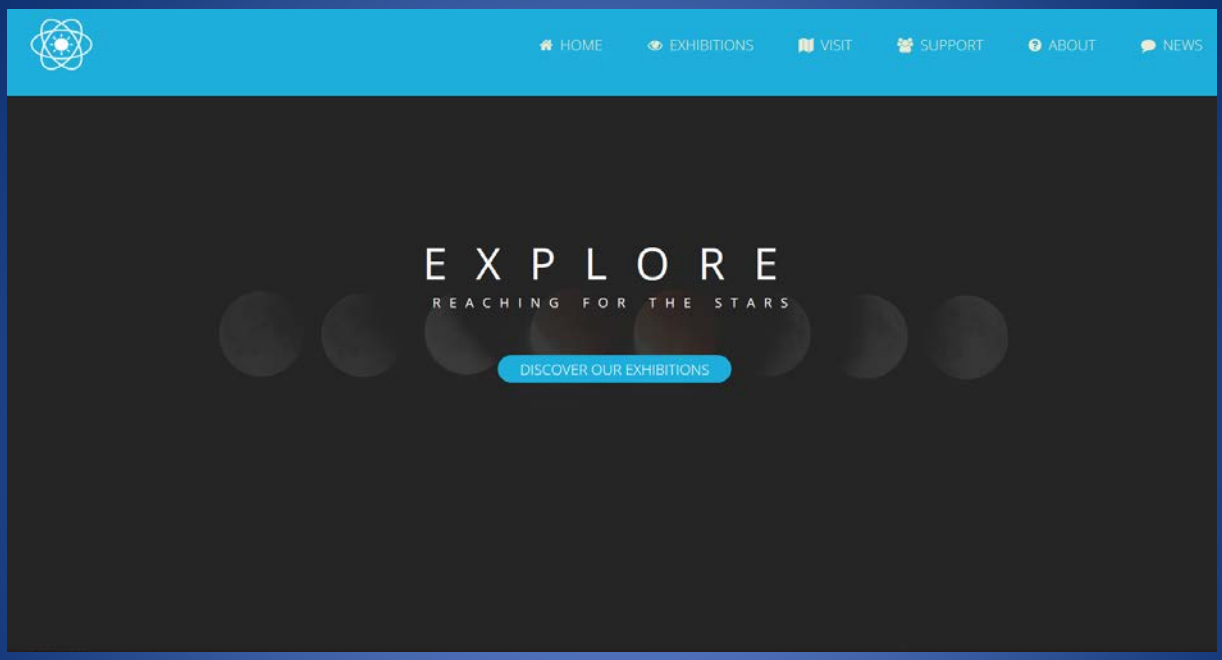
2018



SEMESTER PROJECT

REPORT

ANDREAS STEFFENSEN

ABSTRACT

This report will explore, explain and analyze the process of planning, designing and implementing a fully functional website for a fictional client.

Words: 3665

FEU NOROFF 2018

Contents

INTRODUCTION

This report aims to provide a critical review of the ideas forming the foundations of this project, by discussing how the project was executed.

INTERPRETATION OF THE TASK

A new an exiting interactive science museum is opening in Mo I Rana, Helgeland Norway. The client needs a website solution that solves its current marketing needs.

- A website that is informative and appealing, that will attract both middle school pupils and their parents
- The site should appeal to youngsters without pandering; it should take for granted that the audience is inquisitive and intelligent.
- The website should be informative and engaging but should encourage viewers to visit the museum itself. The website should be responsive and be easy to use on a variety of devices.

As a designer and developer of this website, our task is to implement a solution that meets the clients needs. Our main task to develop the foundation that is needed for the client to build a successful online presence.

The Tourist attraction scene as we will discuss later in the report, is growing in Norway. As a designer we must find out what sets this business apart from the other attractions and design a solution that is interesting for its target customer. We must define a goal of the website, by giving it some interaction that tells the story the client wants its visitors to achieve. These and other important questions, will be disused during this report. The decisions made by asking these questions will also be examined.

As the client is providing much of the graphical assets needed for production of the site, we are saved a lot of ground work needed to build the site. The client already has given us the content and copy needed, but we still need to do research and make a Content and SEO Strategy. We need to identify what keywords we will use in our site, what does the target audience search for?

The content must be structured and placed out based on this research. Using our content strategy, we need to build a sitemap that is appropriate.

RESEARCH AND ANALYSIS

INSPIRATION

With the target audience in mind I looked for sites that targeted the young generation with science, creativity, exploration and imagination. Bright full colors, but still professional was what I looked for and I found that in these sites.

The museum of Science+industry Chicago website has some interesting interactivity, good content management and is user friendly. [1]

It inspired me to use test and implement grid layouts in our Website. It uses visual hierarchy to tell the users a story, and animations to make the site more interesting. All of this inspired me to make a website that have some form of professionalism, but still maintaining the youngest generation with animations and interactivity.

ANALYSIS

The tourist industry in Norway is blowing up, last year the tourists used 42,8 billions on tourism. (Benna, 2017) Northern Norway is an attractive tourist attraction such as northern lights, the black ice, and the polar circle. The technological change in last decade has had a major change in the global economy, the tourist attractions have also gained a lot of advantages with the use of the internet. Small geographical locations such as Mo I Rana, with beautiful nature attract a lot of tourists up here in the summer months. A science center that uses this to it advantage could be important for the website success. Other science museums in Norway are often governmentally funded, and in large cities.

