Bi-weekly Blog 4

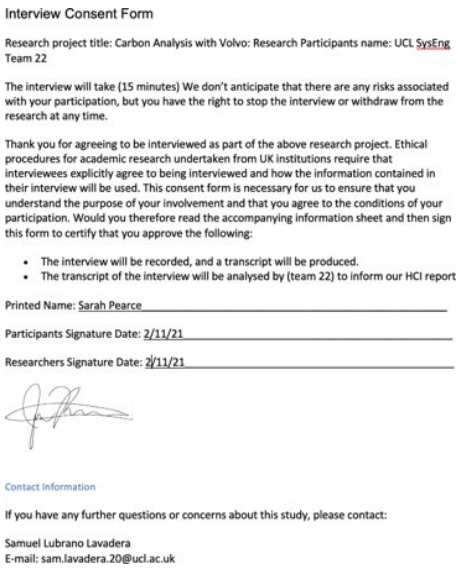
Team 22
Nov. 29 - Dec. 16

1 Progress

1.1 Report Adjustment

In the first week, we made the final adjustment to our report. This include:

- Add an interview consent form beside the interview page to make the steps we survey user requirements more professional.



Interview Consent Form

Research project title: Carbon Analysis with Volvo: Research Participants name: UCL SysEng Team 22

The interview will take (15 minutes) We don't anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Thank you for agreeing to be interviewed as part of the above research project. Ethical procedures for academic research undertaken from UK institutions require that interviewees explicitly agree to being interviewed and how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you therefore read the accompanying information sheet and then sign this form to certify that you approve the following:

- The interview will be recorded, and a transcript will be produced.
- The transcript of the interview will be analysed by (team 22) to inform our HCI report

Printed Name: Sarah Pearce

Participants Signature Date: 2/11/21

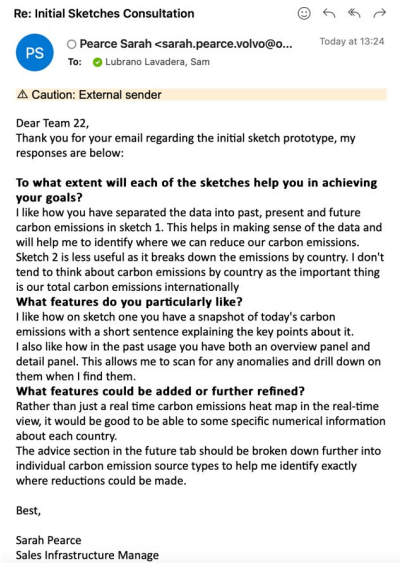
Researchers Signature Date: 2/11/21

Contact Information

If you have any further questions or concerns about this study, please contact:

Samuel Lubrano Lavadera
E-mail: sam.lavadera.20@ucl.ac.uk

- We summarised the advice from peers, mentors and clients on our prototypes, and presented these points as two email feedbacks from the lens of two personas, to make our process look more authentic.



Re: Initial Sketches Consultation

PS Pearce Sarah <sarah.pearce.volvo@o... Today at 13:24
To: Lubrano Lavadera, Sam

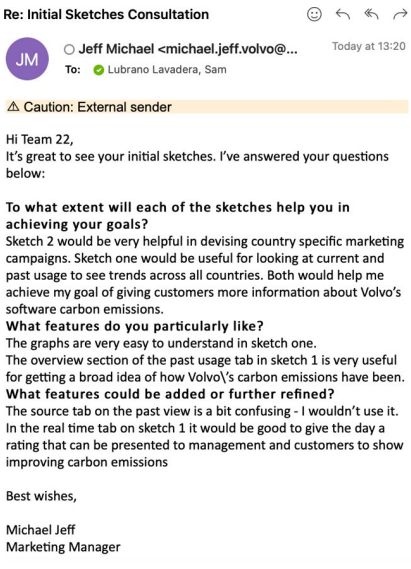
⚠ Caution: External sender

Dear Team 22,
Thank you for your email regarding the initial sketch prototype, my responses are below:

To what extent will each of the sketches help you in achieving your goals?
I like how you have separated the data into past, present and future carbon emissions in sketch 1. This helps in making sense of the data and will help me to identify where we can reduce our carbon emissions.
Sketch 2 is less useful as it breaks down the emissions by country. I don't tend to think about carbon emissions by country as the important thing is our total carbon emissions internationally
What features do you particularly like?
I like how on sketch one you have a snapshot of today's carbon emissions with a short sentence explaining the key points about it.
I also like how in the past usage you have both an overview panel and detail panel. This allows me to scan for any anomalies and drill down on them when I find them.
What features could be added or further refined?
Rather than just a real time carbon emissions heat map in the real-time view, it would be good to be able to some specific numerical information about each country.
The advice section in the future tab should be broken down further into individual carbon emission source types to help me identify exactly where reductions could be made.

