Noroff
School of technology and digital media

Technical Report

Project Exam 1

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Word count

Summary: 203 | Main text: 3694

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1. Summary

The goal for this exam project is to "create a microsite for SpaceX/NASA to raise awareness about space program activity around the world. The site should appeal to a specific tartet audience and provide links to more information, live feeds of launches, and so forth"[1]. It also needs to use javascript to connect to an API for dynamic data and to use HTML/CSS for styling and construction. A HTML5 contact form with javascript is also required for the microsite. The site also need to be easy to use and conform to WCAG standards.

In which case I chose to create a microsite for SpaceX for a target audience of young adults / students between the age of 18 – 28. The main purpose of this microsite is as mentioned to "to raise awareness about space program activity around the world". That's why the design will need to be modern and appeal to the specific target audience so the content is easily consumed that way.

This report will contain my planning process, the research phase, interface design and the actual development of the website and at the end of the report I will give a conclusion with a self evaluation.

Link to Website
http://papermemo.one/Frontend-development/pe1/spacex/

Link to github repository
https://github.com/MarSkor/Project-Exam-1-FED

[1] Noroff – Exam Project 1

2. Body

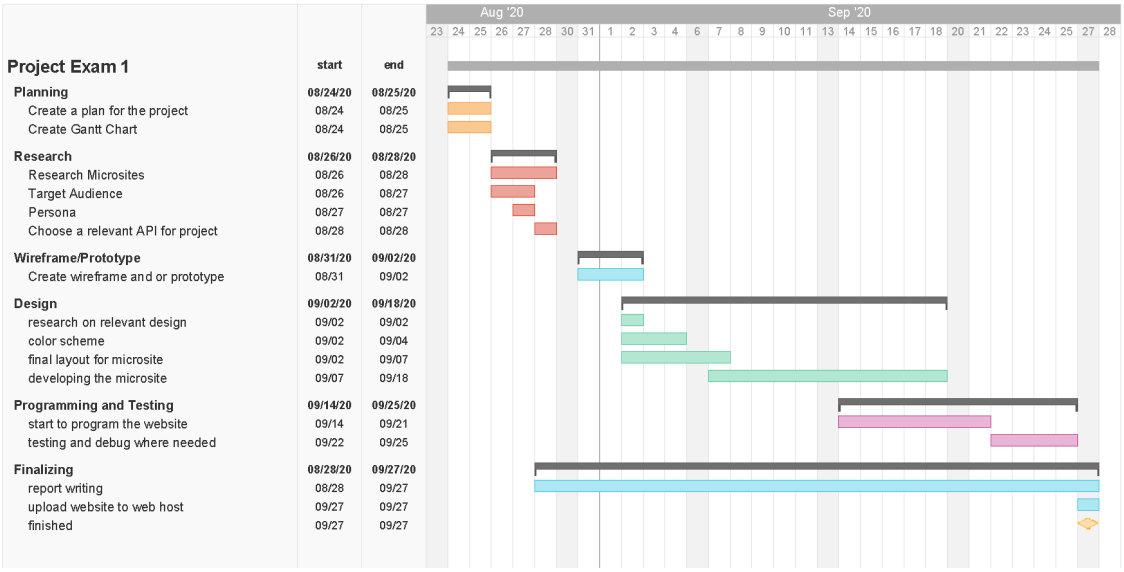
2.1. Introduction

The goal for this exam project is to "create a microsite for SpaceX/NASA to raise awareness about space program activity around the world. The site should appeal to a specific tartet audience and provide links to more information, live feeds of launches, and so forth"[2].
Which means that for this project I will have to put all the courses we have been through to use.
In the main section of the report I will first go through the planning process, then I will move on to research phase which include interviews and the making of personas as well as storyboards. After that I will go through the design and development process, which will include thoughts on the design, typography, color palette, content strategy, WCAG. Following interface design meaning affordances, the navigation, persuasion, wireframing/protoyping. Lastly, I will go through the programming and testing phase. And at the very end a self evaluation on the whole project.

2.2. Main section of report

2.2.1 - Planning

The very first thing I did on the project was to plan what I needed to do when. Naturally, I created a gantt chart first to get a overview on the whole process. The gantt chart contains start and end date on the different tasks.