A science center up on the Artic Circle can therefore tempt tourists with calm and beautiful surroundings away from the busy life of larger cites.

We have no direct competitors yet, but the municipality is planning on building a governmentally funded science center in the future. (RanaBlad, 2018)

Inspiration Sources

- http://playsciencelab.com/
- https://www.thesims3.com/
- https://www.mrmen.com/
- https://www.lego.com/nb-no/
- https://www.msichicago.org

Competative analyis

- www.inspiria.no
  Sarsporg
- nordnorsk.vitensenter.no
  Tromsø
- vitenparken.no
  Campus ås
- vitensor.no
  Arendal, Kristiansand
- vitensenteret.no
  Gjøvik
- www.vitensenteret.com/
  Trondheim
- www.vilvite.no
  Bergen
- www.tekniskmuseum.no
  Oslo
- www.jaermuseet.no
  Sørvestlandet

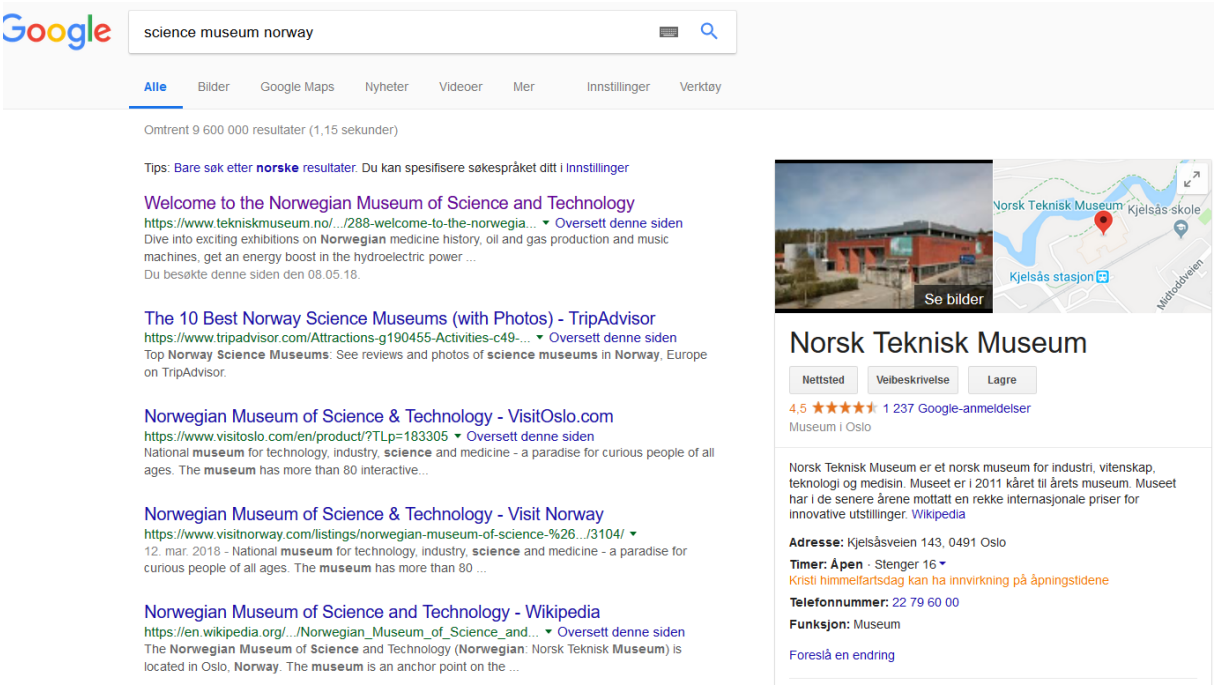
To be sure to have a competitive advantage from other tourist's attractions and the planned science center, it is important that our webpage is targeting our intended target audience. And that it shows that we are diversifying things with a community driven science center, that you as a visitor on the site can help build and improve what we are trying to achieve. To tell this story to the user we could use visual hierarchy, colors, interactivity in and interesting and appealing way.

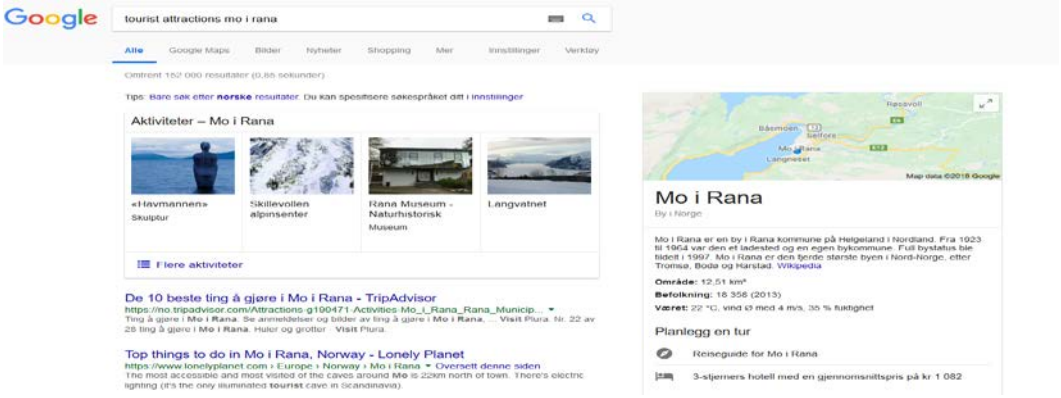
SEO Strategy

A SEO Strategy and content plan can be found in Apendix B. Personas where made to discover the target customer, a make keywords based on interests this person might find. The developed keyword strategy developed was:

Interactive learning, e-learning, Gamification, digital-museum, virtual reality, open-source hardware, open-source learning, co-learning, community driven, tourist attraction.