Best,

Sarah Pearce
Sales Infrastructure Manage



Re: Initial Sketches Consultation

JM Jeff Michael <michael.jeff.volvo@... Today at 13:20
To: Lubrano Lavadera, Sam

⚠ Caution: External sender

Hi Team 22,
It's great to see your initial sketches. I've answered your questions below:

To what extent will each of the sketches help you in achieving your goals?
Sketch 2 would be very helpful in devising country specific marketing campaigns. Sketch one would be useful for looking at current and past usage to see trends across all countries. Both would help me achieve my goal of giving customers more information about Volvo's software carbon emissions.
What features do you particularly like?
The graphs are very easy to understand in sketch one.
The overview section of the past usage tab in sketch 1 is very useful for getting a broad idea of how Volvo\'s carbon emissions have been.
What features could be added or further refined?
The source tab on the past view is a bit confusing - I wouldn't use it.
In the real time tab on sketch 1 it would be good to give the day a rating that can be presented to management and customers to show improving carbon emissions

Best wishes,

Michael Jeff
Marketing Manager

- We provided an evaluation to the final prototype. It should be mentioned that we set a high severity to our core concepts "data presentation style" and "readability" and implemented them well throughout the process, so their solutions were proposed at an early stage. We also evaluated the aesthetics of our dashboard to create a more user-friendly platform, which has a relatively low severity.

Heuristic	Problem	Solution	Severity
Data presentation style	Having a fixed bar chart means limited data can be displayed and comparisons between more categories are harder	Create a slidable bar chart where data can be sorted by user preferences.	7/10 ●●●●●●●○○○
Aesthetic and consistency	There are too many colours used in the initial prototype, creating an inconsistent aesthetic.	Use the same colour palate for the primary and secondary colours to achieve consistency	3/10 ●●●○○○○○○○
Readability and reducing clutter	The initial prototype is too cluttered with the overview and details in the same page. This results in the user having an information heavy layout, which the user finds annoying.	Design a separate page for the overview and detail, which can be accessed by clicking a button.	5/10 ●●●●●○○○○○

- We have made a number of changes to the layout of the report, combined text and images in a more appropriate way, highlighted keywords in the text to further improve readability.

1.2 Preparation before Implementation

After submitting our HCI report, we have one week left. So we started to prepare some materials that could be shown on our project website, including MoSCoW table, GANTT chart, user case diagram and website building.

