Logbook

Weekly Report

1st Week Report

Starting this week, we got to know each other, had our first team building meetings and were presentated the possible choices of the upcoming project.
On the weekly meeting on Thursday, the proposals were explained more detailed to give us an overview of what was necessary to do and achieve for the different projects.
After discussing the various opportunities within our group we made a list of preferences and sent it to Benedita.
A few hours later we knew that the project we'd work on for the next 4 months was a relatively large aquaponics system and mainly the controlling and monitoring referring this system.
This should be achieved by creating a mobile device function to give an instant overview of data like temperature, pH-value, conductivity.

2nd Week Report

Things get started.
This week didn't only bring us summerly weather but also the first steps to work on our project.
Before having the first Thursday-conference, we had to be clear about the uncertainities and questions we had left regarding the aquaponics system and the objective of our project.
In order to work together in the most efficient way, we created a facebook group as well as a Google Drive folder, so we could simultaneously edit and upload files for the project.
Moreover everyone could have a direct overview what needs to be done and what already has been worked out.
Additionaly, we nominated Arick as the group leader to bring a solid structure into the organizational part of the team work.
On Thursday we could discuss all our prepared questions with our supervisors. This helped us to finally get started to work on different, more specific tasks.
The first step here was to get an overview of the upcoming work and with these informations start to create a Gantt Chart.

3rd Week Report

After last week's tast definition and allocation everyone had to start working on their specific fields of work.
Doing this, we made an approach on the introductions of the several chapters of the report.
Furthermore the website, programming, component research and studies on the circuit and electrics were worked on.
Concerning the marketing part of the report, we furthermore started analysing the external environment as well as the competitive situation.

4th Week Report

Main objectives in this week were finishing the components list to meet the deadline and to work out the marketing plan until the positioning could be defined further.

5th Week Report

Easter Break
The interims presentation was begun and worked out.

6th Week Report

Break was over and we all met again to discuss the interims presentation as well as the content and specific task allocation.
We spent Wednesday practicing the final version of the interims presentation and held it on Thursday. Further project management tools and methods were introduced and started including R&R Matrix, extension of WBS and Gantt and Risk Register.

7th Week Report

After the interim presentation we got feedback from the teachers. We used this feedback to make improvements in our Wiki report. Such as the following chapters: Marketing Plan, State of the Art, Ethical and Deontology, Eco-efficiency Measures for Sustainability and Project Management.

Further on, the industrial design student in our team made a new 3D design of the feeder. This was before we were told that we are going to buy one instead of building one.

And as it should be, our Web app had some improvements as well. The login credentials were reconfigured for the ISEP database account and the code structure was also updated. Then we started to work on the access terminal through SSH via Python commands, using a personal Raspberry Pi because we don't have access yet to the one we put in the components list.

8th Week Report

We continued with the improvement of our Wiki: Marketing Plan, State of the Art, Ethical and Deontology, Eco-efficiency Measures for Sustainability and Project Management. We also finished the component and the budget list. The calculations for the heater are still in progress. Further we started to work on the stakeholders register and the design of the website.

9th Week Report

Project Management chapter was mainly finished, also Eco-Efficiency and Ethics got the final touch. We started to take footage and pictures for the video and figured BiBtex out. Also the coding was continued to be developed since we received our first materials.

10th Week Report

We got final feedback on the marketing section, worked on improvements regarding motivation section as well as parts of the project management. Arick started to do the user manual and Jan continued to code. Francisco managed to finish the chapters about ethics and sustainability. Furthermore we worked on report details such as glossary and BiBtex was introduced to all members of the team. Viorel worked out a 3D model of our future box including the electronics parts and ports.

11th Week Report

The almost completed report was reviewed and checked. Feedback from communications class was taken into account.
Since the components arrived entirely we were able to start building the blackbox which will contain all components to control our system. Furthermore the work on the video continued and chapter 5 and 6 needed more detailed improvements. Coding gets into its final phase, so testing and functionalities can start soon.

12th Week Report

During this week we kept working on building and connecting the components. Furthermore we worked out the poster, final report, final presentation, paper as well as the manual to meet the final deadline on Friday the 12th to upload all our files.
Despite that chapter 7.5-7.7 and chapter 8 of the report were finished.

Meetings

1st Meeting (2015-02-26)

Agenda:

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

Minute:

The several proposals were presented and explained by the teachers, then discussed within the teams.