Project Exam 1	start	end
Planning	**08/24/20**	**08/25/20**
Create a plan for the project	08/24	08/25
Create Gantt Chart	08/24	08/25
Research	**08/26/20**	**08/28/20**
Research Microsites	08/26	08/28
Target Audience	08/26	08/27
Persona	08/27	08/27
Choose a relevant API for project	08/28	08/28
Wireframe/Prototype	**08/31/20**	**09/02/20**
Create wireframe and or prototype	08/31	09/02
Design	**09/02/20**	**09/18/20**
research on relevant design	09/02	09/02
color scheme	09/02	09/04
final layout for microsite	09/02	09/07
developing the microsite	09/07	09/18
Programming and Testing	**09/14/20**	**09/25/20**
start to program the website	09/14	09/21
testing and debug where needed	09/22	09/25
Finalizing	**08/28/20**	**09/27/20**
report writing	08/28	09/27
upload website to web host	09/27	09/27
finished	09/27	09/27

[2] Noroff – Exam Project 1

The first week would go to planning, research and getting ready to design the microsite. As well as writing the functional specifications. This would all be done by the 28th.
The second week would go to more in depth research and the development of my personas, the scenarios and storyboard. Which will all help with content strategy for this microsite. Before the second week is over, the prototype and a wireframe of the site would be created and tested.
The third week the developing of the site starts and the visual profile start taking place of the site. The site also gets tested as its still in a prototype state so when it pass that the coding phase starts, meaning HTML and CSS.
The fourth and fifth week have gone to make sure the site is responsive and started the javascript for the site. A lot of testing and debugging as well. And at the end of week five the report and website will be ready to be submitted.

2.2.2 – Functional Specifications

So the functional specifications for the SpaceX microsite is as follows;
What must the system be able to do? Meaning, what are some requirements for the website that it should have? And how it functions.

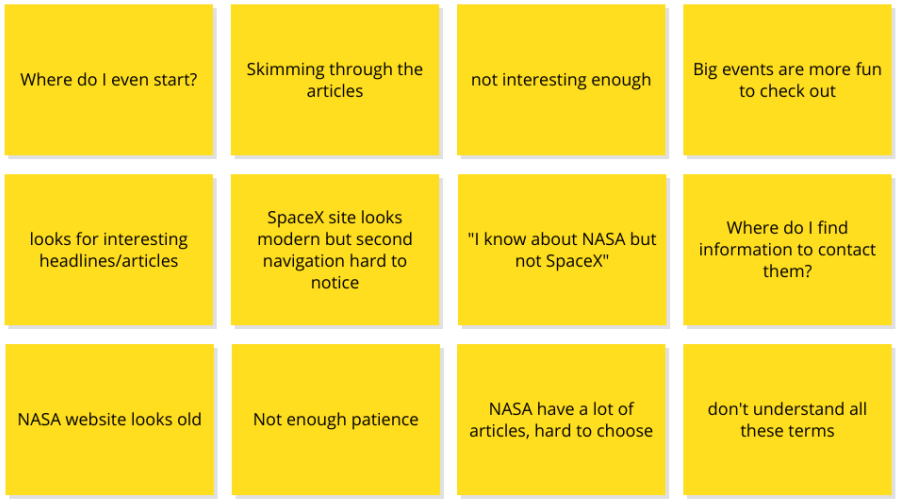
- The system must have a homepage
- The system must allow user to fill in text
- The system must allow user to search
- The system must approve of email address
- The system must allow user to send in questions
- The system must show a timeline of history
- The system must allow user to click on more information
- The system must be responsive

2.2.3 – Research Phase

Before I started any design process, I went and looked at other microsites for inspiration on what they contain and how the content is displayed. Microsites are ususally only made for a single purpose be it to promote a product or to just simply showcase something for a company. (6.1 - Example Microsites for Inspiration). After having compared different websites I went to NASA's and SpaceX's main websites. After having thought on for who I will make a microsite for, I decided to make the microsite for SpaceX. This would also be an opportunity for me to learn more about SpaceX and their goals seens as I'm already somewhat familiar with what and who NASA are. SpaceX have a lot of focus on technology and the details surrounding that, and to present it in a alluring and appealing way.Their website is very tidy and have a very modern look and feel to it when you compare it to NASA's website. NASA's site have a lot of heavy content and might not look very appealing especially for younger audience. The language is not very simplified and overall have a very old look.

The target audience for the microsite I'm creating is between 18 – 28 years. They might have above average of knowledge about space technology and their overall interest could range from slightly interested to very interested. Usually when they search the web they know what they are looking for be it on the phone, pc or tablet, at their school/work place or home. Most of the target audience already have a career or might be looking for a path to go, they could also just be very interested in space technology in general. Regardless, the purpose of this microsite would be to further ignite the interest or just to make the information easily accessible. Which is also why the site should be modern and look appealing to the target audience. It also needs to work on different platforms and not just phone or pc.

2.2.4 – Interviews



I managed to get 1 to participate in the contextual inquiry method and 2 interviews. I asked the participants how they would receive and discover information about any space launches. The most important questions I wrote down for them was;

motives

- How does one capture your interest?
- How interested are you overall in space and space techonology?
- When/if you choose to look up information on space, what website do you or would you go to?

goal

- Is there any specific information you look up in articles?
- What are important details for you?
- What do you wish to achieve from a space (micro)site?

challenges

- How challenging is the websites?
- Is there anything you found difficult?
- Do you feel like the website require more from you?

