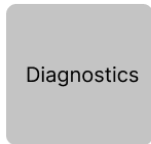
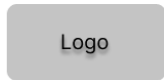
Support

User
profile

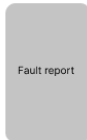
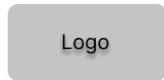
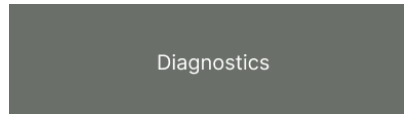
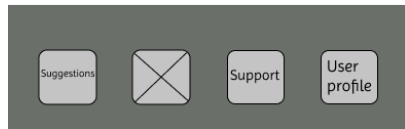
Digital wireframes



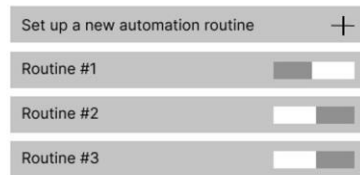
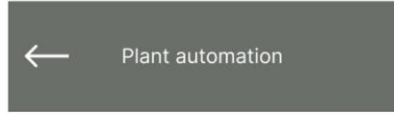
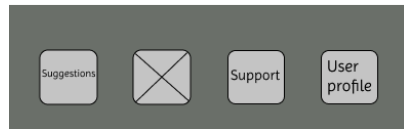
Digital wireframes



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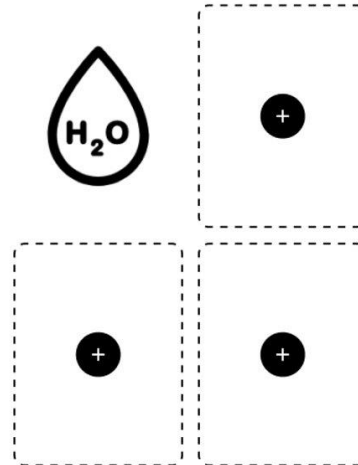
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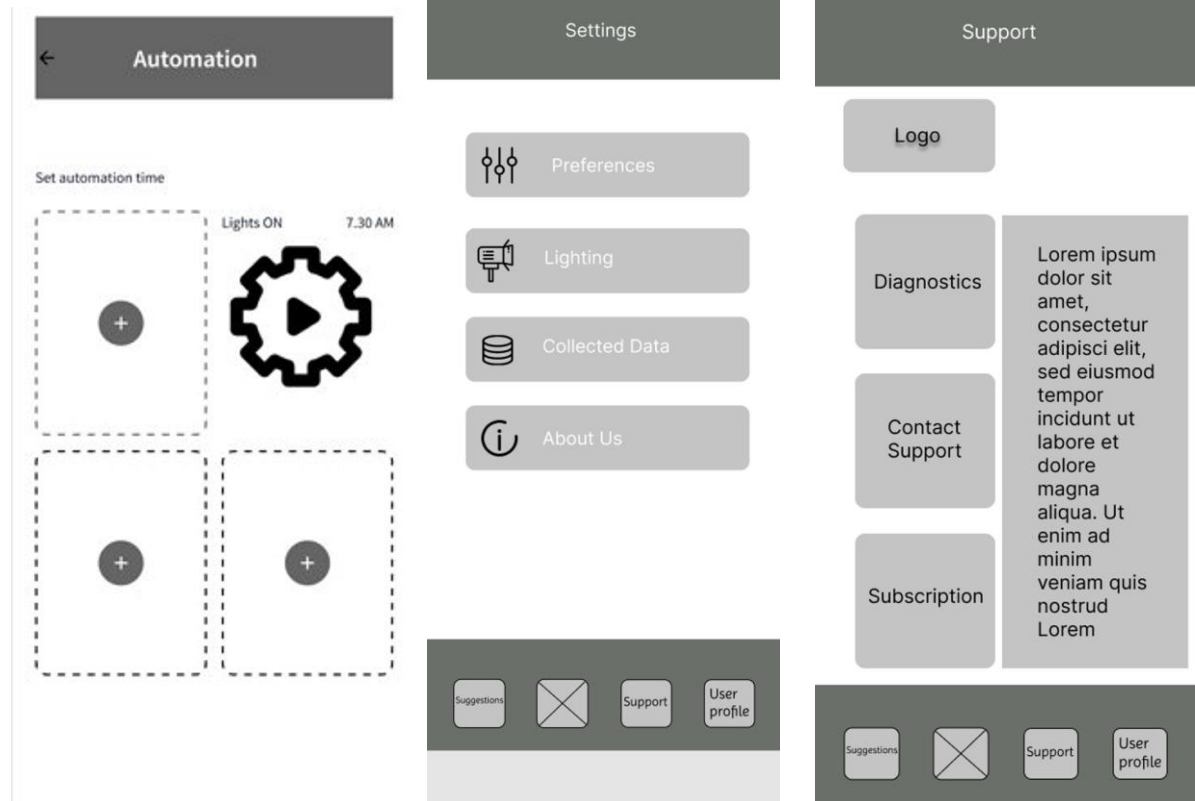
Add your sensors