2nd Meeting (2015-03-05)

Agenda:

1. Discuss any further uncertainties and other questions the team has in order to start working on the project.
2. What happens if you exceed your budget?
3. Do we have access to a functional aquaponic system? If so, where and when?
4. If we make a phone app, do we have to make it for Android, Windows and Apple?
5. What functionalities will the app have?
   Do we need a phone app or can the controls be web based?
6. Are the controls specified in the proposals all that we will need?
7. Does the system need an independent or back up power system?
8. Who will determine the fish and plants?
9. What exactly will we need to present on the 9th of April?
10. Is the material list definitely final?
11. What happens in case we need more/stuff breaks?
12. Do we only do the shopping list or "shop" ourselves on- and offline?
13. Is the use of ONLY freeware mandatory?
14. Is there any equipment left from last year which could be used for our system?
15. Could we use material to lend for another people?
16. Could we include in the program a sensor to determine when we would have to change a component?
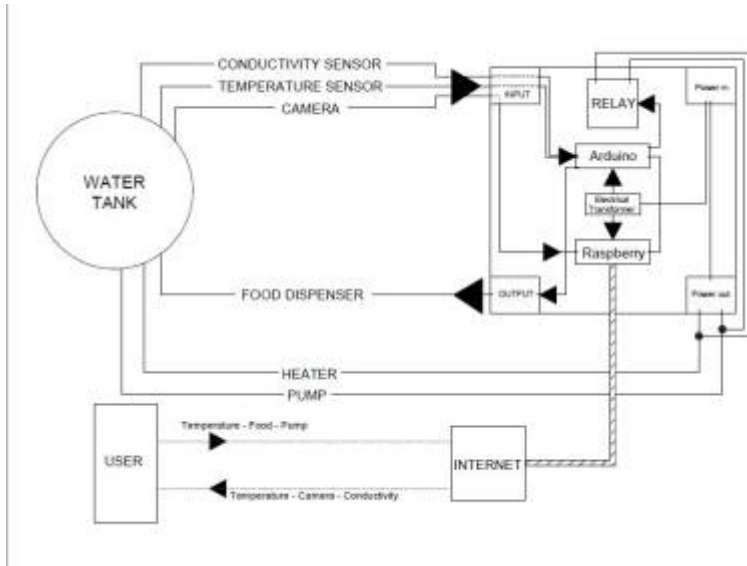
Minute:

Each member of the team came up with their questions, regarding the execution of the project. These questions were then sufficiently answered by our supervisors.
The requirements of our task and the milestones were reviewed more detailed.

3rd Meeting (2015-03-12)

Agenda:

1. Leave out flow-sensor
2. Gantt-Chart
3. Blackbox-diagram
4. Website

Minute:

Throughout the meeting we discussed several points. The blackbox-diagram of the first circuit design was presented. Furthermore we talked about the necessity of a flow sensor or eventually other sensors to measure the water level.
Concluding, we reviewed the process of our wiki page and the report.

4th Meeting (2015-03-19)

Agenda:

1. Components
2. Diagram
3. Functionalities

components_budget_excel.xlsx
schematic_v3.pdf

Minute:

The components list was the main topic of this meeting. We were also advised to pay attention to the correct use of units in our list. Another point was the accurate maintenance of the wiki-page.

5th Meeting (2015-04-16)

Agenda:

- Improvement comments on the wiki report
- Bibliography (use this example; add first the bibliographic reference in BibTex to your

[refnotes.bib](#) file)
- Glossary: How do we link sources for definitions? In the table?
- When will we buy the components? Because some of the components are out of stock now and we keep editing the component list.
- Who can help to find a motor for our feeder and a spindle?
- With who do we have to speak for light leds?

Minute:

We started this meeting by going over the changes we made in our Wiki report. Then we got some suggestions on the bibliography and on the choice of the Arduino and the Raspberry Pi. We also discussed the purchase of the feeder because building one would be more expensive than buying one. For the light leds the teachers redirected us to the technicians room where there should be leds for our team.

For the next meeting we should try to finish the components list and brainstorm about making the tank more presentable.

6th Meeting (2015-04-23)

Agenda:

- How specific should the work on the codes be described? (a block diagram, flow chart(s) and relevant code snippets)
- What are the poster requirements? (A3)
- What are the video requirements? (5 min in free style)
- What are the paper requirements? (template provided in Moodle)
- When do we get the materials to start working on the product? (in principle, 2.5 weeks after handing in the final list of materials approved by client and direct supervisor)

[components_budget_1.xlsx](#)

Minute:

Video: Focus either on **EPS**, **team work**, project and final product experience. Animations, drawings, pictures, video sequences, we can use everything we want.
Paper: Paragraph on development, discussion, sustainability, marketing, each chapter but only the core content referring to our product. 8-10 pages.
Formula: international units (kg).
Feeder: once every 24 hours fish are fed. In case it's not enough, we'd like to control the period of feeding by opening the feeder and access the eletronics. Connect servo motor controlled by Arduino.
Components list: Include tax and delivery.