These keywords where used across the sites 4 main pages meta tags, to appear in google searches. Other words are used in the pages main content, copy and image alt tags and filenames.





SEO Plan used in HTML markup

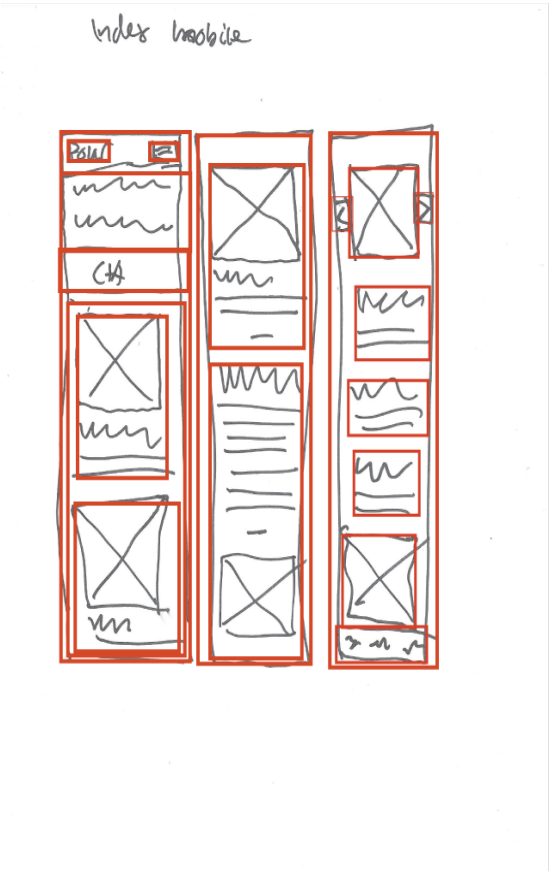
```
Index.html
<meta name="description" content="Polarius is an Interactive Science
museum for the young generation with the mission to spark an
interest in science and technology." />

Exhibtions.html
<meta name="description" content="Explore and interact with our
digital-museum stands, have fun trying out our virtual headsets
learning about space" />

About.html
<meta name="description" content="As a community driven tourist
attraction located in Mo I Rana. We provide fun an engaging
experience." />

Support us.html

<meta name="description" content="You can support our digital museum
in multiple ways. Do you want to support us from home? Take pictures
of your science projects and leave us a message." />

SEO Filenames and Alt-tags
<img src="assets/images/creativity.jpg" alt="Exploring Science">
```

As shown in the above code snippet example above, we carefully planned an implemented SEO and content strategy to improve google search results for the website.

SKETCHES – SCANNED IDEA DEVELOPMENT AND DIGITAL SKETCHES

In early development I started sketching out ideas on the layout for the landing page for both the mobile and desktop version of the site. I then scanned and illustrated box models on how the different parts and elements, to help thinking about how this could be implemented in HTML.

SCETCHES



Mockups and wireframes

Figure 2: Mobile version of the site, shows a one column layout.

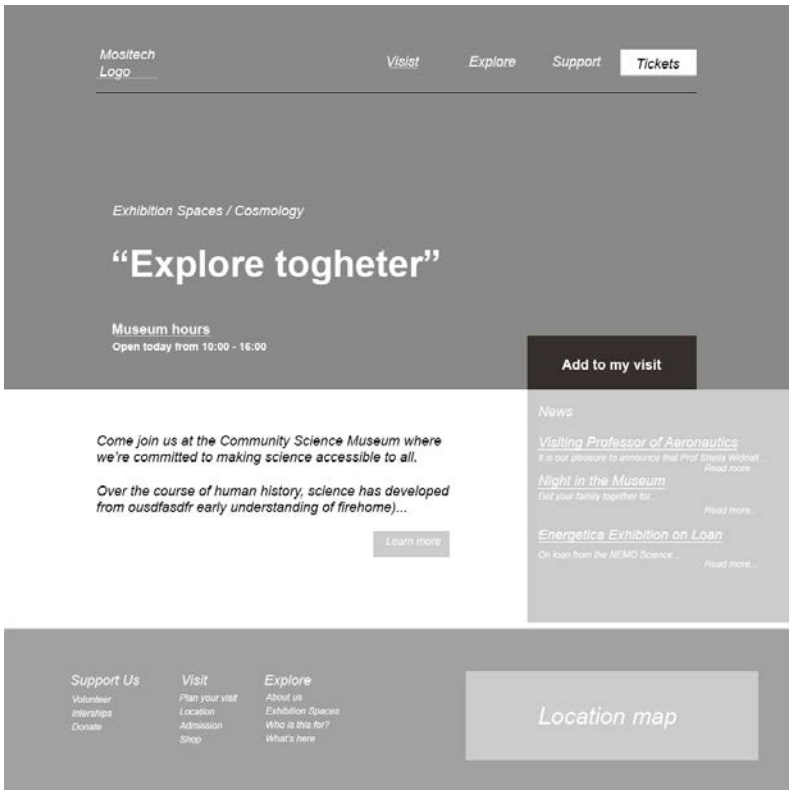
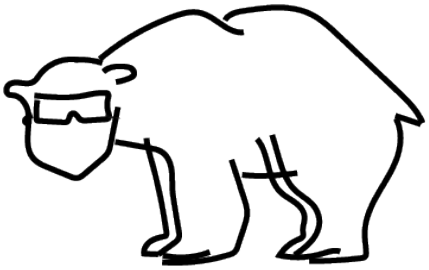


