

# **INFO263 Interaction design and prototyping**

**Spring 2022**

**Word count: 3887**



**Candidate IDs**

107, 105, 124, 125

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# Introduction

In a world with a steadily increasing population, the competition amongst companies increases at the same rate. Corners are being cut to stay on top and keep the sales rolling in, and many industries ignore the negative consequences that their actions lead to. One industry this applies to is the clothing industry. Cutting costs and producing clothing in the easiest and most efficient way possible, often leads to lowered focus on the environment and how sustainable the solution is. There is an increasing market for people wanting to choose eco-friendly and sustainable clothing brands when they do their shopping. How can we meet these user needs?

Our solution is a website we call Greenwear. The idea behind the website is to offer a collection of many popular clothing brands and link them to a ranking system of how sustainable the respective brand is. When entering the website the user would be able to get some information about the industry and how it affects our planet, as well as sort this collection in order to efficiently find sustainable clothing brands. Search options will also be in place and the user can swiftly search for his favorite brand and check what ranking it has received.

Since the theme for this project is “sustainability”, we chose the clothing industry due to it being highly relevant in the society we live in today. This is a subject that needs to be illuminated in order to change for the better. We, the team, are also interested in clothing and the subject we have chosen fit us well.

## Background

The textile industry is one of the highest polluting industries and is responsible for 20 percent of all global water pollution due to dyeing and textile treatment. A big part of the textile production is based in China where they get their energy by burning coal. Textile factories in China alone are responsible for over three billion tons of soot-air pollution. The current etiquette is not sustainable at all, but because it is cheap and not talked about enough, the market continues to be saturated(Keane).

On the web there are a couple solutions similar to ours that already exist. There are articles online that do listings of sustainable brands, for example an article on (Prokos, Byrdie 2022). This article basically lists the brands and displays information about them, and gives you the option to navigate the pages of the brands from the article. There are a lot of similarities between our solution and theirs, however our website will include more features and be solely dedicated to the collection of brands. Our ranking system will be heavily backed by fact-checked sources, but

users of the site will also be able to leave feedback and potentially affect the ranking system of brands.

Zalando is another example of similar solutions out there. On their website you can filter clothes by how sustainable they are. Since Zalando is an online marketplace for clothing the solution they have makes it easier for users to buy sustainable clothes, since the users have the option to purchase directly from their website. However, they do not offer any additional features. Our solution will offer more information and a better overview of the brands. The biggest difference with our solution and other ones out there is that the whole purpose of our website is to list these brands, where others only have a small blogpost or article (Zalando, 2022).

## Plan of design & development

The team consists of 4 informatics-students familiar with fullstack-development and agile software development. Going forward, we will mostly use figma for our low- and high-fidelity prototypes and design process. The idea of a website displaying sustainable clothing brands came to us quickly. We all share an interest in clothing and found out there is no, at least to our knowledge, websites that currently has an organized collection of clothing brands and a sortable list of how sustainable the respected brands are.

In the early stages of the project we will brainstorm how we think the project should be done, and get a few design ideas on the table. We will also get an overview of the users wants and needs, and will structure our tasks and goals based on what we think would bring value to our users. Public surveys and user involvement will be used to disclose some of the most important aspects. Our end goal will be to have a fully functioning website written in HTML/CSS hosted under a fitting domain.

## Design methods and user involvement

Before we started the design process we wanted to have a proper plan on how we could, in the best way possible, pursue this project and what type of design methods we would use. We had a couple early-stage meetings where we sat down together and brainstormed different types of ideas and techniques we wanted to use for this project. We all had different ideas in mind and noted down most of them for later use, but we all agreed on two major points: design thinking process would be of utmost focus, and the user and his needs would be the foundation of our design. Being able to disclose user needs along the way and perform continuous development to adapt

and redefine our design was important to succeed and end up with an application that will be well-used and well-met by its end users.

In our design process we used methods such as prototyping, user stories, personas, sketching and brainstorming. For our prototypes we used both Lo-Fi and Hi-Fi prototypes. Lo-Fi prototyping early in the design process allowed us to easily convert our idea to something tangible. User stories and personas were frequently used to disclose user needs and find the target group for our specific idea. We also did more brainstorming sessions throughout the project to see if we met the users needs, and to think of possible additions.

## User testing

After we had chosen one Hi-Fi prototype that we wanted to focus on, we started planning out how we would include the users in the design process and how they could improve our prototype. The prototype we chose was written in HTML/CSS and hosted on the web.