7th Meeting (2015-04-30)

Agenda:

- Tank modification is neither in budget, requirements nor in time schedule. Do you still want us to think about this issue? (Yes)
- Is there a minimum scope for the report regarding quantity? (You mean number of pages? No. It must report all things you did through the semester to develop your solution and allow a reader to replicate your prototype.)
- Bibliography –> should references in the text be written in [number of bibliographic order] or (author, year, page)? (You can choose)
- Feedback on the report is welcome (Yes, in two weeks.)
- What format do you want the final report in? Is the Wiki "Download as PDF" sufficient? (You should download it as ODT, then edit it, create the front, the tables of contents, figures and tables, make sure that chapter start at odd pages, etc. and. finally, generate the PDF.)

Minute:

- Tank:we still should think about this issue.
- Report:

1. in developing the report it doesn't have to have a minimum of pages. It must report all things we did through the semester to develop ours solution and allow a reader to replicate ours prototype.
2. Bibliography: We can choose how to write the reference: (number of bibliographic order) or (author, year, page)

- Format final report: first we should download it as ODT, then edit it, create the front, the tables of contents, figures and tables, make sure that chapter start at odd page, etc and finally, we generate the PDF.

8th Meeting (2015-05-14)

Agenda:

General feedback of the report. What are our weakest points of the report?

Minute:

- We need to complete 1.3 Motivation.
- Complete in 1.5 Requirements with data about the budget.
- Instead of "table" and "figure" use "Table" and "Figure".
- Add a new chapter in State of the Art about our prototype product.
- Correction in text about references and in mathematical formulas.
- Add Conclusion in chapter 5.
- Change i.e. and e.g. in italic style writing.
- Add subchapters in chapter 7.1.
- Write in chapter 7.4 Functionalities about diagrams, navigation map, flow chart for arduino and

raspberry and important code lines.

9th Meeting (2015-05-21)

Agenda:

- When will all the components be available?
- The cross-references for maths equations don't work. (Change the MathJax plugin configuration accordingly)
- From Planning: "Hand in a CD with the corrected deliverables (source + PDF)". What do you mean with source? (A CD containing the sources in Word, PowerPoint, Arduino code, etc. as well as the PDF versions of all deliverables must be handed-in.)

Minute:

- Wait for the MathJax Plugin to be changed. (supposed to happen today).
- The CD should contain ALL deliverables in editable as well as non-editable files.
- Paulo and Benedita had some suggestions about the connections. (Jan knows)
- Paulo:"Be sure to use some ventilation."
- Benedita:"In the meanwhile you can test all the code and sort out how to do the layout."
- Deadline for the 12th includes the entire day until midnight.
- Regarding the Report: Chapter 3-6 you get the feedback from the teachers. The supervisor jury won't discuss these. Chapter 7: Caption for the first figure is missing ("Navigation Map"). "How frequently does the Rasberry Pi write in the database? Do you think it's necessary to check the status every 5 seconds? How frequently is the database updated? Make sure the intervall is discussed with the client."
- Website: Put update time on the "change" page.
- Benedita's suggestion to think about: It should be Arduino which writes directly in the database. Rasberry is the higher level controller.
- Chapter 7: whitespace between numbers and units. Also units are wrong (kg not Kg) and so on. K for constant needs another variable.
- Proof current is too high from camera, Arduino etc. for USB hub to manage. It's part of the design phase.

10th Meeting (2015-05-28)

Agenda:

- Questions/comments on the marketing deliverable.

Answer: Please address this question to the marketing teacher

- Is it possible to shift chapter 8 to the 25th of June? It might only be possible to draw a final conclusion at the very end.

Answer: No. The very end of the project is the 18th of June. The last week is to improve the deliverables, i.e., include the corrections include corrections provided by teachers and supervisors,

and the prototype, i.e., just work on details.

- Do figures included in tables need extra titles/numbering?

Answer: No, if the table is cross-referenced in the text whenever the figures are referred.

- For the report as Word file: is it allowed to snip/screenshot, *e.g.*, tables? Answer: Tables are to be created as tables and not as images.
- Will it be sufficient to copy/paste Bibliography to the Word file?
- We'd like to show the video and ask for feedback/improvements.