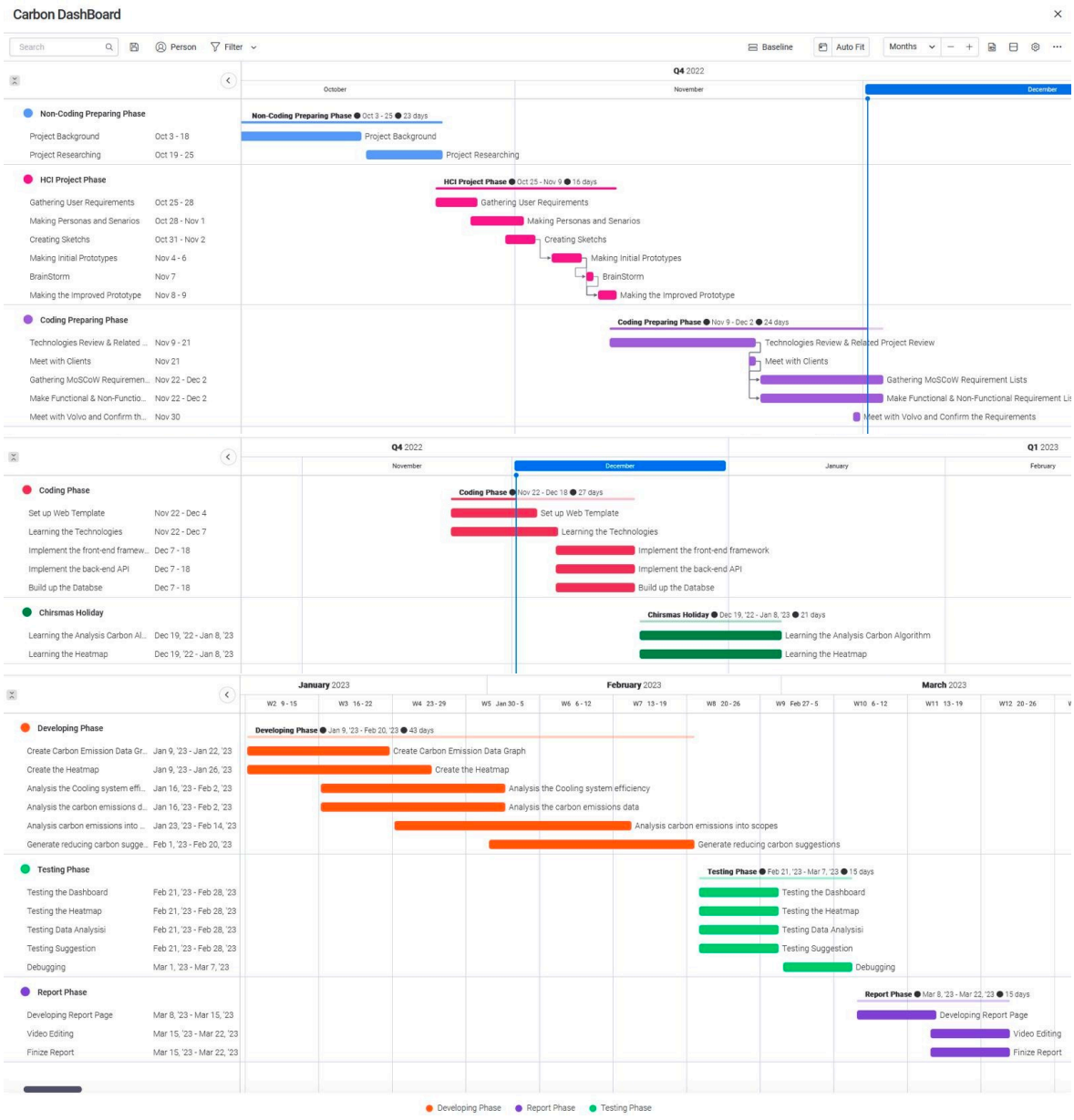
Group Work

By reviewing what we have done in the initial prototype, considering the possibilities of adding extra function, we generated this MoSCoW table.

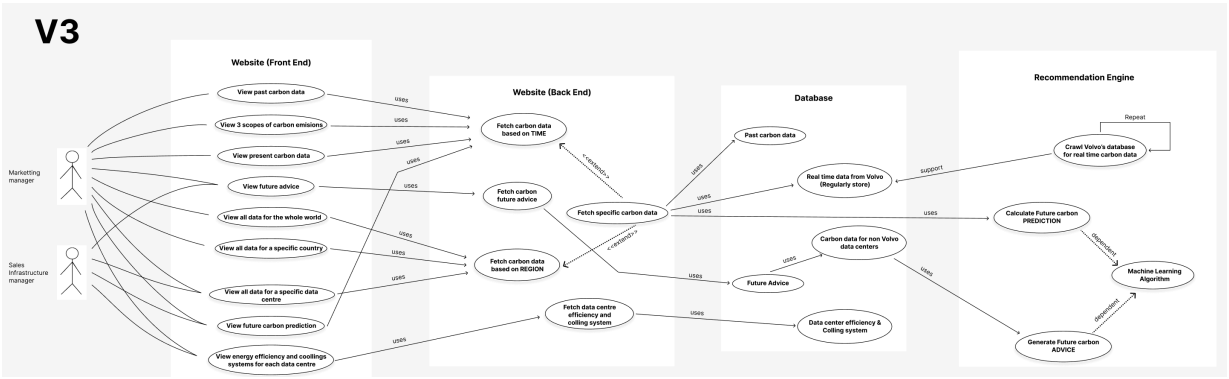
ID	Requirements	Priority
1	Build a website to display carbon emissions from sales software	Must have
2	Display past carbon emissions data using graphs	Must have
2.1	A line graph that displays past emissions from data centres	Must have
2.1.1	Allow the user to select which data centres they want to view on the line graph	Should have
2.2	Displays a chart of past carbon emissions broken down by different emission source	Must have
2.3	A bar chart that shows carbon emission sources based on different countries/regions in the past.	Could have
3	Sort and filter graph by data centres	Must have
4	Sort and filter graph by country	Could have
5	Add cooling system type per data centre	Should have
	Research each cooling system and their efficiency	Should have
	Suggest cooling system upgrades based on their respective prices	Should have
3	Break down carbon emissions analysis by data centre	Must have
4	Divide carbon emissions into scopes 1, 2 and 3	Should have
5	Calculate how much money would be needed to offset the carbon emissions	Could have
6.1	Use machine learning models to automatically generate methods the client could use to reduce carbon emissions per database	Could have
6.2	Use machine learning models to automatically generate methods the client could use to reduce carbon emissions per country	Could have
6.3	Use machine learning models to automatically generate methods the client could use to reduce worldwide carbon emissions	Could have
7.1	Use machine learning models to predict future carbon emission per database	Could have
7.2	Use machine learning models to predict future carbon emission per country	Could have
7.3	Use machine learning models to predict future carbon emission for the whole world	Could have
7	Sort data centres by carbon emissions	Must have
8	Present real time carbon emissions data	Should have
8.1	Break the real-time data down into different emissions categories	Should have
8.2	Calculate how many equivalent flights would we be able to offset if we reduced the carbon emissions by a fixed percentage	Could have
9.1	Multiple language support	Won't have
9.2	Support from mobile	Won't have