Automation



Digital wireframes



Digital wireframes

[←](#) **Contact support**

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Contact support

Please leave your email and describe the problem

Submit your ticket

[Check out the FAQ](#)

[Suggestions](#)

[Support](#)

[User Profile](#)

Diagnostics

[Logo](#)

[Fault report](#)

[Updates](#)

[Downloads](#)

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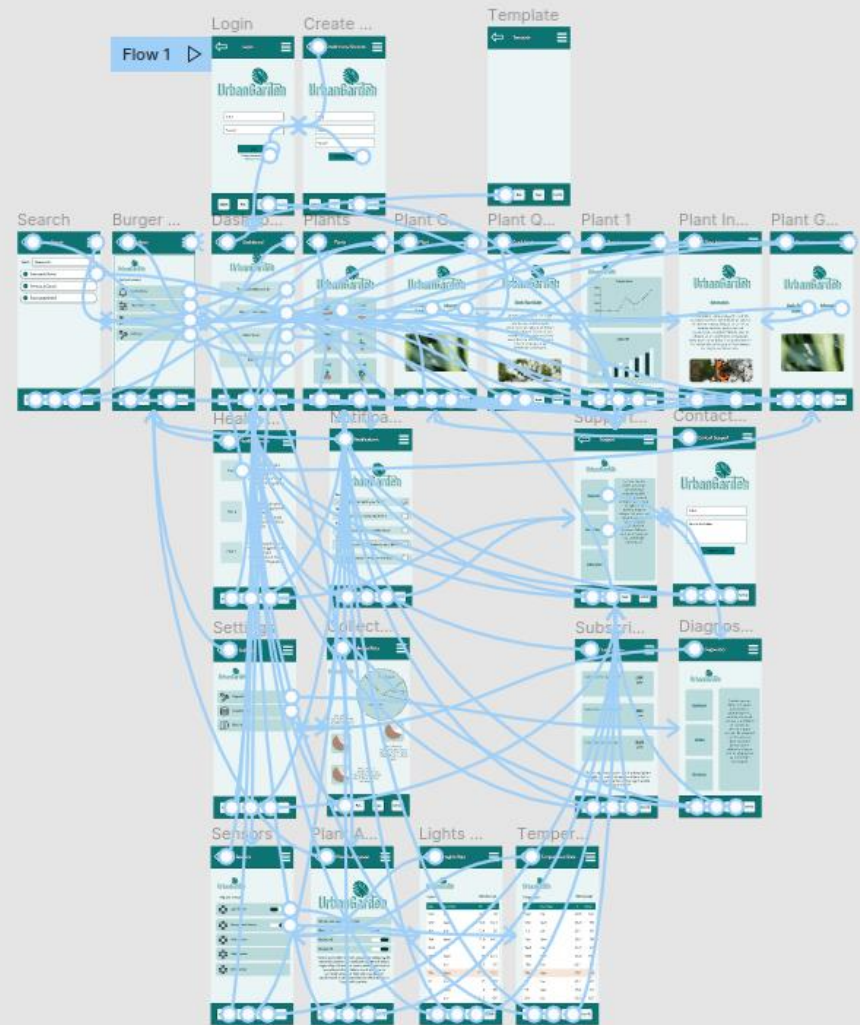
[Suggestions](#)

[Support](#)



[User profile](#)


High-fidelity prototype

UrbanFarming Prototype –
Figma



Prototype Main pages

 UrbanGarden-IoT 



Welcome to UrbanGarden

Please type in your email and password to login.

Login

Create a new account here!
Forgot your password?

