Logbook

Weekly Report

1st Week Report (19/02/2018 - 25/02/2018)

The first week the team had to do some activities of team building to know their teammates better and have a solid base to grow as a good team.

2nd Week Report (26/02/2018 - 04/03/2018)

The second week the team had to choose the theme of their project: “Vertical Farming” from a list of possibles subjects and they started to do some researches and planing the deadlines and tasks as well as doing the Gantt chart and they continue doing some team building activities.

3rd Week Report (05/03/2018 - 11/03/2018)

The third week the team did some drafts and started to figure out solutions for the design, technicals solutions such as how to water, fed and light the plants.

4th Week Report (12/03/2018 - 18/03/2018)

The fourth week the team showed the black box diagram and they still working on developing ideas for the design and how can it be the technology included. The sustainability, marketing studies started to be developed. During that week apart from working on the project, they had two trip days, visiting one-day “Tresminas” and the other day the Visit of the city center of Porto.

5th Week Report (19/03/2018 - 25/03/2018)

The fifth week the team worked on the 3D draft, schematics (internal, exterior and electrical part), a “provisional” list of materials have been done on it, with an orientation price. For showing to their supervisors apart from the 3D work on CAD, the team built a cardboard box to show their supervisors the idea that the team has for building the vertical farming. Also, the Ethical report has been started with the idea of the “problem statement” and has changed and improved some of the things that they were said to correct about the wiki.

6th Week Report (26/03/2018 - 01/04/2018)

Due to the Easter Holidays, the week was free, so the team just corrected some minor things in the wiki.

7th Week Report (02/04/2018 - 08/04/2018)

The team managed to make a list of the materials that are necessary to build the prototype and project. This list, however not final, will provide a decent ground for listing the possibilities that our product will offer. The list can be found in the deliverables section, although as mentioned previously, it is subject to change and may not be the same list that has been submitted during this week.

Based on the supervisor meeting, the team needs to work on the wiki and that will be the focus in the upcoming weeks.

8th Week Report (09/04/2018 - 15/04/2018)

The team worked extensively to update the wiki. There has been a major improvement on the report page of the wiki and regarding the following sections:

- State Of The Art
- Project Management
- Marketing Plan
- Eco-efficiency Measures for Sustainability
- Ethical and Deontological Concerns

Additionally, the team provided references for every external source found to support the claims on the report page.

9th Week Report (16/04/2018 - 22/04/2018)

The team finalized some mistakes in the wiki and corrected the grammatical issues present there. In the meantime, the team prepared an interim report presentation because this week on 19/04/2018 the team had to present the interim report. The team received mostly positive feedback from the supervisors on the presentation. After the presentation, the team worked to improve the report and the product based on the feedback from the supervisors.

10th Week Report (23/04/2018 - 29/04/2018)

The team improved the original list of materials and did some research about where to find the materials needed. This way, the team added a new part to the list of materials with the providers of them. This way, the university can find out where to look for the materials.

11th Week Report (30/04/2018 - 06/05/2018)

The team finished the improvements on the report on the wiki based on the feedback received on the interim report from the supervisors. Additionally, the team made some extra improvements on the list of materials due to the fact that we were over the budget limit, even though the supervisors decided to grant a sponsorship with some materials from ISEP.

12th Week Report (07/05/2018 - 13/05/2018)

This was the student free week so the team just improved some small grammatical mistakes in the wiki.

13th Week Report (14/05/2018 - 20/05/2018)

The team received the electronic part of the materials and a voucher for Leroy Merlin mechanical parts. Rodrigo and Andres went to pick up the materials from the store and after that, we researched the quality of the materials. We found out that some materials are missing and some materials are different from our demand. We shall discuss with the supervisors for this in the following week.

14th Week Report (21/05/2018 - 27/05/2018)

The team received the mechanical items that were needed to build the prototype. The team also discussed possible changes to the electronic part of the items with the supervisors and we came to a solution and started assembling the prototype. In the marketing class, we received feedback about the wiki and we will update the wiki per request.

15th Week Report (28/05/2018 - 03/06/2018)

The team continued to assemble the prototype and the electronic parts start to function well together. The workers of the prototype are as follows:

- Rodrigo and Andres are working on the mechanical parts of the product
- Szymon is assembling the electronic parts
- Mile is programming the server side code and is preparing the database
- Audrey and Anastasia are preparing the flyer and the marketing part of the product

16th Week Report (04/06/2018 - 10/06/2018)

After a programming session, we have boot up the server and the database is functional. Szymon is almost done with assembling and soldering the electronic parts of the product and Andres and Rodrigo are still working on the mechanical parts.

Meetings

1st Meeting (2018-02-22)

Agenda:

1. Presentation

2. Modus operandi
3. Project proposals
4. Electronic Logbook

Minute:

Introduce here a brief report of the meeting.

