# Logbook

## Weekly Report

### 1st Week Report

In the first week, we identified three main topics of interest by first assessing the skills and interests of each team member. Each of us created a personal top three from the list of topics, and after sharing our results, we determined the most relevant ones for our group.

During our brainstorming session, we explored ideas related to each topic and found a promising concept that combines two of them: Monitoring plant fertilizer. This idea integrates both the smartification of everyday objects and smart food production.

Additionally, we also searched for potential ideas for a Smart Building project, further expanding our scope of interest.

### 2nd Week Report

We started our second week with a technological crash course, where we learned the basics of Python and explored key aspects of open-source software in IT. Following that, we attended a communication class, during which we took note of the essential documents that need to be completed by the end of the semester. We also began working on the state-of-the-art analysis for our project by researching existing products in the market. To better understand the competition, we created a comparative table highlighting the similarities and differences between these products.

On Thursday, we had our first project meeting with all the teachers to discuss our agenda. This meeting gave us valuable insights into how future meetings should be conducted and helped us establish deadlines for our tasks.

We concluded the week by participating in a design thinking workshop. During the session, we had an discussion on how to identify and approach the problems we aim to solve in our project. Additionally, we took part in fun and interactive brainstorming activities on the Miro platform. By the end of the workshop, we successfully created a one-minute video that explained our project idea.

### 3rd Week Report

This week, we successfully completed the evaluation for our team-building class and established a set of group attitude rules to ensure effective collaboration within the team.

In terms of project development, we created black box diagrams to outline the core functions of the compost bin and finalized the first draft of the compost bin design.

Additionally, we were introduced to Jira, a project management tool, and began utilizing it to organize our workflow. Through Jira, we created sprints, listed tasks, and developed a sprint plan, project backlog, and Gantt chart.

## 4th Week Report

We focused on research on the composting proces. This way we new what the important factors are for controlling the composting proces. Also, we composed the first designs that include the different components we will need and build our cardboard model. Next to that, we made the material and components list and did some research on what already exists.

## 5th Week Report

As the deadline of the Interim Report and Interim Presentation are coming closer, the chapters of the report were improved. Each team member was responsible to complete a chapter. Also, the team kept working on the 3D model and the component list.

## 6th Week Report

After completing the report last week, the team now focused on making and preparing the interim presentation. Each team member made the slides of the part they worked on and wrote about in the report.

## 7th Week Report

The team finished and uploaded the 3D model, made the power calculation, defined how to test the composting process and made cost calculations. Also, work on stakeholder management and a first load and stress analysis was done.

## 8th Week Report

This week the business case study for Ethics and Deontology was presentend by the team. Next to that, the wiki was improved, the material and component list and the load and stress analysis were improved. Also, the team started testing the composting process.

## 9th Week Report

The team finished the stress analysis solution, packaging solution and improved the leaflet and poster. Also, the team went to the workshop to have an idea about what is available and how the prototype will be made.

## 10th Week Report

The packaging solution was improved and the first steps towards the prototype were made by starting to manufacture the mixing and shredding part, programming the microcontroller and the application. Also, the first chapters of the paper were written.

### 11th Week Report

The mixing mechanism and blades for the prototype were successfully manufactured, and the electronic components were received. The team began working on and assembling the prototype structure. The packaging solution design was completed. Missing sections of the paper were added, and the composting process continued to be monitored.

### 12th Week Report

The prototype is done. The team improved the paper version and added some missing parts in the report. The composting tests were continually monitored. Besides, the team provided a final presentation powerpoint draft during the communication lesson.

### 13th Week Report

This week the team worked on the final presentation idea during the communication class. Detailed technical drawings were uploaded to deliverables. Composting tests were finalised. The application for the compost bin and the first version of video were done.

### 14th Week Report

In the week before the final presentation, the team successfully submitted all deliverables. The 3D-printed openers were reprinted and received. Assembly of the electronic components was carried out. Presentation parts were distributed among team members, and a trial practice was conducted.

## Meetings

### 1st Meeting (2025-02-27)

**Agenda:**

1. Presentation
2. Modus operandi
3. Project proposals
4. Electronic logbook (Wiki)

**Minute:**

We started with an overview of the work done by previous promotions, followed by a presentation of the possible project topics. Then, the different supervisors were introduced, and after a brief self-introduction, we moved on to a group discussion.

## 2nd Meeting (2025-03-06)

**Agenda:**

1. Final topic proposal
2. Brainstorming about ideas
3. Work breakdown structure
4. Filling the informations on Wiki Website

**Minute:**

The main objective of the mid-project presentation is to finalize our design before moving on to prototype implementation. To prepare, we will present two key deliverables next week: Black Box and WBS Design. Our focus is on innovation rather than creating something entirely new, aiming for improvements in cost, efficiency, sustainability, or inclusivity. To achieve this, we begin with a state-of-the-art analysis to identify existing elements and areas for improvement. Additionally, we discussed defining our target audience and outlined the deliverables for each meeting, emphasizing that supervisors are there to support us but not to assign tasks.