2.2.5 – Personas and Storyboard

Kari Nordmann

Age: 18

Occupation: Student

Interests:
- Friends
- Technology
- Design

Goal: Kar was given an asignment to write more about SpaceX and more major events that had occured to them. Which is why she wants to find a easy readable timeline that could help her with this.

Concerns: Big chunck of text can be very distracting for Kari and take her away from her goal.

Ola Nordmann

Age: 27

Occupation: teacher

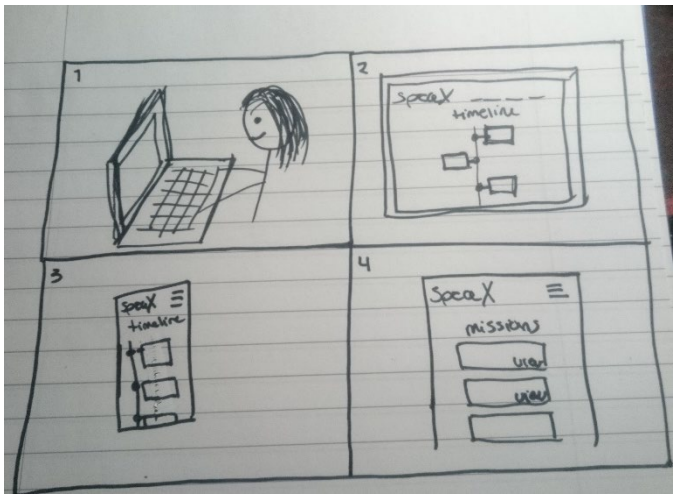
Interests:
- Sports
- Gaming
- Space

Goal: Ola was given an assignment to write about space launches and detailed information about them. Both upcoming launches and previous ones to present to the class.

Concerns: Ola don't like wasting time and like it when he can easily grab information from websites.

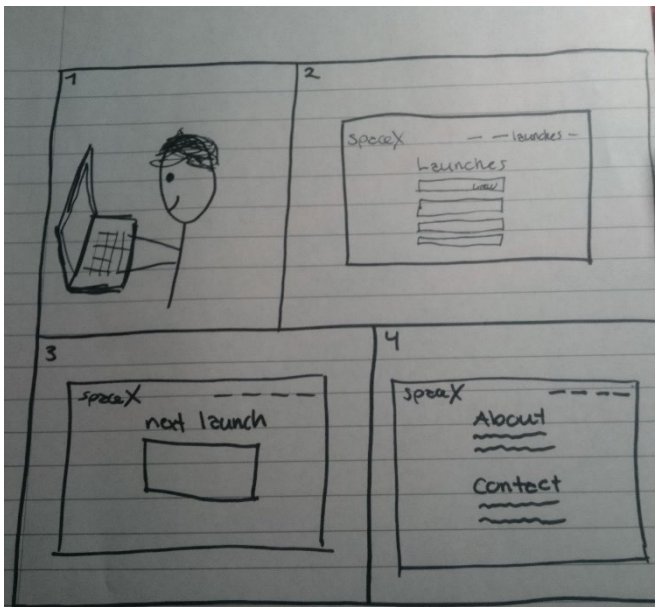
After finishing the interviews and going through the target audience I managed to create two types of personas. They have different characteristics and young, one is a student and the other one is a teacher. I have included basic information about them as well as what their goal and concerns with websites.

So first up we have Kari Nordmann, she is a student who needs to find information about space launches for a school project. She is interested in technology and only somewhat interested in space but she want to power through regardless and find the information she needs to complete her project. Kari is efficient when it comes to browsing the web and knows what to look for which which also causes her to give up when a website is not that tidy or easy to use.



1. Kari had a little time to search for any space launches and just when she 2. found a website she could use she had to leave for a appointment, but on the way there she took out her 3. phone to check if it was still easy to use. 4. So next she opens the timeline because she needs more about SpaceX and any major events.