Figure 1 This early wireframe prototype is inspired by the design by Chicago science museum.



Polar Interactive

Figure 3: Testing out logo on different backgrounds

Figure 4: This logo was designed in illustrator but not used in the final product

After finishing up the sketches and early prototypes I started designing in Photoshop. I choice my and typography carefully. I used photoshop mainly to test out different colors, to set the mood and feel of the design.

Figure 6 Desktop version of the site

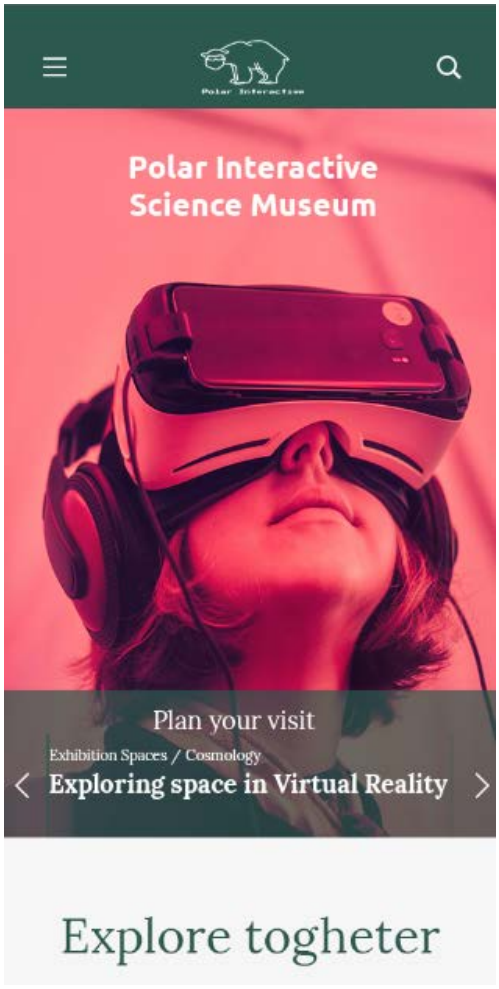


Figure 5 Mobile version of the site

WORK PROCESS

Content planning

Once the project was defined I planned the content, text, images, videos, icons. I started by defining the goal of the project. The goal of this site is to get users interest in the Exhibitions the museum provides.

Then I defined the audience, the typical user who visits our sites will be families, teachers and the young generation.

We must appeal to both. By choosing a trustful color we can gain the parents trust.

Planning phase

In the planning phase the content was planned, as seen in Apendix A I planned the different sections needed, titles, navigation. What I miss doing here is placing out the pictures in the different pages. This step of the Development is such an important step, planning out the page layout and sections. I found this helpful, since I could just print it out and keep it as a reference while developing the site. But for the next project I will remember to plan what pictures to use, and where to place them earlier in the process. The sitemap was helpful for me, and I see the importance of having one early in the development cycle.

Design phase

STYLE/GENRE

Our audience is ranging from traveling tourist to families with children. We must stay professional, while still attracting the young generation. Other sites such as those mentioned in the introduction, like Lego and PlayScience do this with using bright full colors, simplicity and interactivity.

COLOR CHOICE

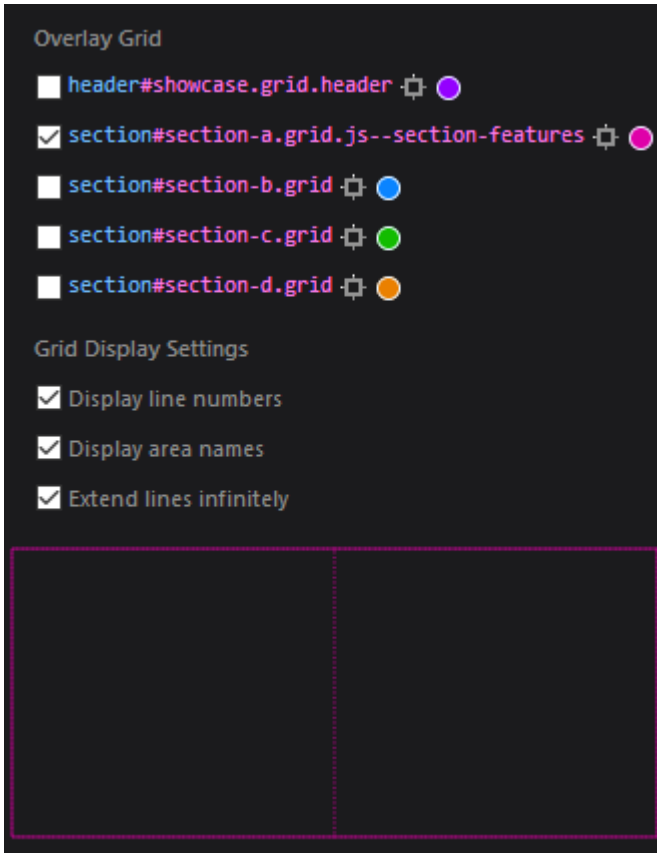
I went with a blue as the base color, since it reassembles trust to the parents. It is also a futuristic color, that reassembles science and technology well. The rest of the colors used in the project where shades of blue and gray.

