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Technical Report

Semester Project 01

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1. Summary

This project compiles all the different phases involved in the development of a web site, from planning and its development of a gantt chart, to the creation of the different design elements and preparation of the mockup. Plus, all necessary web development to create a web site responsive and adaptable to each user platform.

As a starting point a Gantt chart was prepare to identify all different activities and setup timelines to define the necessary amount of time needed to each task. Furthermore, allows to monitor the complete development.

All design element were created keeping in mind the audience and the intention of the web site. The main objective is to create a site easy to navigate, with high visual impact to facilitate the audince to identify the element where they want to get more information.

Furthermore, the style tiles started with a logo inspire in one of the most common element in science the Atom. Following by a unique color pallette focused to bring balance in the design but also attract the attention to young users into the museum.

The main challenge was the web development, the goal was to create a responsive page easy to interact by the user. The formats utilized were HTML and CSS. Moreover, as part of the main goal for the web design to have a visual impact on the audience, the use of images was vital and processing the images to ensure the quality on all different scenarios for a responsive web site was one of the main challenges during the web creation.

Due to characteristics of this project and the dynamic nature for its development, we select mixture between visual and written content linked to differen web pages inside the site for its different information areas.

2. Body

2.1. Introduction

The creation of a website encompass a different aspects that needs to merge in order to achieve a proper development, these aspects or steps depend on each other and represent an anchor point that allows the web developer or designer to refer in order to take future decisions. From this framework a plan can be developed and utilize to set goals and deliveries.

In order to successfully create our web site, it is necessary to identify which is our goal and what is expect to the web site to reach, identify the audience is a key element and perform market analysis to develop the different design element that will allows the content creation which will materialize the web site.

Taking into consideration the methodology in the design and web development process for this project is necessary to respond a series of questions to define the objective:

> *Is our web site intended for personal or commercial use? Shall we deliver the message with a visual impact and content or is expected the audience to read through and get the message? Which audience are we expecting to visit our site?*

Our Community Science Museum web site has a goal to promote an interactive science museum for youngsters on elementary and middle school and towards families with children and teenagers.

2.2. Main section of report

As a first step to initiate this project and knowing our audience, the analysis of similar web sites with same objective and goal is important to distinguish different ways to manage the content and present the information. Therefore, proceed to develop the design element that allows to continue with the content creation for our web site.

The similar aspect on museums web sites is that all are intended with a high visual content, minimizing the written text to provide additional information on the areas inteded for that specific audience. Furthermore, they rely on

links to transfer the user between different web pages to access the necessary information the user is interested.

Gantt Chart.

The Gantt chart is vital in each project. On this chart, we will set up the different timelines for the phases and developments, this will allow to plan several task and activities. Our clients expect that each phase is concluded in the agreed dates but in case of a delay rushing the creation process might not be beneficial, therefore a Gantt chart will permit to identify which task can proceed or expedite in order to keep our deadlines as intended

Our Gantt chart, segregates and divide the different phases utilizing the first period to identify activities and setup the content. Prepare sketches to develop the different design elements and bring them together during the mockup. Moreover, reflecting all the design during the web devlopment to reflect our design vision into the web. Check the following link:
https://github.com/alespages/project/blob/master/Project%20-%20Gantt%20Chart.xlsx

Content Selection

Our interactive museum is intended for young persons in scholar phase, which are prompt to a high visual graphic content and a concise message. Children and teenagers tend to read less and like to go straight to what they are looking for. For this reason, our web site needs to mix in the content keywords linked with graphic images that takes them to find the right information. Furthermore, as a museum, events and exhibitions are the main attractions and activities for our young audience to participate, enjoy and learn.

Once defined the sitemap and its structure, is time to consider the written content. This is one of the most important aspect of the web site which posses two main characteristics: the diffusion and SEO.

With the diffusion we refer to the content that brings and impulse the commitment and action from the audience. Even though, the quality is one of the most important factors, it is not the only one that has an influence in the success. A web page might not be attractive in the sense raising the interest in the content as itself, as the way is presented with the typography and the structural elements. Long texts are important to be fragmented adequately in paragraphs, as well as images and infographics to make the reading more fluent.

The second function of the content on any web page is the Search Engine Optimization (SEO), which focus in raise the visibility of the page in the search engine motors and optimize the content in order to improve its positioning between them.

Referring to SEO is logical that the content will well be written up, meaning that is informative, rich in keywords, and easy to index and analyze by the search engines. In practice the major part of this content is provided by the client and later adapted with the goal to be optimize for improve functionality towards the search engines.