Individual Work

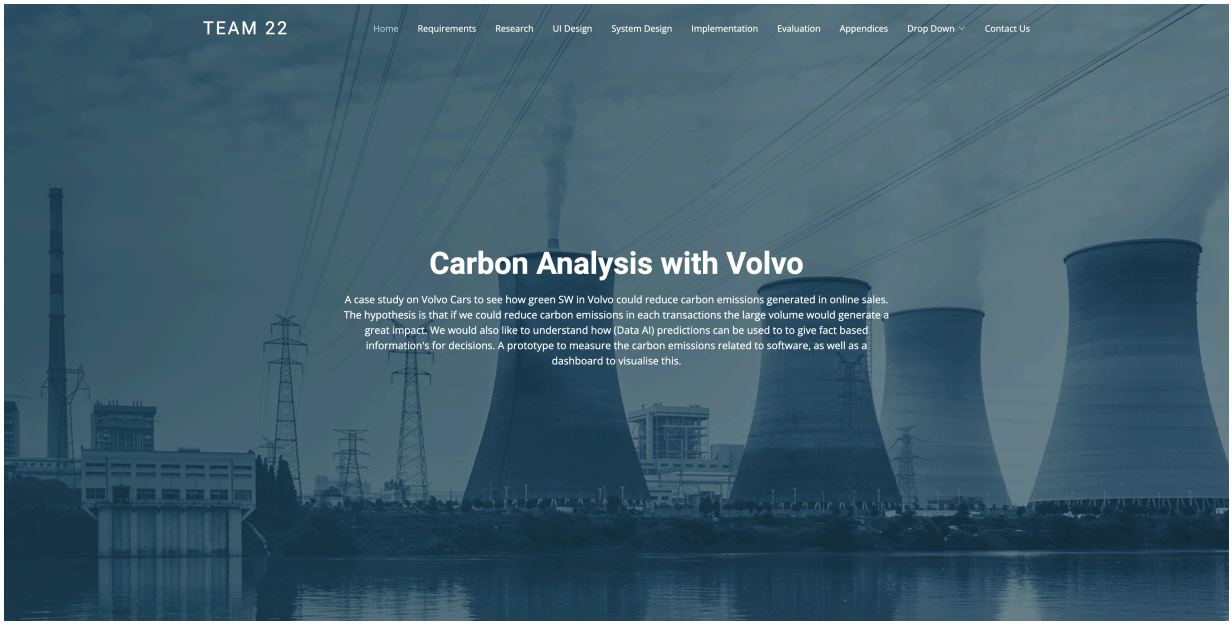
Tony listed what we needed to do next in as much detail as possible and drew on previous examples of similar projects to generate a Gantt Chart.



William and Remit designed the use case diagram for the dashboard. They listed all the client's requirement, classified them into tasks of different components of the system, and found the relation between all tasks across the system.



To introduce all works we have done during every stage of the project, Sam looked at the web of similar project and found a web template that is suitable for exhibiting our project. He modified the home page to introduce our group and project, and added all documents we have done so far.



1.3 Literature review

In the final week of the first term, we assigned each team member a topic of the dashboard to investigate and write a literature review, these including frontend infrastructure, backend infrastructure, dashboard layout design and carbon analysis solution respectively.
Click here for detailed description.