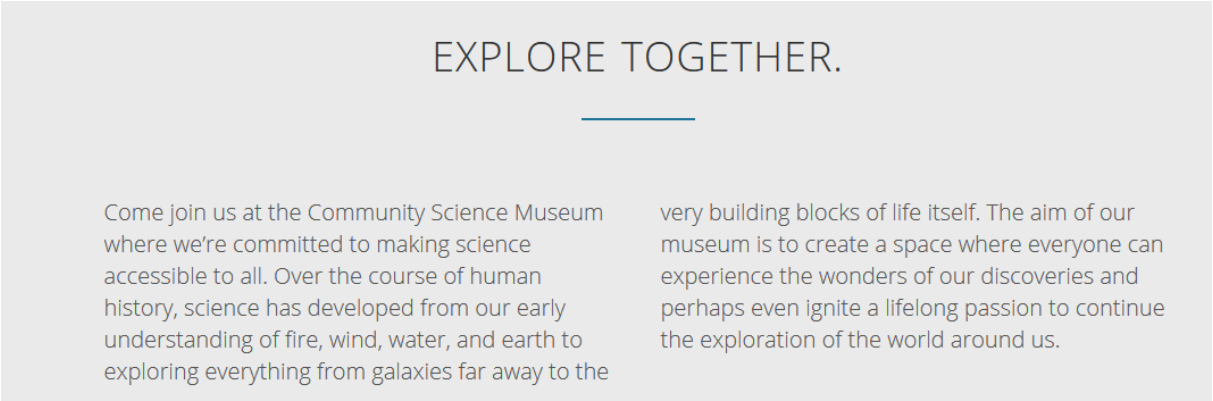
TYPOGRAPHY

The font use for this project was Open Sans, I tested different fonts for the EXPLORE title at the landing page and ended up with choosing open sans. I also used Open Sans for the rest of the page.

COMPOSITION, LAYOUT, GRID AND OTHER ELEMENTS

The page is a two-column grid layout with four sections divided in different layouts depending on the content. Using CSS Grid to lay out the pages so that it goes to one column on small devices. Flexbox is used to flex individual elements such as the card boxes shown in grid b.





Two column paragrahs work by deviding the content up in different sections. It looks good on the front-page, but I should have used one column layout for the rest of the page.

Navigation

The header contains the Main Navigation and uses a Sticky class to align to the top when the user scrolls down the page.

For mobiles the navigation goes into hamburger mode, hiding nav elements into its own menu toggle button. This is done by defining CSS rules to a hidden class, and using jQuery to assign the class when needed.

CSS Animations

The CSS for the animations used on the site was learned by taking a Course by Jonas Schmedtmann (Advanced CSS and Sass: Flexbox, 2018). It was a good course on both CSS Grid, Flexbox and Animations. I learned how to make the animations used in my project, and how to use both CSS Grid and flexbox to create the advanced layouts used in my project.

Responsive development

Elements such as the navigation above has been made responsive. The entire layout uses a grid layout. For further improvement on the responsiveness of the site, the Pixel values in the CSS should be changed into REM values using a root html selector, to make the site more accessible and responsive. (Rendle, 2016)

The site is mainly responsive for most devices, as shown below I have used a web-tool created by Justin Avery called 'Am I Responsive? '.