We had two plans in mind. The first plan was to find people in our target group and hold short but precise informal conversations about our design and ideas with these people. We had dialogs with fellow students, professors and friends in order to get a better variety of feedback. Through these conversations we noted down some key takeaways when it came to color palettes and intuitiveness.

The other part of our user involvement was to have a more indepth meeting with some users and have them sit down and navigate our design from start to finish. We performed this based on Nielsen's heuristic evaluation principles when it comes to usability (Nielsen, 2012). We observed and listened to the users, and just like our informal conversations we noted down a couple key takeaways.

It was clear from our user testing that we had done many things right when it comes to learnability, memorability and efficiency. Our users did not encounter many problems here and thought the solution was self-explanatory and intuitive. New users that had never looked at the app before would easily navigate their way to the brands page and start using it in the planned way. Some errors we encountered came from users wanting to test the app on their phone and tablet - seeing as we had not yet implemented mobile support, our website became distorted and wrongfully scaled due to this. When it came to user satisfaction we received some good feedback that we ended up including in our final prototype. Our "Check Out" button on the landing page was originally gray. Some users meant that this was a bad color for a button that takes you to the product, and that a button of this power should stand out. This resulted in the changing of the button from boring gray to powerful green.

## Step by step explanation of our design process:

As mentioned above, the first part of our design process was ideational brainstorming of what we wanted to create and what type of functionality our application needed to have in order to bring value to our users. We all wanted to have a modern looking, clean and informative website where our idea would be highlighted. A landing page with some information about the project that consisted of modules and user friendly design that would eventually lead the user to a different page on the website where the product itself was located, this in a self explanatory way. An about page about the idea and the team had to be included, and a page consisting of the sources to where we got our information from in order for users to fact check what our website displays.

The second part of our process was creating user stories, personas and scenarios for our design. Here we tried to create artifacts representing the most frequent users in our target group. Our goal with these artifacts was to get an overview of what value the different functionalities we would add to our product would bring to its users, and how it would solve their problems or day-to-day needs.

For the third part we started with our Lo-Fi prototyping. All of us created our own design in order to get as many creative ideas out there as possible. We eventually chose one of them in the end to become our Hi-Fi final product. Some of us went back to basics doing some sketching on pen and paper, while some of us used Figma, a great wireframing and sketching tool for designing.


The final part of our process was to design the Hi-Fi prototype, the prototype that would be the closest to our finished product. Unlike the Lo-Fi prototype, the Hi-Fi prototype is all about details and eye appealing looks. From the Lo-Fi prototyping we had most of the functionality in place, but the design was at this time not very pretty and appealing. This was fixed in the Hi-Fi prototyping where color palettes were put in place and an overall modern look were added. Having the Lo-Fi designs in the back of our minds, we took these with us into the design of the Hi-Fi prototypes, and this became more of an extension of the Lo-Fi designs. Some of the team continued the development in Figma since this app comes in very handy when you want to make swift changes to your design in the most efficient and easy way possible. Here, one design was also taken from pen and paper and Figma, over to HTML/CSS and had an almost fully functional version of the product hosted online.

In the following sections our artifacts and different types of designs will be displayed in order to shine more light on how our design process went.

# Artifacts

## Personas

**Fredrik Karlсен**



AGE24

EDUCATIONComputer Science

STATUSSingle

OCCUPATIONIT consultant

LOCATIONOslo

TECH LITERTEHigh

**Bio**

He lives in Oslo. Just finished his degree in computer science and landed a job in a consultant company. He is single and likes to go out with his friends on the weekends.





**Core needs**

- A certain quality in clothing and premium brands
- Clothing fit for social occasions
- Service needs to be easy to use

**Frustrations**

- Research on sustainability can be tedious
- Too tired of much of his clothing
- Bad website design

**Brands**





**Personality**

Extrovert



Thinker

**Payment medium**




Cash/ChequeDigital Payment

**Platform**



WebsiteMobile App

**Katrine Pettersen**



AGE22

EDUCATIONBusiness

STATUSRelationship

OCCUPATIONSales assisant

LOCATIONBergen

TECH LITERTEMedium

**Bio**

She lives in Bergen. Currently studying for a bachelor in business. In a relationship and likes calm weekends with friends and a lot of cafe visits.