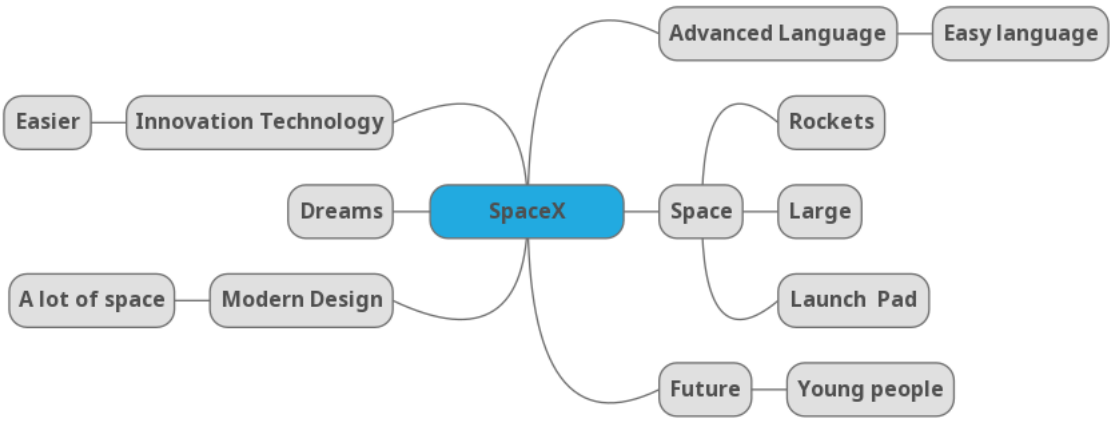
Then there is Ola Nordmann, he is a teacher who have high interest in space and their technology. He needs to find information about all space launches so he can present them to his class. Ola don't like wasting time and prefer when the content is presented in a way so that it is easy to share with others as well.



1. Ola is at home preparing for his upcoming workday where he is going to present information to the class he is teaching.
2. He open the website and browse through the homepage making a quick overview of the site before heading to 3. Upcoming launches. 4. After looking through the launches he goes to check the contact page, it was easy to find because the navigation on the top was easy to use and very visible.

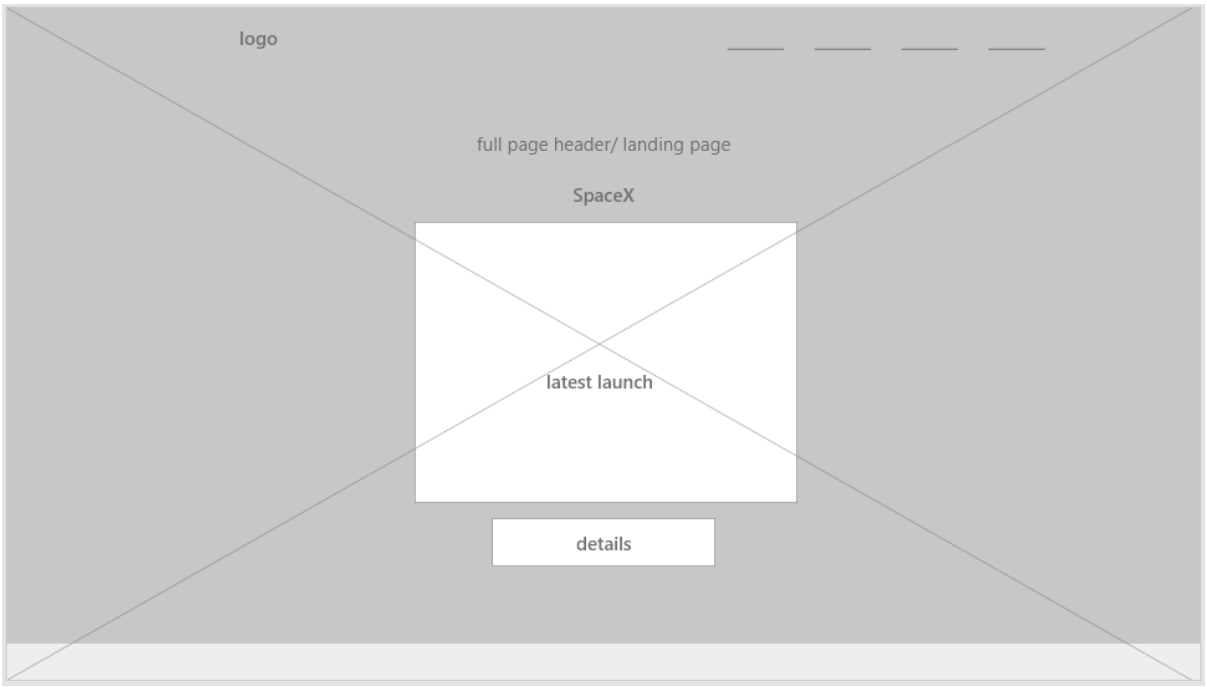
2.2.6 – Design

I started with creating a map to get an overview of what and how the design would be. We know that SpaceX is a big company that have set big goals when it comes to traveling to space. And I thought that since space is big, having a full sized background on the site could help reflect that, and the background image being from a SpaceX launch. No large chuncks of text and the text have to be easy to read and only have the most imporant from the company. It should be simple, modern and create a good user experience.