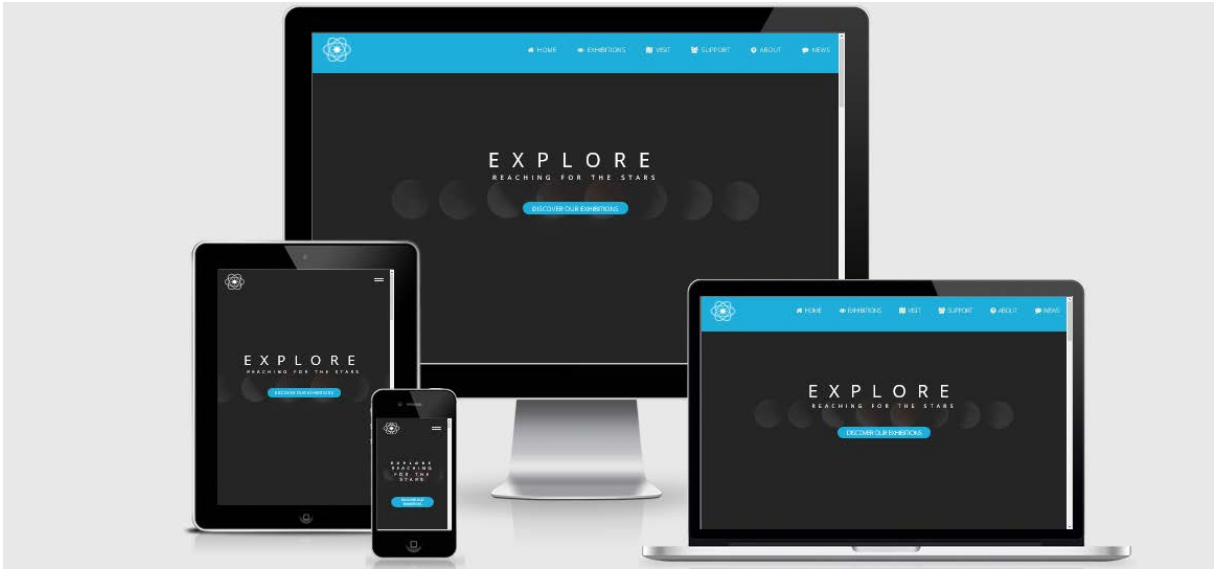
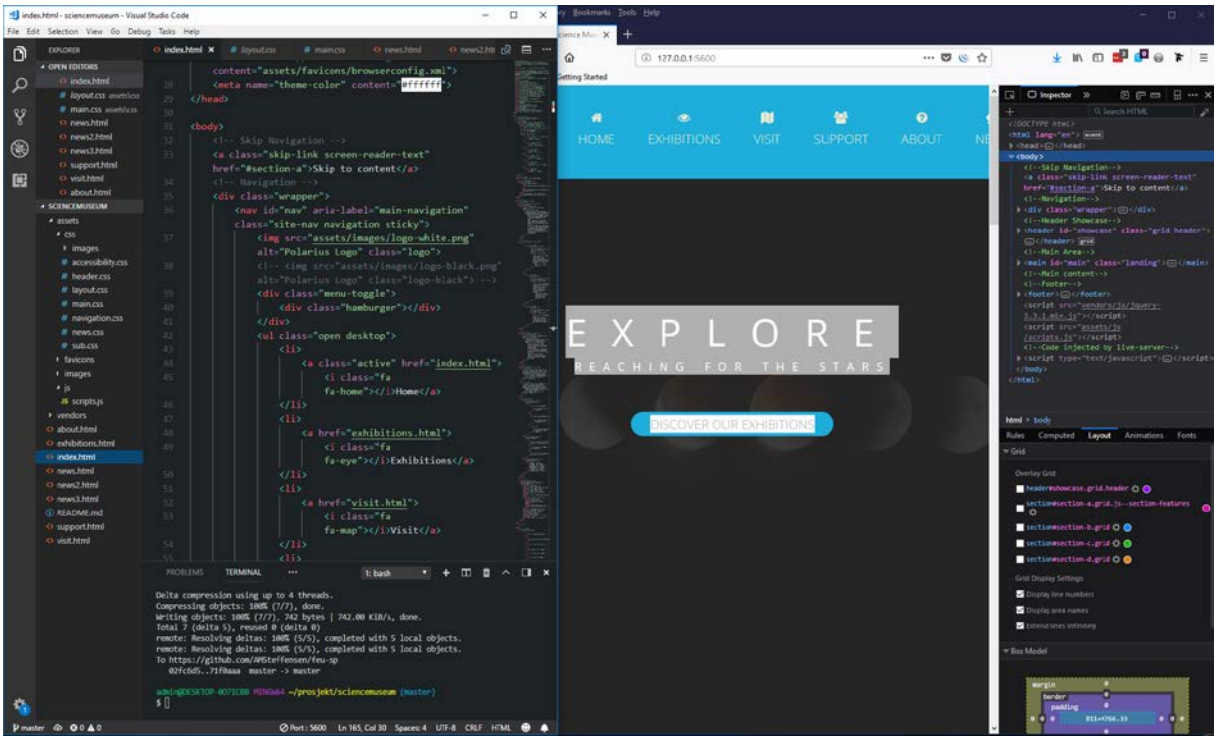


Figure 7: (http://ami.responsivedesign.is/). (@justinavery, 2013)

Coding environment and Project Management



I changed from using sublime text, to visual studio code during this project and I am happy with that transition. With the integrated GIT Terminal, I could efficiently use version control in the development process. Mozilla Developer tools have better support for Grid and I used Firefox latest Developer browser during the development processes.