2nd Meeting (2018-03-01)

Agenda:

- Define “Urban Space”? - do we understand it as a system accessible publicly in the city squares, or do we understand a system for the private purpose, suitable for use in densely occupied city centers?
- What are the expected “different size areas” boundaries? - does the scale start from the kitchen countertop and goes to a bookshelf, or does it start on a bookshelf and goes to a glasshouse?
- What variety of plants is to be farmed? - Herbs only or perhaps small vegetables like cherry tomatoes just as well? What level of complexity of the crop would be considered to be a success of the project?

Minute:

Start 9:20

6 teachers, Anastasia, Audrey, Mile, Andres, Rodrigo

We use less soil than traditional farming

Urban Space

- do the research where we want

Requirements

Luis marketing Ethics

In 2 weeks:

- We choose what we want, every decisión we make the place is decided by us and we have to justified, based on our marketing studies, sustainability studies and ethics studies.

After the meeting:

- Research our spot, write the art chapter

ART Chapter:

- What is Vertical farming

- The different approaches are: Schools, squares,….

Size:

- ISSUE 1: Adapting the structure to different sizes
- Modularity is the solution with 1m2 more or less.
- The size, the water, we need to consider

Variety of plants:

- The sustainability part is a success since we don't pollute because the transport is local instead
- Hydroponic plants(building H there is a tank)
- exotic fruit is complicated(because they are big) gravity is gravity, physalis(exotic fruit little and its expensive in the market)
- for home(what we normally eat)
    - chickpeas, tremoço, beans(the small ones).

Other:

- don't work individually in parallel. Each task not only person. Try to work cooperatively.
- There should be something that comes from our mind, it can be innovated only the design, or other things(more efficient)
- Gaia(“Caninho das Aromáticas”)→ Visit(herbs, infusions)→ biological farming

CONSIDERATION:

- what we really need

IDEA: Don't use pesticides or fertilizers, and see which adapt better to our climate.

RESEARCH

- What to grow,
- Write what we find

3rd Meeting (2018-03-08)

Agenda:

- 2nd Meeting's conclusion about the space and the size of the project
- Minimum Viable Product of a modular prototype - what basic prototype would be considered a proof of concept? Shall we have a plant grown in the prototype?
- Report updating clarification - how should weekly reports be constructed? What period is considered in one week (Monday - Sunday or Meeting - Meeting)?
- Pros and cons of different plant growth solutions
    - Hydroponics
    - Aquaponics
    - Aeroponics
    - Soil solution

Minute:

6 teachers and Anastasia, Audrey, Andres, Szymon, Rodrigo

- The size of the farming is thought to be from 0,5 to 1 square meter, and have a recycle system
- The prototype must show the growth of a plant, so to prove that our project works, so by mid-May it should be ready for being ready for the «testing day».
- In the «weekly report» we have to write down what we have done during the week in one or two sentences, for instance for the first weekly report add the theme we think before choosing vertical farming and the discussions we had.
- Also we have to complete the «state of arts».
- About the cons of hydroponic plants inside a house is that if it is opened, it generates a lot of humidity and if we closed the plant will need to breathe.
- About the cons of aquaponics are difficult to do, so if we mix with vertical farming can lead to a complex project.
- Other business:
    - Modularity: the modules should have the possibility of being connected between them, and also being possible to be disconnected when it is wished.
    - Some ideas: IKEA hydroponic System, Quinta do Covelo, MiniGarden.com, UrbanGrowth, Strawberries.

4th Meeting (2018-03-15)

Agenda:

- Presentation of the idea that we have
- Brief description of the black box
- Can we add up our own budget to the 100 € and use some equipment from the university(Arduino for example)?

Minute:

- How to manage the environment
- How to control the plant's needs
- How we can manage with 100 € or, how to justify if we need more than the limit
- Do a study on sustainability and ethics and put it onto our project
- Why indoor production and how much energy will it take for indoor/outdoor
- Fixing and improving the state of the art on the wiki

5th Meeting (2018-03-22)

Agenda:

- How to center text in the wiki(WRAP plugin is not working)

- Some idea changes
- Answer to Paulo's e-mail
- Present 3D model and cardboard model

Minute:

- The fourth-week report and the “activities” part of the wiki must be filled in
- The wiki in the state of art chapter we have to add “Captions”.
- In the marketing report, we have to estimate the price of real one(not the prototype, the real size one).
- In project management, we must explain the Gantt chart and the SCOPE, not only with pictures.
- We need to work on the electrical schematics.
- Advice: Think about some kind of air flow for the roots of the plants, to not have much temperature.

6th Meeting (2018-04-05)

Agenda:

- Boundaries of the Interim Report / Presentation
- Material acquisition procedure:
    - Are in-town pickups acceptable for reducing delivery costs?
    - Can we split ordering into multiple rounds?
        - If so, what is the latest possible time for minor additions?
    - State of ISEP electrical supplies:
        - Are minor electrical pieces (resistors, capacitors, diodes, etc.) available for use in small quantities?
- Possibilities for the budget increase - are there any? Under what circumstances?