Dashboard

Plants

Support

User Profile

 Plant automation 



Set up a new automation routine

Routine #1

☐

Routine #2

☐

Routine #3

☐

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Dashboard

Plants

Support

User profile

 Contact support 



Contact support

Please leave your email and describe the problem



Submit your ticket


Check out the FAQ

Suggestions

Support

User Profile

 Create a new account 



Create a new account

Please, type in your e-mail and password to create a new account.

Create a new account!

Need help?

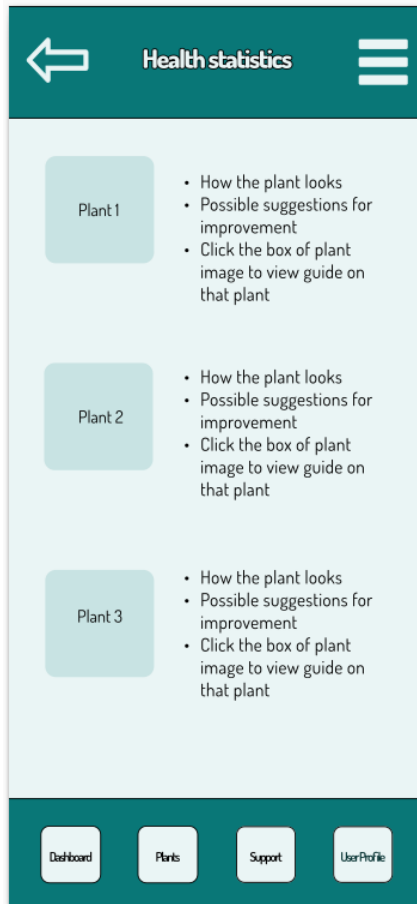
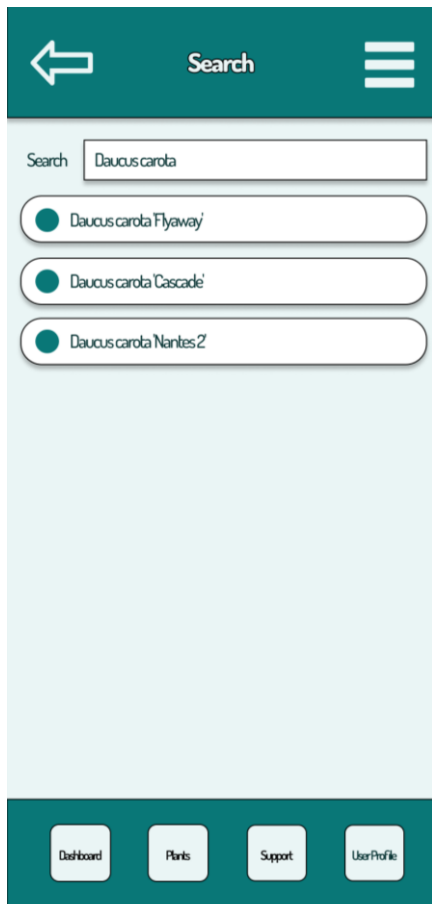
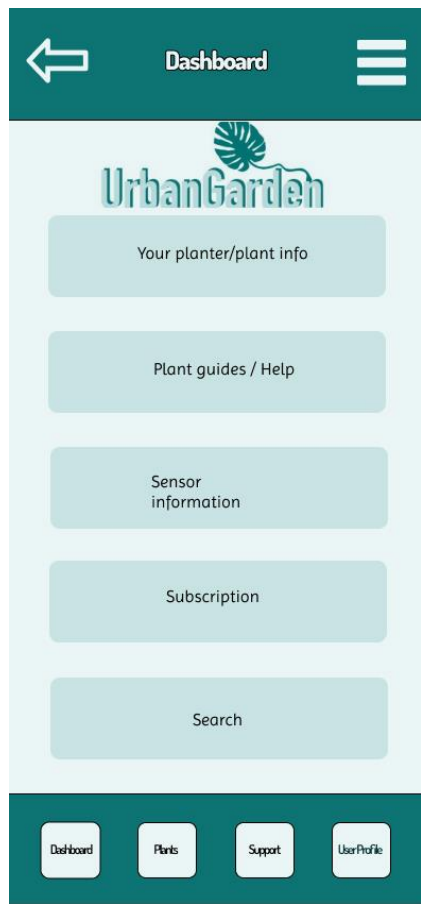
Dashboard