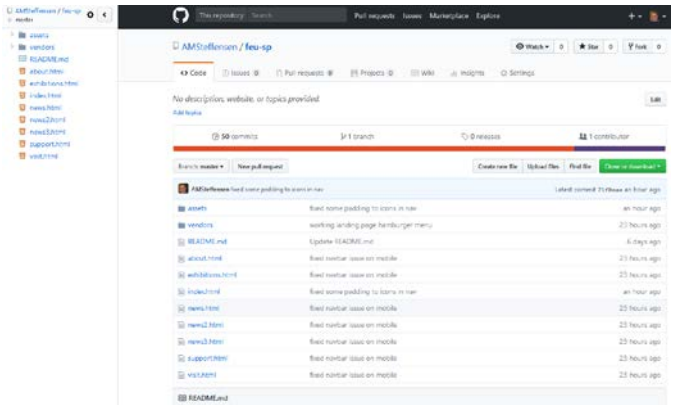


Figure 9: GitHub Repository (https://github.com/AMSteffensen/feu-sp)

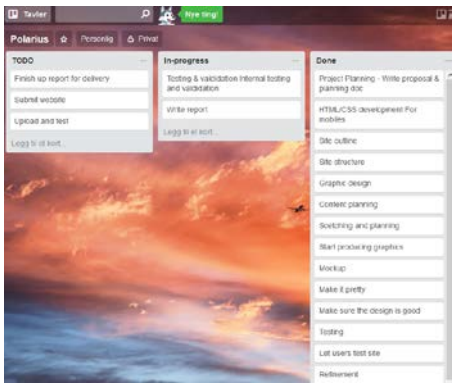


Figure 8: A simple Trello board was used during development with the gnat chart planning tasks as cards. I found it simpler to update this than the excel spreadsheet.

Testing

The UX and Design was tested and analyzed during the project to make the site as accessible as possible.

Small features where like the button shown in figure 10 was added to make the site accessible to screen reader users. A consistent color usage was used that has great contrast to the rest of the page.

Omptimization

Photoshop was used to optimize the images, then I used google's (developers.google.com, 2018) speed testing app to get an indicator on Phone page load times.

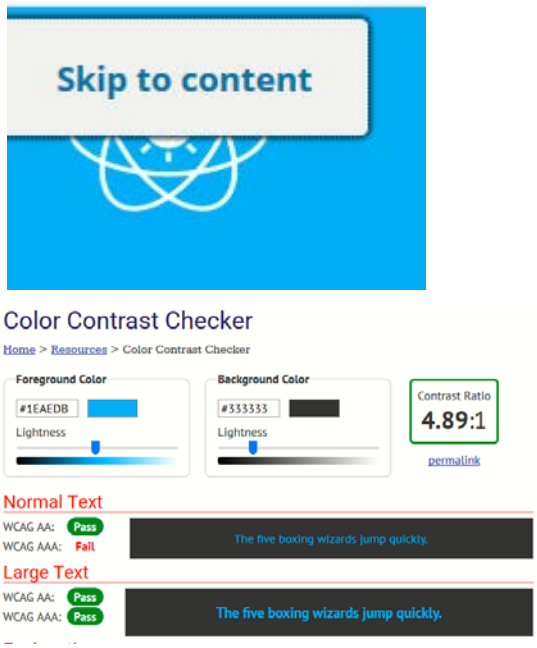


Figure 11: webaim.org tool to check for contrast with background.

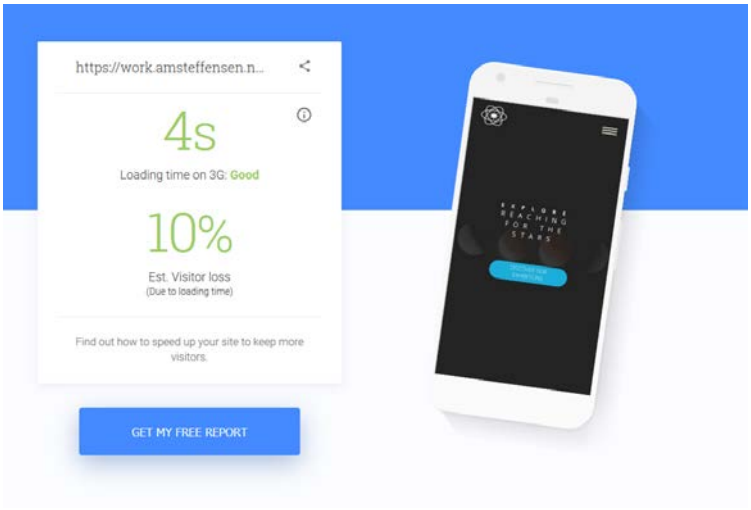


Figure 12-1: Using googles page optimization tester shows that the page loads quickly on mobiles

Feedback from other designers and developers

Figure 12-2 Responsinator.com was used to get a picture of the responsiveness on different devices and browsers.

Since I have an office at a Coworking space with two Web-designers running a web-design business, I sent them the link for feedback an advice on the design – and they thought it was OK. Also getting feedback from the sitepoint community has helped a lot. (SitePoint, 2018)

SUMMARY AND EVALUATION

This report has described the process from idea to finished product. The decisions made on the design of the website has been investigated during this report. This has been my first functional build of a full website for a client. As a student I have learned how to plan, design and develop a fully mobile first responsive website for a client. From the research and planning phase to fully functional deployed website.

The final product can be found here: https://work.amsteffensen.no/polarius/

The GitHub Repository can be found here: https://github.com/AMSteffensen/feu-sp

Future research and development

In a real-world scenario, the website still need further research, testing and development. The site has responsive issues, the main-navigation system on mobile phones could be improved by using a framework like bootstrap to make the menu more accessible.