Minute:

Refering to comments in the agenda section.

11th Meeting (2015-06-04)

Agenda:

- Are we allowed to cut the given plastic box that will be installed at the aquaponics system?
- Can we review the poster requirements?
- How does the final evaluation will be handled?
- Feedback on the black box (we bring it).

Minute:

- About plastic box: talk to client.
- Poster: two types (scientific conference- not required!) but for us: convey the message of your offer just enough close to interested people but not to detailed. Show your product and leave the idea in the viewer's mind. catchy picture poster to catch attention and imply the product's message. Include the most important contents of your product. The poster should include ISEP and EPS logo. A3.
- Grades are produced as followed: created by 21 different people. These people are the 7 people of the supervisory board + teachers + team members. Presentation: supervisors will grade different things like: quality of deliverables, how we handled the teamwork, how the presentation and the final product is. 35 % of the grade is modulated among ourselves. After the presentations, in the afternoon there'll be individual interviews with every single student, leading to an individual grade. European Transfer System: grade will be in A-Fx to be translatted from our home school.
- Fan? Yes. Paulo: "The fan might be enough for 20 devices, usually fans in industrial equipment are really dustcatchy. If you design badly the airflow only 'eats' the air but does not refresh. Think about an airfilter for dust. The ideal would be to have the fan horizontal, the devices vertical. If the case is too open, the air will not flow. If you operate a desktop computer without case the fans will be useless. Check Raspberry Pi for internal temperature sensors to see if you really need a fan. First approach: forget the fan!" Another point: Can you switch on/off the fan? 12 V → a different relay would be needed.
- Focus of the final presentation: product development! cover, contents of the presentation,

problem/challenge to solve, general idea of proposal, briefly say how general approach fits into the outcome of marketing, sustainability and ethics research. Focus is no longer on these topics, start further to detail the product, general architecture, drawing, in terms of construction display what already has been done, present different components and interactions, present functionalities, terminate with tests/data (table), final conclusion, what we have achieved and future proposals., present the video in the final presentation, 15 mins including the video, at most 12 slides, it makes sense that everyone presents, rehearse together, no special costume is required.

12th Meeting (2015-06-11)

Agenda:

- Feedback on the current presentation slide order. pp_01_white.pdf
- Feedback on the current state of the poster. poster_1.pdf
- Is there the possibility to test the PowerPoint in the presentation room to check colours etc.?
- Feedback on user manual aquaponic_admin_user_manual.pdf
- How we stick the heat sink on Raspberry Pi?

Minute:

- It should be able to use the room, we get information next week.
- "How can I modify the hardware?" does not belong into a user manual. Rather: description on parts, where and how do you install the sensors?
- Besides: "Engineering manual": with all the technical details in case of e.g. modifying the system.
- Presentation: Colours may not be so good because the contrast could not be enough. (Marketing maybe after architecture and design).

13th Meeting (2015-06-18)

Agenda:

- Final Presentation

Minute:

Tasks to accomplish until next Tuesday (23rd of June 2015)

- QR-Code for Poster and Leaflet (Katoo) - **done**
- 2 € each for printing and CD - **done**
- Documentation of final stage chapter 7 heater support, modified feeder, (waterproof) cases (Viorel) - **done**
- Test and results of light, heater and feeder (Rasmus with support from Viorel) - **done**
- Mount all the components to the aquaponic system (Viorel with support from Francisco)
- Real pictures of the final product (Viorel with support from Rasmus) - **done**

- Billions 4.2.2.4 (Rasmus) - **done**
- Code (binary etc.?) explanation (Jan & Arick)
- Flowcharts (Jan & Arick with support from Katoo)
- Modify Wiki and Report (Rasmus)
- Modify User Manual (Francisco)
- Leaflet & Poster printing (Katoo)
- Report printing (Rasmus)
- CD (Viorel)
- Camera fixing (Viorel)
- Connect Flowsensor and Ultrasonic sensor to Arduino (leave for later)

Activities

Task	Responsible
Gantt Chart	Jan
Leaflet	Katoo
Research materials	Viorel, Jan & Arick
Marketing Plan	Rasmus & Katoo
Logbook	Rasmus
Eco-efficiency Measures for Sustainability	Rasmus, Arick, Katoo & Francisco
Ethical and Deontological Concerns	Jan
Pre-Development	Jan, Arick & Viorel
Investigation	
Team Presentation	
Final Presentation	
Interim Report	All
Final Report	
Development	
Functional testing	