Plants

Support

User Profile

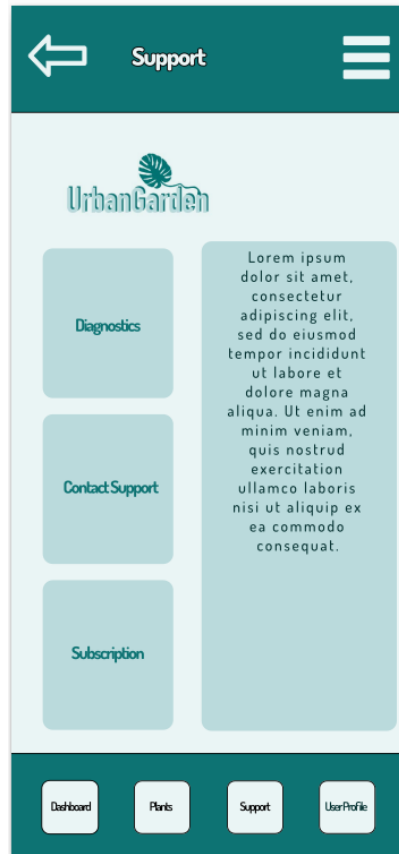
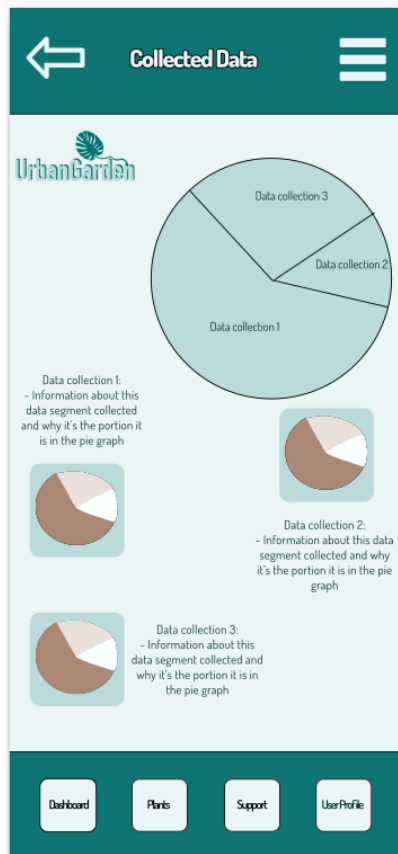
Prototype Plant pages



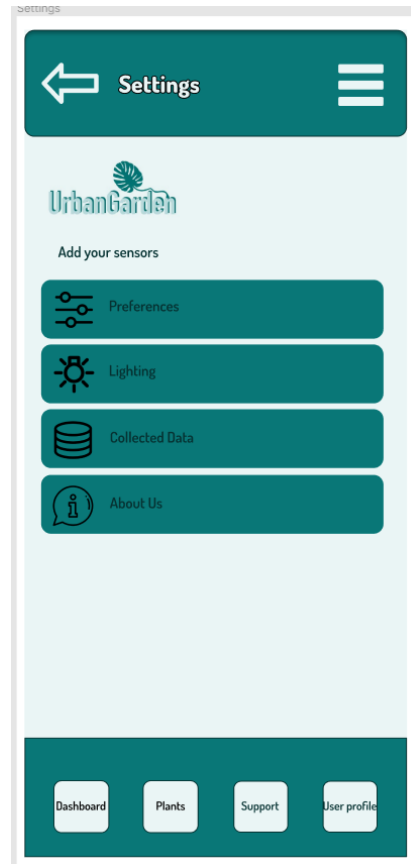
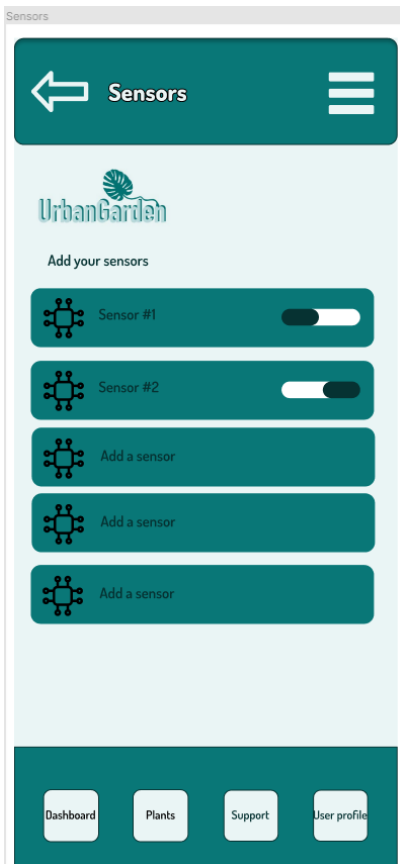
Prototype Plant pages