The HTML/CSS code can be improved by using the CSS framework like SASS to make the code more manageable. As of now the code is split up in separate CSS files to make it easier for testing and development.

As of now the site is abit dull, there is only information and I don't feel that the site has a huge purpose. This is mainly due to lack of JavaScript skills, but I have some ideas on what could be implemented to make the site more appealing for the visitors.

Some more interactivity can be implemented on the site. A thought experiment is to implement gamification into the site, targeting the young visitors. By collecting science projects from home, the visitors can upload pictures to the site of their science projects developed at home. Where visitors can browse different projects posted by the community. This will make a fun an interactive gamification site and inspire both the museum and the community built around!

How-To guides can be explored, to inspire visitors to create their own science projects at home. The museum could even sell this guides and equipment needed to earn some cash in their store.

Norwegian SEO and content strategy must be made in the future to improve search results on google for Norwegian visitors. Also, the site must be translated into other languages for the exact same reason. As much of visitors will be outside travelers, and tourists.

Final Note

All in all, the project has been fun an engaging! I can't wait to further develop my skills in programming so that I can take my design and develop skills to the next level, implementing fun and exciting web-solutions.

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Udemy.com. 2018 – Jonas Schmedtmann, Course: Advanced CSS and SASS.
https://www.udemy.com/advanced-css-and-sass/

Appendix A: Content Planning Doc

Main Navigation:

1. Polarius (Home)

2. Exhibitions

    - Cosmology
    - Evolution
    - Biology and Medicine
    - Robotics and AI
    - Ecology

3. Visit

4. Support

5. About

6. Contact

Section 0: Header with hero image and navigation

Title: None

Explore. Reaching for the stars

Button 1: Discover our exhibitions (go down to sign exhibitions)

Button 2: Show me more (go down to information section)

Title: "Explore together"

Section A: Introduction

Hello, we're Polarius, A community driven Science Center located in Mo I Rana. Are you are curios and want to explore the unknown corners of the Universe?

- making science accessible to all

- human history

-fire, wind, water, and earth

- experience our discovers

- we want you to continue the search after visiting us

Section B: What we offer

EXPLORING SCIENCE

Are you a young person looking to learn more about science? Come on down to our museum, there's plenty to see and do. Special Events and Exhibition Spaces

SPECIAL EVENTS AND EXHIBITION SPACES

Explore the wonders of our cosmos. Our fantastic exhibition, 'The Sky Above Us', explores the night sky and what we can see and know about the universe around us.

About us

We are a community driven center, learn more about what we do and how you can help!

Order anything

Section C: Information

Title: **Explore the wonders of our cosmos.**

We believe science should not be confined to the textbook, but brought to live through exhibits. This is why we have over 1000 different exhibits on the many varied subjects of science to explore. Many of these exhibits are designed for you to interact with and play around to see science come to life (apart from the dinosaur exhibits – they only come to life at night when everyone's gone home).

Section D: Information

Title: none

Subheadings

Support us

There are various ways you can support the museum. Donations are very welcome and are an important way we keep this museum open and accessible to the whole community.

Visit

-How to visit us

Footer

Title: None

Navigation:

1. News

2. Contact info

3. Opening Hours

Also include links to facebook, twitter, google+ and Instagram accounts.

Sign up to our newsletter

Title: Explore more

Support Contact form

Title: We're happy to hear from you

Fields to include:

Name

Email

How did you find us?

Newsletter

Drop us a line

Appendix B: Content Strategy DOC

Content Strategy

SEO Keywords

Interactive learning, e-learning, Gamification, digital-museum, virtual reality, open-source hardware, open-source learning, co-learning.

Target Customer

On the business side it will be government facilities like schools and other forms of education services. Social Services and the local municipality is an important customer. Polar Interactive is a social service that is driven by the community, the site can scale globally if it is well received publicly.

Persona

Fred, 15 – High School student. Wants to learn how to program robots. Fred is an Creative and imaginative being, that likes to explore, create and learn on his own. Fred has a lot of online friends and is active on social media. He likes to play videogames with his friends and spends most of his free time playing online multiplayer games.

Branding

Polarius makes science and technology available to everyone. We want to make science and technology an everyday thing for the next generation of problem solvers. Polar Interactive is a non-profit community driven Computer Science and Technology platform where young kids can explore and learn to improve their problem-solving abilities using our Virtual Reality interactive technologies.

Objectives

Over the next 5 years the company will have become an internationally known educational ground for people that want to precede a career in Science and Technology. We will be providing an educational platform for the next-generation of creative makers and problem solvers. At Polar Interactive we make interactive solutions using virtual-reality technology.

Polar Interactive will have moved on from being a local museum providing prototypes to a digital museum where kids can interact and learn together using our interactive technologies. Games in virtual reality are a fun way to learn for kids, and at Polar Interactive we want learning and exploring to be fun!

Goals

1. Build awareness to the importance of learning, using imagination and creativity to solve problems using science and technology.

2. Grown from a non-profit science museum to an interactive media business providing 20-computer science jobs by 2023.
3. Science Centers in Third-world countries, providing education and work in developing countries.

Appendix C: Style guide

For later reference and development on the project, this style guide shows future developers the design style guide of the page.