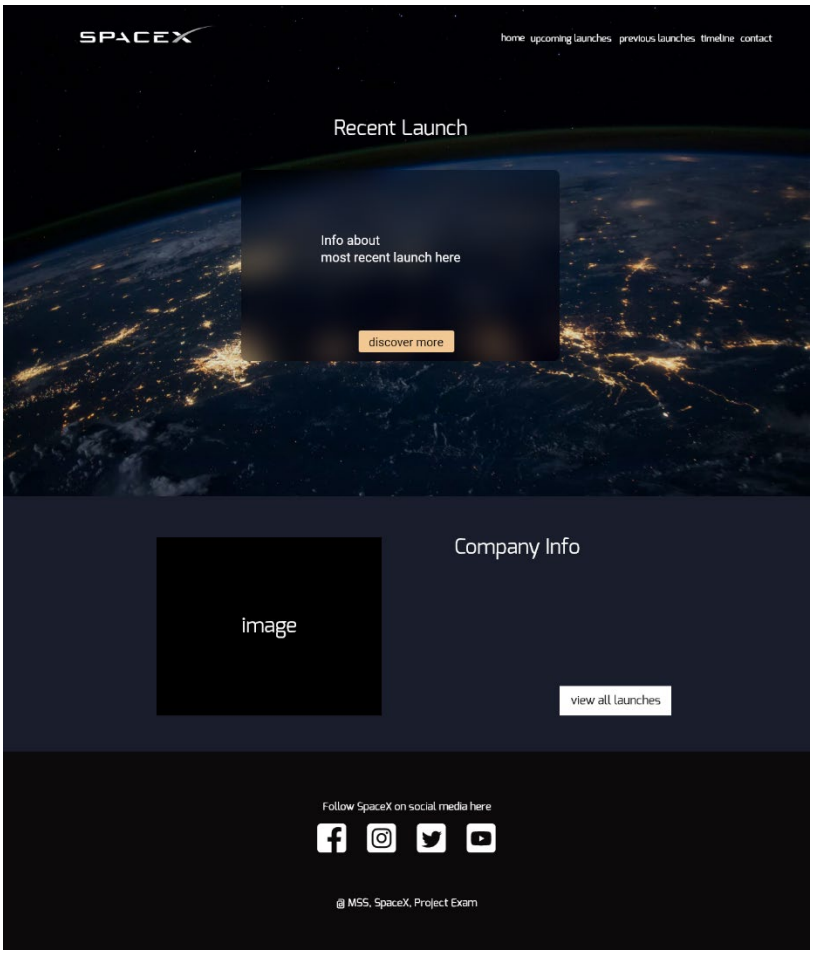


2.2.7 – Wireframe/Prototype

Before I created the prototype I created a wireframe for the site. The wireframe works as the skeleton for the site and is great help when figuring out how to build up the site/page.



Originally, I planned a more black/blue colored theme for the site – and this was used in the prototype, so the only thing that is changed from the prototype to the final design is the colors and the background – which was changed to one of SpaceX's own images from a launch (see Figure 1 – Final Design, Background).