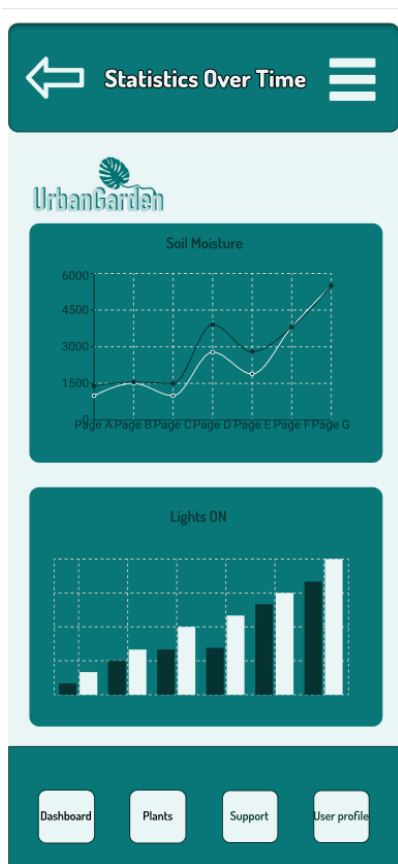
Prototype Support pages



Prototype Sensors, General Settings



Prototype Statistics



Detailed Data Lights On

←

Detailed Data

UrbanGarden

Lights ON

Daily Average

Date	Day / Night	On	Rating
Mon	Day	10.5	78
Mon	Night	13.5	33.1
Tue	Day	12.4	90
Tue	Night	11.6	59.2
Wed	Day	12	98
Wed	Night	12	22.0
Thu	Day	6.2	60
Thu	Night	17.8	12.2
Fri	Day	12	98
Fri	Night	2	88
Sat	Day	11.6	100

Dashboard

Plants

Support

User profile

Detailed Data

UrbanGarden

Temperature

Daily Average

Date	Day / Night	C	Rating
Mon	Day	26.5	100
Mon	Night	26.3	96
Tue	Day	26.1	90
Tue	Night	26.7	96
Wed	Day	25.5	84
Wed	Night	26.5	100
Thu	Day	28.1	86
Thu	Night	30.1	50
Fri	Day	25.1	82
Fri	Night	26.2	91
Sat	Day	26.5	100