## 3rd Meeting (2025-03-13)

**Agenda:**

1. State-of-the-art
2. Review on black box diagram and design drawing
3. Questions
4. Feedback / Discussion about our concept

**Minute:**

Except for some details we got positive feedback on our Black Box diagram and design drawing. We should think about the ethical and sustainable part of our requirement.

## 4th Meeting (2025-03-20)

**Agenda:**

1. Update Black Box
2. Structural Drawing
3. Material and component List
4. Questions

**Minute:**

We need to make adjustments to the Wiki-website, ensuring the report follows a scientific writing structure with proper references. For the compost bin project, all materials and components must be available in the Portuguese market, and we have to compare different options before selecting the best one. Additionally, the cardboard scale model is helpful for providing approximate measurements to help finalize the placement and dimensions of the components.

## 5th Meeting (2025-03-27)

**Agenda:**

1. Structural drawings
2. Systems schematics
3. Hardware component selection
4. Questions
5. Feedback / Discussion

**Minute:**

After showing our version of the mixing and shredding mechanism, we need to modify the mixing part to give it more balance. Also, the material and component lists should be improved and a power budget analysis should be made.

## 6th Meeting (2025-04-03)

**Agenda:**

1. Wiki
2. Structural drawings
3. Component list
4. Questions
5. Feedback / Discussion

**Minute:**

The wiki should be improved based on the feedback given in the meeting, the bibliography was good. The bearings and hinges should be redesign as discussed in the meeting.

## 7th Meeting (2025-04-10)

**Agenda:**

Interim presentation

1. State of the art
2. Our product
3. Sustainability
4. Marketing
5. Ethics
6. Milestones & Next steps

**Minute:**

Communication : Good feedback overall, improve rhythm and pace of presentation to avoid running out of time. Add logo and more information in our slides Marketing : Good wiki chapters about ethics and marketing, use more images for the presentation. More explanations about SWOT analysis.

Global remarks : To many slides, and problems on file extensions in the wiki. Adapt the layout colors to our brand. Need more details on the 3D video, about drop system. General comments about our report, mainly about symbols for values. Effective presentation, people are now expecting the prototype. We can start working on it, first with composting experiments.

## 8th Meeting (2025-04-16)

**Agenda:**

1. 3D model presentation
2. Load and stress simulations
3. Expected costs
4. UN sustainable development goals

**Minute:**

We talk about solutions to upload the video in a better way, and add background music. Waiting Jorge's feedback on our stress simulation, first feedback was to also consider extreme events. Remarks about the way we present our data in the costs table. We also receive further information to have more precise data in this document. The final discussion was about the sustainability aspect, with new data we can consider in this chapter.

## 9th Meeting (2025-04-30)

**Agenda:**

1. 3D-Model Video
2. Prototype

3. Questions

**Minute:**

The 3D video should have more captions to explain the product, also some other suggestions were made on the 3D video. The budget analysis for the prototype should be finished and uploaded by the end of the week, it is almost ready.

## 10th Meeting (2025-05-15)

**Agenda:**

1. Stress analysis
2. Prototype: how to make it
3. Materials for prototype
4. Packaging solution

**Minute:**

The packaging solution has to be improved, recylcing is not reusing. The load and stress analysis is approved by the teachers.Some parts of the prototype can maybe be bought instead of 3D printed to keep it more easy.

## 11th Meeting (2025-05-22)

**Agenda:**

1. Packaging
2. Composting process
3. Prototype
4. Application/Controller

**Minute:**

Idea for new packaging solution was approved. Composting process, errors during the process and possible solutions were discussed. The first steps for the prototype were shown. As well as the progress considering the application. Lastly, some tips regarding the paper were given.

## 12th Meeting (2025-05-29)

**Agenda:**

1. Prototype
2. Functional Test
3. Review on Paper Overleaf
4. User Manual
5. Packaging Solution

**Minute:**

Different instructions for conducting the functional tests were presented. The deadline for the paper is the 9th of June. Some corrections to the paper are still needed. Different colours should be used to highlight important parts in the images. Clearer numbering in the user manual would be helpful. The additional box could be a stylish bag with a logo on it. Keep updating the report regularly.

## 13th Meeting (2025-06-05)

**Agenda:**

1. Prototype
2. Review on final paper version
3. Technical drawings
4. Application
5. User manual

**Minute:**

During the meeting, design issues with the openers were discussed, but reprinting via 3D printing is possible. Some feedbacks on formatting in the paper was received. The System Usability Scale (SUS) survey still needs to be completed to assess usability. Additionally, the user manual requires improvements for better clarity.

## 14th Meeting (2025-06-12)

**Agenda:**

1. Composting test
2. Application / Smart controller
3. Video

**Minute:**

The moisture of the compost is not dependent on the amount of airflow, and in real-life testing, the parameter measurements consistently showed regression. Feedback on the video was received and will be used to improve the final version. The wiki report still needs to be fully written, and some tips for the presentation were also provided.

# Activities

*Please register here all accomplished project activities*

| Start | End | Task | Description | Who |
|---|---|---|---|---|
| | | | | |