**Core needs**

- No new clothing otherwise its sustainable
- Good materials used
- Good overview over the website

**Frustrations**

- No services that compares brands from sustainability
- Brands claiming to be sustainable when they're not
- Only know a couple of brands

**Brands**





**Personality**

Extrovert



Vegetarian

**Payment medium**



Cash/ChequeDigital Payment

**Platform**



WebsiteMobile App

## User stories

- As a user I want to purchase clothes where the brand is environmentally friendly so that I can help prevent global warming.
- As a user I want to have an organized collection of environmentally friendly brands so I can use the least amount of time looking for it myself.
- As a user I want to be able to rate a brand's commitment to the environment such that others can get an idea of how environmentally friendly a brand is.
- As a user I want to make small environmentally friendly choices throughout the day so that I feel like I help prevent pollution.

## Scenarios

- IT Consultant Fredrik Karlsen wants to only buy clothing that is environmentally friendly. As money is not an issue, he has no problems with paying extra for premium brands to ensure this. He doesn't like spending time reading up on this subject himself, so he wants a website that does all that for him. To reach this goal Fredrik wants a source where many brands are collected in one place to easily distinguish environmentally friendly ones as he has little spare time.
- Katrine Pettersen has some spare money and wants to go online shopping today. She is very environmentally conscious and wants to choose an environmentally friendly brand. Katrine opens her browser and goes to the website [greenwear.com](http://greenwear.com). The website shows her the most environmentally friendly brands in a sorted order, and within minutes Katrine has chosen a brand she is familiar with and ordered five pieces of clothing. Katrine then goes about her day, feeling good due to her smart and green choice of shopping.



# Prototypes

We wanted every member of the group to design their own version of the website, this to get more ideas to the table and get an overview of how others in the group were thinking. We went on to choose one sketch on pen and paper, one wireframe and one Hi-Fi prototype. These are featured, in an organized manner including design rationale, in the following section.