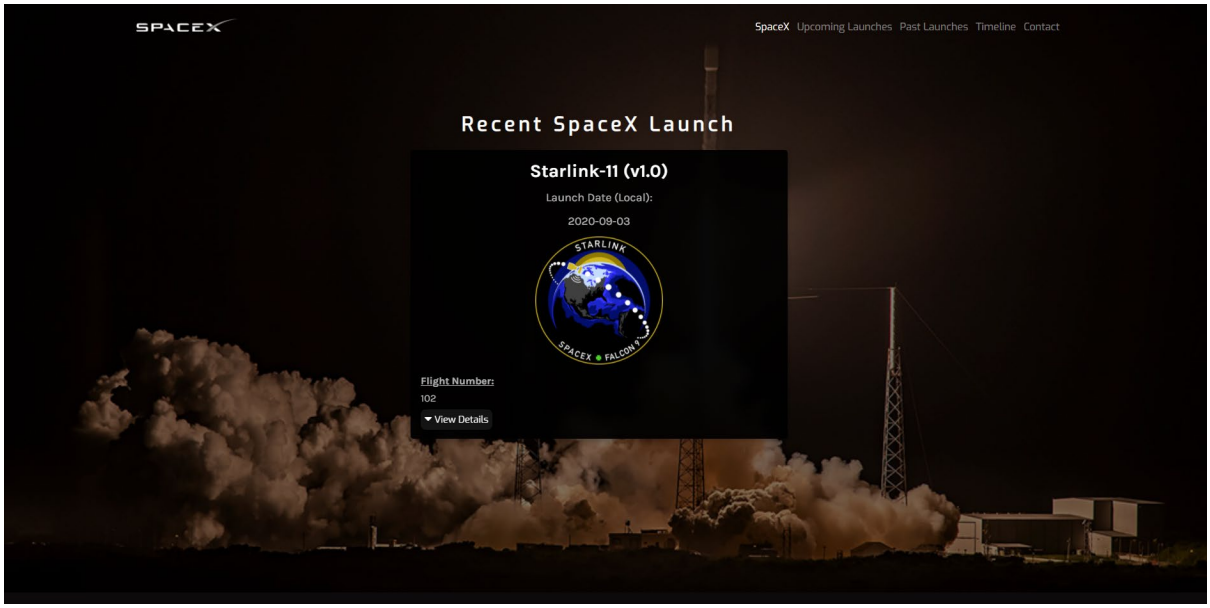


Figure 1 – Final Design, Background

After the prototype was complete I got one of the people I interviewed to test it out. There was a little confusion in the beginning so I changed the part that confused them. My first initial plan was to have a 'click' navigation but I changed that to a horizontal one with the most important parts for the site. This seemed to have cleared the confusion up. I also wanted the site to be friendly for the eyes, looking at information on a crisp white site tend to be very tiring very fast.

Also, since there was a lot of information on most of the spacex launches I cut out to display the information as the first thing you see when going on the page and created a 'view details' button instead. The past launches page would also have a search bar, because that would make it easier for the user if they knew what they were looking for and just had to make a quick search and the launch would appear.

2.2.8 – Color

Since I had chosen to go for a darker bakground theme I had to make sure the text would be easy to read – so white font color. I opted to create a style tile showing the colors and background images that might be taken to use. The font for paragraphs in the style tile is not the one I ended up with – which was the Karla font. The heading font stays the same. But the reason behind these darker colors, is because space is as we all know big and there is not much light shining there, naturally these came to be. They are extracted from the left picture in the tile but are very fitting.

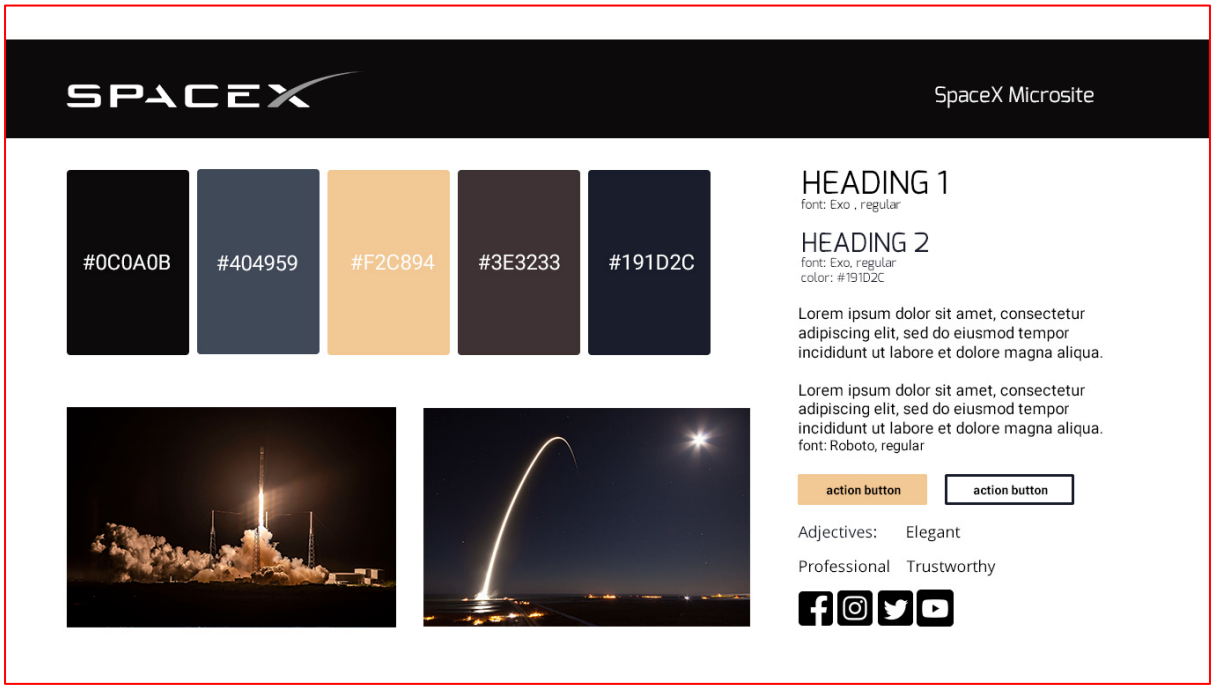


Figure 2

2.2.9 – Typography

For the paragraphs I had chosen the **Karla** font family and for all headings the **Exo** font family.