Minute:

- Interim report should include: Sustainability, Marketing, Ethics, State of the Art, Black Box, Full Material list, Detailed Schematics
- Take consideration of power management as well as cost management
- We should improve the wiki

7th Meeting (2018-04-12)

Agenda:

- Interim Report
- Possible sponsorship - based on the case of the team 2
    - Best case scenario - Outsourcing the costs and part of the workload of creating casing/structural support
    - Worst case scenario - access to CNC cutter
- Postponing the media materials (logo, product name, leaflet…)

    - Backlash of the branding conflict with https://www.babylonverticalfarms.com/

Minute:

- Sponsorship granted from ISEP
- Name changed to Vereatable

8th Meeting (2018-04-19)

Agenda:

- Interim presentation

Minute:

- The team presented the interim presentation
- We received feedback for the interim presentation and the overall score was satisfactory

9th Meeting (2018-04-26)

Agenda:

- Interim presentation feedback
- What to do if, while assembling, we discover that we need more things than in the list of materials?
- Future objectives

Minute:

- Received both positive and negative feedback regarding the Interim presentation
- If we need more materials, we should prepare an updated list if we are in budget and wait for them to arrive

10th Meeting (2018-05-03)

Agenda:

- Materials update from the supervisors
- Future objectives

Minute:

- Some wiki feedback from the supervisors
- Materials should arrive after the student break

11th Meeting (2018-05-17)

Agenda:

- When will the products arrive
- Use cases about the application

Minute:

- Materials received
- Use cases need to be updated with admin role
- Prepare report for a conference in Greece

12th Meeting (2018-05-24)

Agenda:

- Different voltage source provided - obtained 2A unit instead o 1A one ordered. Possible risk for other components, as 2A current would exceed their ratings? Clarification would be appreciated.
- What can and what cannot be soldered among the electrical components? Why?
- Cables, breadboard, and connectors - can we get a reasonable surplus? We've estimated a need for 15 x Female-Female and 10 Male-Female jumper cables, the longer the better.
- Missing element from the shopping list - the electrical components box. Was it unavailable?
- Workshop: where, when, what are the rules of availability? What equipment is available? Mechanical AND electrical?

Minute:

- The discussion went well with the supervisors. The items will be delivered to us.
- The workshop details will be sent via e-mail.

13th Meeting (2018-05-30)

Agenda:

- We require a silicone gun and some 7,5 screws

Minute:

- Granted a workshop and some screws.

14th Meeting (2018-06-07)

Agenda:

- Consultation/approval of proposed soldering paths and/or soldering test - having been asked not to solder without permission. - https://docs.google.com/spreadsheets/d/1zIKl4QErhBEqfFN01COZuiSIsBzzbdXOh8xAxNpa_VE/edit?usp=sharing

Minute:

- Discussion about a solution for waterproof water deposit for the prototype
  - Plastic container (better solution, will be included)
  - Wooden container
- Proposition of soldering scheme has been presented to the supervisors. After feedback by Paulo, small corrections have been made to improve the soldering paths. The circuit has been executed the same day.

15th Meeting (2018-06-14)

Agenda:

- Type of WiFi on the final presentation (credentials etc.)
- Present current state of the project(flowcharts)

Minute:

- We will use the university's WiFi for the final presentation and we got instructions about how to connect our device to that internet
- Received feedback about the current flowcharts in the project and information about which other flowcharts to include
- The supervisors told us the rules and the timespan of the final presentation

Activities

Start	End	Task	Description	Who
05.03.2018	06.03.2018	Roles and Divisions	Dividing the team into roles about who to do what	Everyone
08.03.2018	09.03.2018	Gantt Chart	Creating the Gantt chart with the tasks and time according to the team	Mile and Audrey
28.02.2018	15.03.2018	Research	Researching about the problem and the prototype	Everyone

Start	End	Task	Description	Who
15.03.2018	18.03.2018	Drafts	Creating the vague drafts about the prototype	Everyone
19.03.2018	23.03.2018	Detailed Drafts	Creating the 3D models about the prototype	Rodrigo
24.03.2018	05.04.2018	List of Materials	Preparing the list of materials needed	Everyone
06.04.2018	25.04.2018	Provider searching	Finding the providers for the list of materials	Everyone
26.04.2018	20.05.2018	Polishing and upgrading the report	Upgrading the report while waiting for the materials to be received	Everyone
21.05.2018	23.05.2018	Design of the System	Designing the product based on the materials received	Everyone
22.05.2018	28.05.2018	Server configuration	Configuration of the server to handle the device	Mile
22.05.2018		Backend programming	Programming the back-end application for the device	Mile
24.05.2018		Mechanics part	Assembling the mechanical parts of the prototype	Rodrigo and Andres
24.05.2018		Electronics part	Assembling the electronic parts of the prototype	Szymon and Andres
		Application programming	Programming the Android application	Szymon and Mile
24.05.2018	You can never finish testing	Testing	Testing if the system works as intended	Everyone