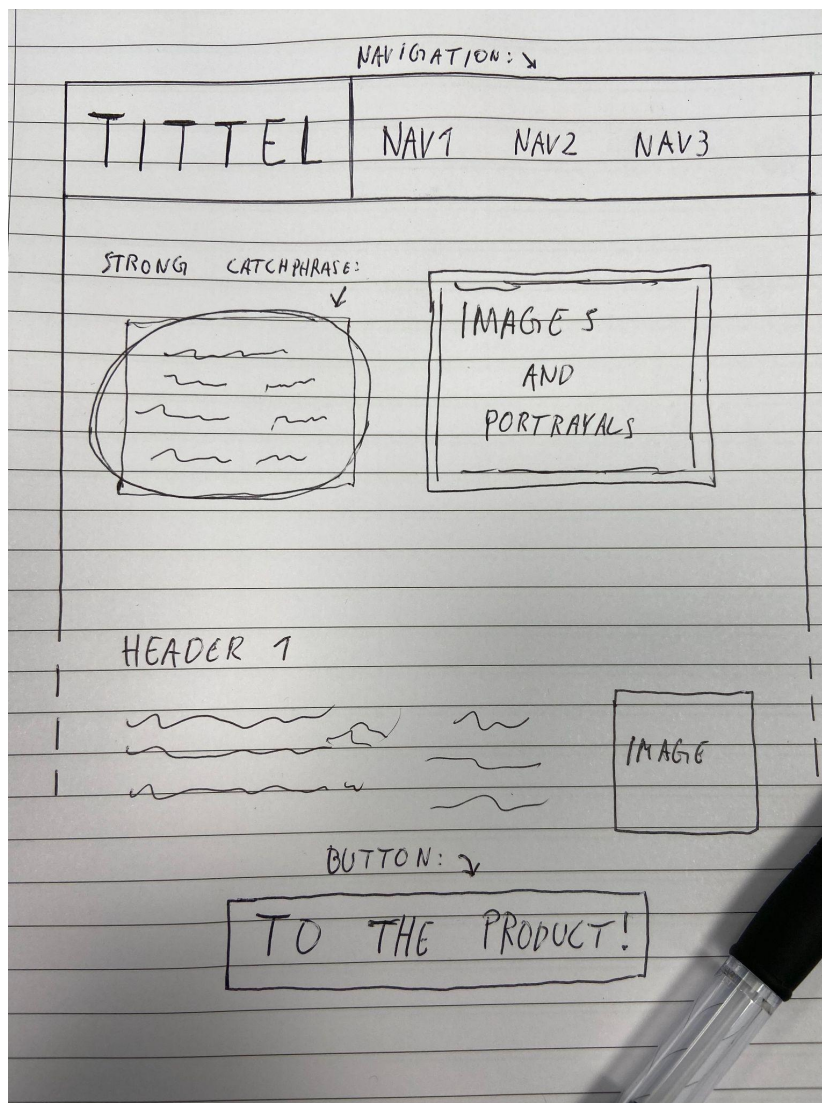
## Lo-Fi

When creating a Lo-Fi prototype, the main focus is to translate your concept to something tangible, and in the simplest way possible, the reason for doing this is so you can easily change or scrap the idea. What a Lo-Fi prototype should have is very much up to interpretation. However, the most important thing is to have something tangible to refer to. This could be a sketch in a notebook or a design created using digital software. We will discuss the Lo-Fi prototypes we made, and our reasoning behind them below.

### **Sketching - pen & paper**

We went back to basics and did some low fidelity sketching with pen and paper, keeping it simple. Here, the focus is to get the main parts and functionality of our idea out - this part is not supposed to be very appealing to the eye and does not have any good looking color palettes or images. We made two sketches: the landing page of our application and its actual product/brands page:

Landing page:



A good looking and eye-catching landing page is important in order to get hold of the users attention. We created a header consisting of the title/name of the website and a navigation bar. The first elements under the header would be a precise text that tells the user what this is and why he should stay, as well as some images fitting the text. Next, some more information about what this website is and its goals and a button that takes the user to the actual product. Giving the user options is good and gives him a sense of freedom and control, hence the navigation bar and button.

Brands page:

SAME AS LANDING PAGE

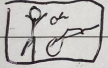


HEADER: ↓

BRANDS/PRODUCT

TABLE: ↓

SEARCH - BAR

SEARCH

NAME/LOGO	ABOUT	RANKING
NAME 1	TEXT	
 LOGO	~~~~~	57
NAME 2	TEXT	
 LOGO	~~~~~	92
NAME 3	TEXT	
 LOGO	~~~~~	15

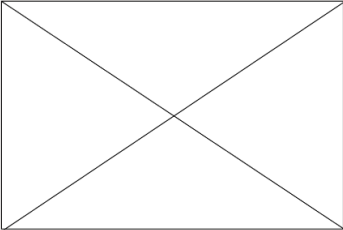
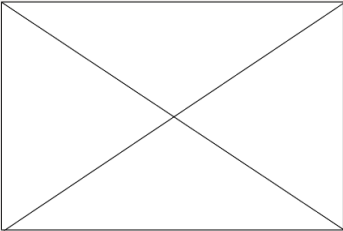
RANKING: 0 - 100

This is where the product is located. We have a nice little header explaining what this page consists of, and a table with all the brands, information about the brand and their ranking. The table is supposed to be searchable on name (alphabetic) and sortable by rank (ascending and descending). Again, giving the users options and he can himself choose what he wants to see and how he wants to see it.

## Wireframing

Greenwear	Brands	Contact
-----------	--------	---------

Searchbar

Name	Info	Score
	<div>Brand 1</div> <div>Information about the brand</div> <div>Link to store</div>	1-100
	<div>Brand 1</div> <div>Information about the brand</div> <div>Link to store</div>	1-100

email

phone number

The wireframe is based on the sketches, aiming to make the design easier to look at and understand. How this wireframe came to be from the sketches is explained above and how it evolved into the Hi-Fi prototypes can be seen further down.