"Karla is a grotesque sans serif typeface family that supports languages that use the Latin script and the Tamil script. This is the Latin script part of the family, with Roman and Italic styles in two weights, Regular and Bold."[3]

"Exo is a contemporary geometric sans serif typeface that tries to convey a technological/futuristic feeling while keeping an elegant design. Exo was meant to be a very versatile font, so it has 9 weights (the maximum on the web) each with a true italic version. It works great as a display face but it also works well for small to intermediate size texts."[4]

After testing the exo font family with several other fonts for the paragraphs, like roboto, helvetica, arial, open sans, alegreya, I felt it paired best with the Karla font family. Not only does it read well on screens but its also very clean and tidy. As for the Exo font, it's easy to read and you get a sense of technology when you see it displayed, especially in this setting. *As mentioned the font "Roboto" in the style tile (Figure 2) was the initial font I planned to use but after testing a lot as mentioned, I ended up with the Karla font.*

2.2.10 – Principles

For the microsite I have made use of similarity, proximity, regularity and contrast.
All the navigations links have been grouped together and will always be seen in the same spot on all the different pages. This lets the user know where to find them at all times. The launches, both upcoming and past, as well as the timeline are all displayed the same unique way in a card in the middle of the screen grouped with a little information about each.

For the headings the font is the same – meaning H1, and H2. The only thing that differs between them is the size and font weight. The layout and content are the same on all the pages, and will remain the same on smaller screens just show less background at the sides. The use of these principles in the layout will create less confusion for the user and make it more predictable.

2.2.11 – HTML & CSS

The structure of my HTML is built up semantic, meaning the H1 tags is for the most imporant headings, H2 will be the second most important and then there's the H3 tags which are used for the company content and H4 tags within there. All images and links

[3] https://fonts.google.com/specimen/Karla#about
[4] https://fonts.google.com/specimen/Exo#about

have alt tags as well as titles to make it easier and create a good experience for all screen readers.
I chose to create a card, only one in the row, to display the information in. And these could automaticly widen with the screen as well as the content in them. Then I styled the card with a very dark background, black with a slightly transparent background so the main background could shimmer through it while the font remained a light grey/white. I've made use of divs with classes and id's I could style and further work with in CSS and JS.

In the HTML files I've made sure to put everything into categories so it's easier to see what is what. I started of designing to mobile screens by using media querie, but I also had to make sure the bigger screens and desktops navigation worked as intended. The breakingpoint for the navigation bar I set to max-width of 850px because that's when the navigation links didn't have any more space on the screen in the width I had set there. I have also made sure to give the classes logical names and comments to make my own work easier for any adjustments I might make in the upcoming weeks, and for others as well.

2.2.12 – Javascript

The API calls to fill in the cards with SpaceX launches are done through JS fetch (async) calls. Make a call to the api and then return it as a json file so I can add certain details to the cards. I had chosen to add the name of the launch, date, flight number and details about it for the front page. I cut of parts of the date so I would be left with only dd-mm-yy by using slice(). The other pages followed the same process. And then there is the HTML5 contact form, which was required to have a JS validation.

Using the classes and id's mentioned in 2.2.11 – HTML & CSS, I made the validation that had to be passed for the contact form to be sent meaning the function will be called once the submit button is clicked. After passing the validation the user will be sent to a new page saying "your message have sucessfully been sent" and a cta that can take the user back to the homepage should the user choose that.

The navigation also requires a little JS to be responsive. It have a onclick event so when the user click the hamburger menu, on widths smaller than 850pxs, a fullscreen navigation with the nav links centered will appear. And a cross button to close it again when the user taps it. To achieve this I got help for markup and how to make it slightly animated from (source, also at 6.2 - Sources).

2.2.13 – SEO/Content Strategy

As I was creating the content strategy for my site I made sure to write down words that could be used for searching as well as phrases the target audience I had chosen would consider using to find my website. To make it easier for any search engine these words are used in titles on the site as well. And this include words such as space launch, space, SpaceX, SpaceX history, events, about, contact, technology.

2.2.14– WCAG

For my microsite to be accessible it has to conform to the WCAG standards. Which is why the site have good contrast between the text and the dark background. It have alt tags on images and the links have titles. The fonts is also easy to read. No colors "blend" in case of

color blind users.
It have been slightly challenging to create good WCAG while keeping in mind that it should be modern and have a nice visual feel to it. I've also kept in mind that my target audience is on the higher scale when it comes to using websites and navigating around. So what I used more time on to consider was the use of colors and the fonts that could be paired together without creating any misunderstanding for the user.

2.2.15– Navigation

I chose to locate my navigation to the right for the logo placed horizontal on the very top of the website. This is very common on websites and also makes it easy for users to navigate. My navigation change into a hamburger menu placed to the top right on smaller screens and have a cross (x) after its been activated with a tap so the user knows where to close it should they choose that.