Taking into consideration these two factors, the content used to create the website for the Community Science Museum was develop as follows:

- The paragraphs contain one main idea to simplify and improve reading comprehension of the website.
- All themes are divided by blocks and match with images to awake the interest and curiosity of the audience and move forward to the next page through only one click.
- The texts were utilized under the premise of simplicity with good syntaxis, no orthographic errors and good style.
- The content on each page start with a text perfectly visible and explicit in order to transmit to every user a clear idea of theme they will found on this page.
- The arrangement of the text in paragraph is prepare with a visible line spacing to avoid the text looks like a block. Furthermore, it was arranged in short way with a specific maximum width to avoid the user lose interest with long texts.
- Specific keywords were highlighted using bold or other colors through the use of <b> tag, creating the texts less uninteresting and highlighting the right information.
- Considering the SEO as the center, I have worked with a detail and thorough word selection of the keywords inside the web page. Moreover, positioning these keywords into the title labelling on the main page. Furthermore, in meta descriptions, H1 lables, and inside the body of the content.

Design Process

The entire design process start with hand made sketches to identify the museum and their audience, the goal is to create a simpler design that

integrates the significance of learning and incentivate the curiosity for those who wants to take an step further.

This phase brings the elements previously existing in the brand or form part of the client vision. Otherwise the designer will create the necessary element that might be missing to transmit the intended message. Here we will create the style tiles.

With the Style tiles, I have gather together in an harmonious way each and every element that will become part of the web site, allowing to have a complete view of the styles including colors, typography, textures (if applicable), patterns and common design elements. In other words, through this document we can define the tone, sense, and style of the web site we are planning to develop. For our Community Science Museum please refer the following link:
https://github.com/alespages/project/blob/master/style-tile.pdf

The design of a web page is way to communicate a public determine message. Therefore, to display this message correctly we need to merge different design fundamentals.

One of them is the visual hierarchy which refers to the organization of the elements utilized to transmit the message to the user. This basis consists in provide more weight to the visual element rather than the rest leading the user to the most important part and help to find the right information. To achieve a good visual hierarchy there are certain principles that shall be applied: size, color, contrast, repetition, proximity, alignment, and white space.

Arranging the sizes of the different elements that belongs to our web page will allow us to easily attract the user attention to the areas we want to highlight. For this reason, this will be one of the most important design principles we are utilizing. The bigger elements will call the attention. Therefore, size is a fast and effective way to bring the user to a determine element on the web page.

Moreover, as a human being we relate the size with the importance of the element, meaning that the size relationship between the elements on the web page will send the message to the user on which part are the most important areas we want to highlight. On the contrary, smaller elements will reduce the relevance for the user leaving them to develop the main ideas from the web

page and the user get more information once is set on the area is expected to find more information.

Furthermore, using different size in the elements will break the design monotony and avoid our users to get bore and leave the site. Specially for our audience which relies in color, sizes and concise text to keep them interested.

Color Pallette

The color represents one of the most effective tools for designers because it attracts people attention and focus on certain elements. Strong and bright colors can capture user attention and even awake their curiosity. But they can turn to be strident and annoying if the use is too vast in the design. Therefore, achieve a good color balance is key for our Community Science Museum and bring balance not only to keep the children interested but to provide a sense of elegance and technology that capture teenager's attention as well.

For our Community Science Museum, I have considered a color palette based on a mix of warm and cold colors to help and balance the visual impact into the audience.

Based that our web site is linked to science, my main color selection is blue which tranfer freedom, efficiency, loyalty, tranquility, freshness, cleanliness, confidence, and security. Blue is not a tiresome color for the user and provide positive connotations that activates the user to interact with the page. The main idea was to transmit progress and significance within a web page dedicated for youngsters interested in technology.

On the other side, I select Orange, which represent a color full of energy and transmit dynamism, velocity, and positivity partnering a bit with the childhood, joyfulness, intelligence, and enthusiasm. The goal to mix this color with the blue is to represent a balanced combination between the seriousness of a web site dedicated to learning and to awake the curiosity of those who are always looking to go beyond of what they see.

Green as itself, has a relaxing effect harmonious and natural. Matching green with blue and orange generate a sensation of wellbeing relate to science. This color is easy to mix balancing the effect from the blue and the orange.

Last but no least, the purple, it was selected based on the creativity and imagination that reflects, mixing those is quite productive in our web site

dedicated to children and teenagers looking for new challenges and eager to learn and deepen their knowledge.

Logo

The elements that forms the logo were selected to capture the audience attention in order to create brand recognition by introducing slight similarities to the Atom which is known worldwide. The main challenge was to avoid transfer too much information from this element and miss the concept to create brand recognition.