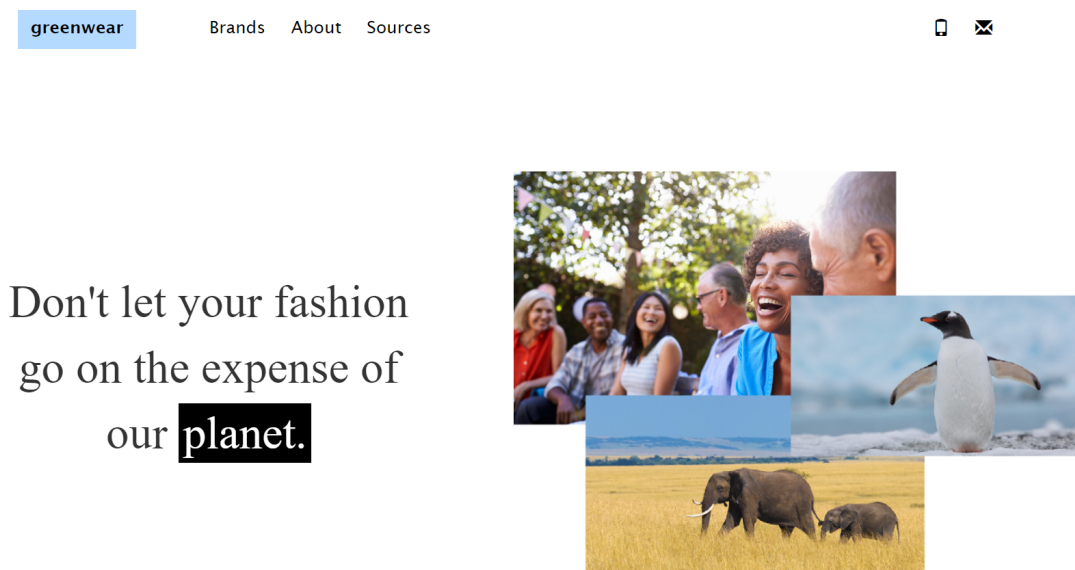
## Hi-Fi

A Hi-Fi prototype is a computer-based representation of a product in its closest resemblance to the finished article. The prototype should contain all the functionality the finished product will have such that the prototype will give the developers an indication on how the webpage will turn out. We have made four different Hi-Fi prototypes based on the Lo-Fi prototypes from the last section. In this section we will go through the one Hi-Fi prototype we chose and explain our design rationale.

## The prototype

The following prototype first came to light in a Lo-Fi version on the simplest form we have, pen and paper shown in the Lo-Fi section above. It was then redefined and improved in HTML/CSS with all the details we wanted to include. Color palette and beauty was also in focus in the following design. Design rationale and explanation behind the different elements has been added on each of the screenshots.

### 1. Landing page, top of page:



### Design rationale:

- Do not display **too many** elements and do not bombard the user with tons of information immediately. Studies show that human brains are not designed to multi-task, and humans can only process and focus on 3-6 different things at the same time. Here we have a navbar, some short text, a picture collage and a contact section in the top right. Total of 4 elements.
- Let the elements breath and give a fair amount of **air** between the elements. This looks more clean, the website will look less crowded and the elements we have will be pushed more forward (contrast). Now we jump straight to the point and there are no “unimportant” elements in the way to steal the attention.
- The navigation bar gives the user **options**. He is not stuck on that page and knows he can easily navigate and perform actions if he wants to. Having interactive functionality on the site allows for more user interaction.
- The first thing the user sees needs to catch his attention in the matter of seconds. Humans lose focus fast, and a **strong catchphrase** to keep them connected is important. Therefore, the top of the landing page has a short but

precise text and some supplementing images, and not tons of stuff to distract the user.

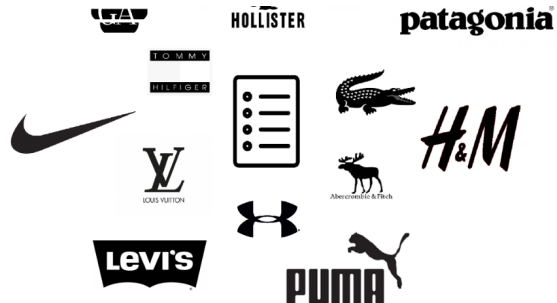
2. Landing page, scrolled down to the bottom where the “Brands” button is located, the button that takes the user to the actual product:

Choosing a clothing brand with the least impact on our climate can be hard.

We have made it **easy**.

Our sorted list of 40+ brands:

[Check Out](#)



### Contact

hi@greenwear.com



+47 123 45 678

### Design rationale:

- Same as mentioned above, we do not display too many elements at the same time, and we do not crowd them together. We give them air and space.
- Here we also give the users options. He can click the “Brands” button and will be navigated to a different page where the product itself is located. More interactiveness.
- Clear choice of **colors**. The button “Brands” is colored green, a color many people will be attracted to and will look at as a “good” color. This green is not used anywhere else on the website, and is exclusive to this button.
- A footer with a different color of the background has been added. This is to clearly tell the user “this is the bottom” and **wrap** the page in a header, main and footer part. Here, which is common practice, we also put our contact details.