Dashboard

Plants

Support

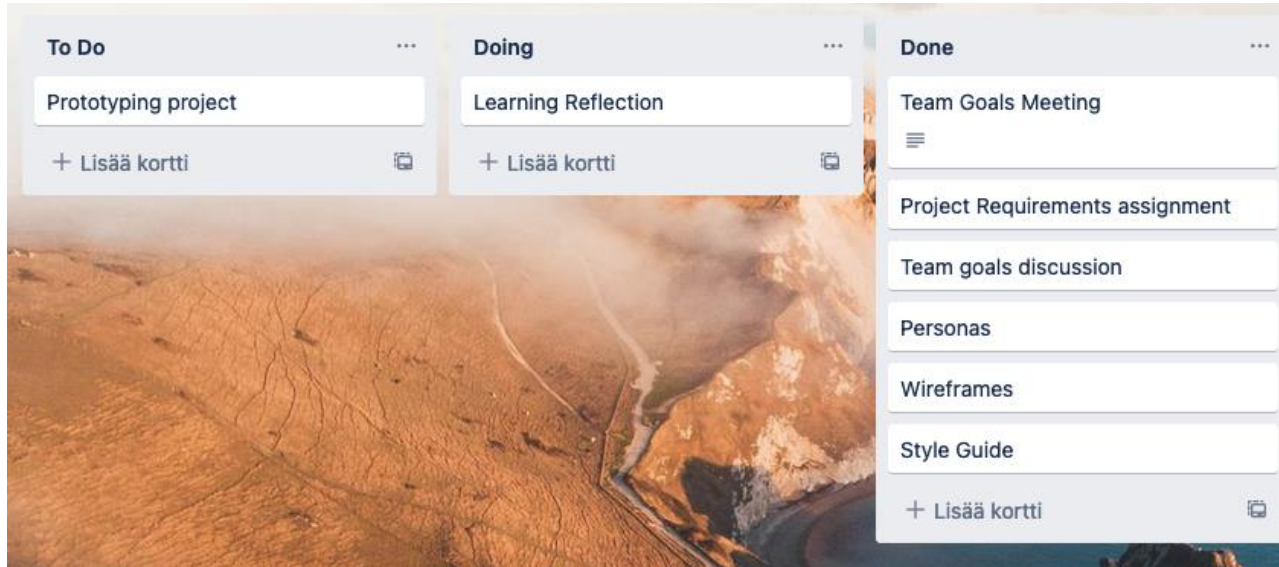
User profile

Project Management

Trello

Trello screen shot

1



Trello screen shot

1

COLOUR PROFILE OF THE APP

Logo: Green hex: #097777; rgb: 9,119,199; cmyk: 0,92, 0,00, 0,00, 0,53; pms: closest 332c. Off white: hex: #c8e3e3; rgb: 200, 227, 227; cmyk: 0,112, 0,00, 0,00, 0,11; pms: closest 12-5206 TPG.

Background color on the page: hex: #EAF5F5; rgb: 234, 245, 245; cmyk: 0,04, 0,00, 0,00, 0,04; pms: closest P 115-1 U.

Font colour on the text: hex: #063232; rgb: 6, 50, 50; cmyk: 0,88, 0,00, 0,00, 0,80; pms: closest 5467 XGC. Font colour on headers (large, bolded text): hex: #0D7373; rgb: 13, 115, 115; cmyk: 0,89, 0,00, 0,00, 0,55; pms: closest P 125-16 C

Accents: hex: #AB8874; rgb: 171, 136, 116; cmyk: 0,00, 0,20, 0,32, 0,33; pms: closest 4725. Accents 2: hex: #F7E5DA; rgb: 247, 229, 218; cmyk: 0,00, 0,07, 0,12, 0,03; pms: closest Pastel 9080. Accents 3: hex: #FAFFFF; rgb: 250, 255, 255; cmyk: 0,02, 0,00, 0,00, 0,00; pms: -

Footer: hex: #DAF7F7, rgb: 218, 247, 247; cmyk: 0,12, 0,00, 0,00, 0,03; pms: 9040 U.

+ Lisää kortti

2

Product Requirements

that also has IoT sensors connected to it by Bluetooth/WLAN to track the data. And the ability to pair multiple sensors and devices together under a single application. A very important focus is the ease of use and the displaying of data in an attractive manner.

UX-Ease of use. From the software side, it should be displayed in a very user-friendly manner.

Sensor integration with the application. Hardware links to software/phone app via Bluetooth, and the user shouldn't have any problems during pairing.

Mobile-first application

Scientific basis on what are the optimal readings on soil dampness, day-night cycles for the UV-lights, soil's pH levels, humidity.

A database of agricultural information.

The ability to link multiple devices into a single software environment for more intensive use.

A third-party payment management system for subscription payments etc.

+ Lisää kortti

3

Roles and Skills

Siim Laineste – Knowledge of software development.

Ida Bragge – Basics of software development, project management

Jackson Wilken – Leadership experience, development basics, basics of graphic design

Matias Laukka – Knowledge of Java / Javascript, UI/UX Design and teamwork skills

+ Lisää kortti

Going forward

- Takeaways
- Next steps

Takeaways



Impact:

Overall this project had been achieved on-time and well executed.

Our team members had vastly different schedules, and timing our regular meetings was the trickiest part.



What we have learned:

For those of us who had prior UI/UX experience, there was still new skills learned.

Figma was new for almost all of our team, and using it throughout our project, has lead to us having learned a new skill, moving forward.

Next steps

1

We would do the finishing touches on the visual side of the application, since there's still some things we didn't get to perfect quite like we'd have liked to.

2

We would streamline the application's flow rate to get rid of unnecessary pages, texts or links. There was still some clutter left on the pages.

3

We'd like to add overall functionality. There's still things like the plant grow guide and its integration with automation that'd be an interesting challenge both UI and logic -wise.

Let's connect!



For those who are interested to connect with us, please don't hesitate to seek our information via Laurea University of Applied Sciences email service.

Reference and Credit

Google