The creation of the museum logo was quite a difficult task, since there were several ideas that were worked on. This can be seen reflected in the link that follows:
https://github.com/alespages/project/blob/master/Logo1-Project.pdf

In the end the logo created to the Community Science Museum, was inspired in the Atom form and its structure which consist in a nucleus, with surrounding electrons, protons, and neutrons. On our case, to incentivize the curiosity of the youngster, the circular form was change into a triangular form and different colors applied as denotation for the electrons, protons, and neutrons. Furthermore, our logo tries to englobe the name of our museum highlighting the relevance as the nucleus needs to keep each other together.
https://github.com/alespages/project/blob/master/logo.png

Images & Mockup

Being our main goal to transmit a message in a visual way, the images has great relevance during the selection process, acquiring an important role in the use of our web site. The selection of a good quality image that capture user attention and provide information will bring a professional style that will work and help to the web site to make itself known to the audience.

For this reason, once the images are carefully selected, all the texts are revise and evaluated, and all design elements finished we proceed to create our website template or mockup. This template will include everything that the web will be, from its pages until its visual and written content.

This template or better known as Mockup will be used to present the result to the client to localize failures or errors prior to the web is published. The mockup allows the designers to show a clearer idea of what the website will look like, allowing them to rectify in a simple way in case of any modification is needed.

Going back to the visual content, is well known that affects directly to the quantity of clicks and the commitment of the users, achieving that the web site looks more pleasant and easy to navigate but to improve the written content transmitting additional information. However, is important to highlight that a heavy image may slow down the response time for our web site. Therefore, it is essential to properly compress our images to save on load times without losing image quality.

A good visual design will facilitate the communications and attract new users to our web site. This represent a powerful tool that cannot be underestimated.

Once different web sites were explored, initial hand-made sketches were prepared which facilitate transfer the ideas of how each web page will be and how it will look like. During this phase the main page was created and later a content page allowing this way the evaluation for the combination of both within the web site. See the following
https://github.com/alespages/project/blob/master/hand-made_layout%20_sketches1.jpg
https://github.com/alespages/project/blob/master/hand-made_layout_sketches2.jpg
https://github.com/alespages/project/blob/master/hand-made_layout_sketches3.jpg

Development

Once decided all design elements and mockups performed it will initiate the web site development process. On this phase we will define how the developers present the mockup on its web version. Here we setup the characteristic and behavior of the web page and establish its internal functions. How the content will interact with the user and how the system shall communicate between them in order to process all the necessary information for which the web site was developed.

Furthermore, we will select the Content Management System (CSM) choosing the most appropriate for our project. Between the coding languages that are most commonly use are ASP, JavaScript, XML and SQL, anyhow with the new programming requirements new coding tools are starting to being developed

For our web site, Community Science Museum, the formats utilize to its development were HTML and CSS.

Moreover, the web page design is based on a responsive type with a basic structure of an HTML page, which engulf different sections that contains division. These divisions were created to provide style to the page and allow us to work each element in an independent way in order to create its own style. On the same line, it was necessary to make different IDs to the different pages containing unique information of each container.

The main challenge during this process, was to accomplish the right positioning of the elements using Display Flex combined with margins calculation. On most of the cases percentage were used, the goal was to make more adaptable the elements, at the same time relative and absolute dimensioning were used on specific elements like the header, because the main objective was to keep the main header present during the scroll up/down process. This effect was possible with negative values on the transition property.

2.3 Conclusion

As apart of the web creation process for the Community Science Museum, the main objectives to create an striking web site easy to navigate and adapted to reach a youngster audience were reach by the introduction of all the created design element in line with all the principles learned during this period.

Identify the different activities and create the Gantt chart was necessary to divide the different phases and help to follow all activities, showing that areas the necessitates more effort to achieve the proper result are the web development and design process. Anyhow, the content selection is an important characteristic that requires proper time and evaluation.

The style tiles that has been created for the Community Science Museum, are based on the main objectives to reach a young audience while incentivizes the curiosity to engage in learning activities.

The mockup convey all these element in order to provide structrure and show them in an organize way, providing easy access to the product information that the Community Science Museum wants to highlight.

A responsive page was necessary due to the main audience for the site are youngsters with main access via smartphone but keeping in mind the most organize clients who wants to have a desktop version for a more user-friendly interface.

As a self-evaluation, the overall design of the webpage shows that the elements were aligned to all the design principles establish and learnt during this period, the creation of the Gantt chart reflect knowledge acquire identifying the different task and setting timeframe to achieve each objective. The main challenge is to create a responsive page that combines all the element and to be user-friendly in all platforms. The use and interaction with Display flex did not reach the expected behaviour on the web page and therefore require more emphasis and further development. On the other side the use of compress images to facilitate loading times and a fast interaction within pages was achieved.

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