### 3. Brands page, the actual product:

brands.

a		
Name	Info	Rank
<b>Patagonia</b> 	<ul style="list-style-type: none"><li>• 2500 employees</li><li>• 200 stores</li><li>• Notable actions for the climate: x</li><li>• Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book.</li></ul> <p>Click <a href="#">here</a> to go to their store</p>	2
<b>Armani</b> 	<ul style="list-style-type: none"><li>• 2500 employees</li><li>• 200 stores</li><li>• Notable actions for the climate: x</li><li>• Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book.</li></ul>	4






#### Design rationale:

- We display some text with info about the brand, but to avoid the page becoming too boring with text only we also included the logos of the company. This gives the page more color and “life”. It also helps the user to recognize the brand faster seeing as most of these logos are being branded at a lot of places we visit daily, both online but also in the real world.
- The search-bar gives more options and power to the user and he can quickly search for brands if that is what he wants to do. This makes the website more interactive.

## Other prototypes

In the design process we made three other Hi-Fi prototypes with tweaked designs. After a group decision we decided to go with the prototype above.

### Prototype 2

greenwear	brands	contact	about	Q	✉
	Nike	75	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
	Adidas	75	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
HOLZWEILER	Holzweiler	90	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
	H&M	35	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
	ZARA	45	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
	Polo Ralph Lauren	65	<a href="#">Go to brand</a>	<a href="#">Shop now</a>	
<div>hi@greenwear.com</div> <div>+47 980 59 427 mon-fri 10-15</div>					



## Prototype 3

Greenwear

[Home](#) [Brands](#) [About](#)

### Brands

Here we have listed to most sustainable brands

Z A R A

Lorem Ipsum Dolor Sit Amet,  
Consectetur Adipiscing Elit. Nullam  
Vulputate Turpis Sagittis, Interdum  
Lacus Ueros Sodalibus Efficitur Quis  
Iaculis Risus.

AFENDS

Lorem Ipsum Dolor Sit Amet,  
Consectetur Adipiscing Elit. Nullam  
Vulputate Turpis Sagittis, Interdum  
Lacus Ueros Sodalibus Efficitur Quis  
Iaculis Risus.

## Prototype 4



### Brands

1.		Adidas	
2.		Nike	
3.		Puma	
4.		Umbro	

# Our design

As previously mentioned, there are really no notable existing solutions doing solely what our idea is doing. The only thing for comparison would be the blogpost article we mentioned or Zalando's sustainable page which is mentioned in the reference section down below. However, none of them have all of our features combined.

One of the limitations of our service is that we don't offer a service for buying clothing directly from our site. This can lead to a lot of users not using the site since it can be viewed as an extra step they do not necessarily want to take. Our site is also dependent on users for aspects like reviews and ratings to make the site work as intended. Our design is also not optimized for mobile and tablet and would need some more work to look good and have a responsive design on these platforms.

In the future there would need to be more focus on colorblindness and people with reduced eyesight, making all graphical objects and UI elements have at least a contrast score of 3:1. It is important to make websites that everyone can use, on any device, and this is probably our main goal for future development. In order to correct this we would focus on using universal symbols to make it easier for everyone to navigate the website. We would also focus on making the website compatible with equipment used by people with disabilities i.e refreshable braille.

Most of the feedback we received from our user involvement was positive, but we did get some feedback that changed both our way of thinking and our design. Adding mobile and tablet support is something the users wanted, which is something we will focus on with future development. We also changed the color of the "Check Out" button from gray to green based on the user feedback, something the team all agreed was for the better.

As we see it, there are no major ethical concerns. We do not try to trick the user into doing something they have not consent to. There are no dark patterns or gamification in our design to make the user spend more time or energy on the page than expected. No elements are hidden behind a paywall and no attempts to maximize profits are present. Our design is honest and straight to the point, and no monetization or personal gain for us is in the picture. However, one concern that could occur is that people could question how good the judgment of four IT students with no relevant background in the field can judge and determine what ranking a brand should have.

# Summary

From brainstorming and ideation in the early stages, to Lo-Fi sketching with pen and paper and taking that idea further with a Hi-Fi prototype that is now hosted on the web, we think that our work turned out very good and up to industry standard. Throughout our entire design process we have focused on interactiveness and how our choices affect the user. There is still tons of stuff that needs to be done and features that need to be added, but looking back to the early stages of this project and accounting for our final deadline, we met every criteria we originally set.

It is clear after working with how sustainable the clothing industry is and learning more about it that this is a subject that needs to be illuminated. In order for positive change to happen people need to speak up and ideas must be put into action. Hopefully, our solution will influence users into making a more sustainable and thought out decision.

Our final prototype and its design is backed by popular design methods, and our design sprint consisted of both low and high fidelity prototypes, user stories, personas, user involvement, design rationale for our decision and much more. It has been a fun and valuable journey, and the foundation for a more mature version has been set.

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