These navigations links have been set to have a more grey color with a opacity on 0.4 so when the user hower over the navigation links they get a stronger color as well as when the user is on a specific page the link stay bright and clear giving a clear indication on what page the user is on.
The logo when clicked takes the user back to the homepage like intuitive users expects. In the footer there's also icons that are links with title tags as well that will open a new tab if the user wish to click on them to visit more of SpaceX.

2.2.16– Affordances

The contact page with the contact form, is displayed in the middle of the page have a good contrast compared to the background and clear fields for the user to write text in with placeholders that tells them what information goes where.
Each card on the 'past launches' page have a 'read more' option with a link to 'the article' if the user want a detailed description of that launch. The same page also have the option to immidiately jump to the bottom of the page – to the most recent launch – and also to go to the top of the page. This is for both wider and smaller screens.

The front page have a 'Read More' button the user can click that will give them details on the most recent launch only. All the buttons are clear and have a :hover that gives a lighter color when the user hover over buttons. Links also change appearance when the user hover over it expect for the article links on the past launches page.

2.2.17– Implementation

While developing the site I used both the Chrome dev tools as well as Mozilla Firefoxs. Mainly chrome's but its recommended that one check the website in several web browsers, so I did that and it helped showing how different the website could look just in another web browser.

After finishing the website I used the FileZilla FTP to upload it to my domain. Then I tested the website on both my phone and desktop. I also got the people I interviewed to test it out and check if there was anything that was difficult or confusing to them, and if the navigation was working as intended and no bugs visible. Another imporant part was if the site was appealing and overall easy to use, which I received positive feedback on.

2.3. Conclusion

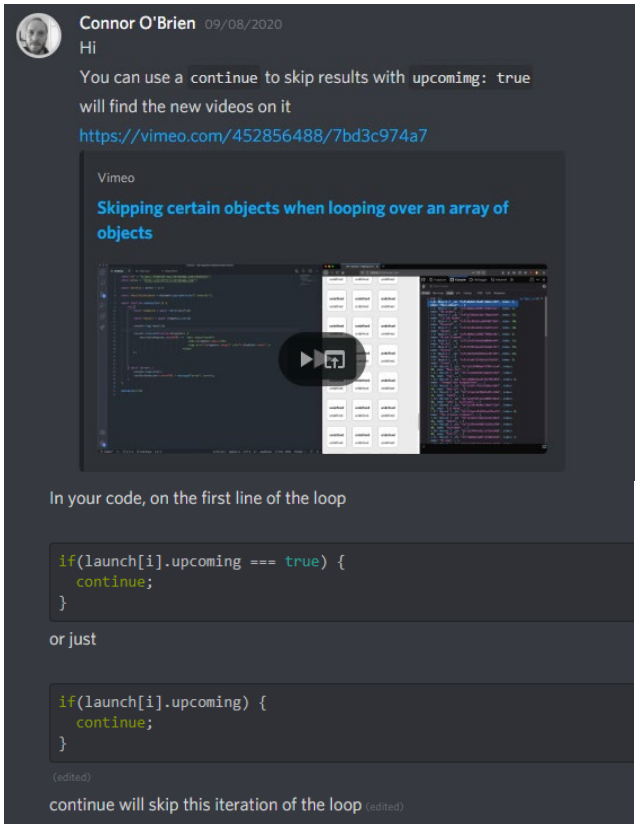
I feel like I managed to divide the tasks I had created into a good plan and followed it quite promptly. The first week mainly went into creating a plan and doing research before starting anything creative. However, it gave a bit of a challenge working with a specific target audience like this when comparing it to previous work I have done.

After the first week was over and I started on the wireframing and prototype I felt like a had a good visual idea on how the microsite could end up looking like and continued to work on that idea after several sketches. Naturally I had to do adjustments to the site later on after feedback to not create any confusion for the user.
After I had set my target audience I focused on the final design and the visual feel of it. It was important to not make the design boring or hard to follow for a typical user within the target audience I had set as well.
The prototyping easily allowed me to do this and when I was happy with the design and had it tested by my participants I moved onto the next part which was the HTML, CSS and JS part.
I also feel like working on a bigger project like this have helped me develop my skills even furter in HTML, CSS and JS and how to structure them while also thinking that its alright to take chances in graphic design to find out what works and what don't. So overall I think I used my time wisely and did a good job despite the challenges that occurred while working on it.

3. References

- https://fonts.google.com/specimen/Exo#about 21.09.2020
- https://fonts.google.com/specimen/Karla#about 21.09.2020

4. Acknowledgements



Code used in the "past launches" api js to stop all upcoming SpaceX launches to be displayed on the page as they were to be displayed on a separate page. 09/08/2020

5. Sources and references

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- Adobe XD
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- https://fonts.google.com/ 08.09.2020
- https://prod.teamgantt.com 24.08.2020, gantt chart
- FileZilla, FTP
- One.com, domain