

Swiss Football Clubs Map



Design E-Portfolio M23 MYP5

Global context: Globalization and Sustainability

Key concept: Communities

Related concept: Collaboration

Statement of inquiry: Effective collaboration can be enhanced through design in a highly connected world.

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Research - Global context

Globalization and Sustainability

What is globalization?

Globalization, according to WHO, can be defined as “*the increased interconnectedness and interdependence of peoples and countries.*”¹ The two main elements that come together here are the ease of flow of goods, services, and activities of people from one place to another and the incorporation and change in policies that allow the easy flow of exchange around the areas. Globalization began thousands of years ago when people travelled across lands, discovering new places and meeting new people. For instance, Silk Road linked Central Asia and China and Europe during the Middle Ages. The governments of numerous nations adopted free-market economies after World War II. Over the past 20 years, they have substantially improved their manufacturing capacity and opened new commerce pathways. The discovery of new transportation routes and methods has made it simpler and more effective for growing businesses.

What is the impact of globalization?

Globalization has become unavoidable in today’s increasingly connected world. The impacts of globalization are enormous, both positive and negative. As part of the advantages, firstly, businesses can access raw commodities at lower prices, giving them a competitive edge due to globalization. Due to globalization, various components of a product may be produced in various parts of the world. The automotive industry, for instance, uses globalization extensively because various car parts may be produced in many nations. Services are also impacted by globalization. Many American enterprises have contracted with Indian firms to provide call centres or information technology services. Because of Mexico's reduced labour costs, U.S. automakers moved their operations there as part of the North American Free Trade Agreement (NAFTA).² The end effect is greater employment in nations where it is required, which can boost the local economy and raise living standards. Vietnam is an example of a nation that has greatly profited from globalization. The rise in rice prices brought many impoverished rice farmers out of poverty due to globalization.³ As the standard of living rose, more kids from low-income families stopped working and started going to school. We, as consumers benefit too. Globalisation generally lowers the cost of manufacturing. This implies that businesses can charge customers less for their products. Consumers have access to a greater range of goods, and providing a more diverse and balanced diet in some situations may help enhance health.

However, not everything about globalization is beneficial. Firstly, workers in developed countries risk losing their jobs to workers in countries with low-cost labour. Furthermore, in developing countries, where economies are changing quickly, the situation is more complicated. The working conditions of people in some areas are deplorable. For instance, Bangladesh's garment sector reportedly employs four million people, but the average worker there makes less money each month than an employee in the United States does each day.⁴ Another prevalent issue is the increase in child labour, as kids in low-income families are required to skip school to earn money.

¹ World Health Organization. “WHO | Globalization.” Who.int, Dec. 2010, www.who.int/topics/globalization/en/.

² Chatzky, Andrew, et al. “NAFTA’s Economic Impact.” Council on Foreign Relations, 1 July 2020, www.cfr.org/backgrounder/naftas-economic-impact.

³ Pavcnik, Nina. “How Has Globalization Benefited the Poor?” Yale Insights, 20 Sept. 2016, insights.som.yale.edu/insights/how-has-globalization-benefited-the-poor.

⁴ Butler, Sarah. “Why Are Wages so Low for Garment Workers in Bangladesh?” The Guardian, The Guardian, 21 Jan. 2019, www.theguardian.com/business/2019/jan/21/low-wages-garment-workers-bangladesh-analysis.

Why are global interactions important?

Lastly, global interactions have become extremely important in today's world as we share skills around the world to better our research, technology and innovation. Countries worldwide collaborate, resulting in the rise of global culture. The spread of food, music, clothes and film are only a few of the areas that are impacted by globalization. It also enhances international competition, allowing developing firms to develop new technologies. Global interactions influence the younger generation as well, as knowledge and information can be shared around the world with students, through movies and books portraying global issues. Researchers have coined the term "a global village"⁵ to designate our world in the 21st century, referring to the speed with which social interaction and cultural change have occurred globally as a result of media and technology. We can connect with anyone around the world, anywhere, anytime.

What is social sustainability?

Social sustainability has been defined as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" according to the World Commission on Environment and Development in 1987.⁶ Since then environmental and economic sustainability was the focus of debate, and it wasn't until later on that social sustainability was finally addressed. In the most basic terms, social sustainability refers to the aspects of sustainability that relate to people. This notion assimilates a larger view of the world concerning communities, cultures and globalization. It means protecting the next generations and realizing that our actions today have an impact on many other people across the globe. With ideas like cohesiveness, reciprocity, and honesty as well as the significance of interpersonal interactions, social sustainability focuses on preserving and enhancing social quality.⁷ Essentially, this means ensuring that humans have everything they need. Launched in 2015, the 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (SDGs).⁸ These goals cover vital issues such as poverty, hunger and peace, necessary for social sustainability. A community that is socially sustainable should be able to "*function as a long-term, viable setting for human interaction, communication and cultural development*" (Yiftachel and Hedcock, 1993)⁹.

Why is it important?

Social sustainability, along with the other aspects of sustainable development has been considered necessary to make our world a better place. It allows human beings to have the resources and the rights they need to live. The transition to sustainable corporate practices has been fueled by shifting global perceptions. Higher expectations are being established as a result of consumers' and leaders' increased awareness of their influence on the environment, society, and industry. Sustainability is a challenge that affects everyone, not just those nations that are now suffering the effects of prior activities. Along with the general populace, it has an impact on investors, governments, NGOs, and modern industries.

The truth that non-sustainable actions have produced must any longer be denied. One of the most relevant and tragic issues is the ongoing systematic racism, that infiltrates aspects of who we are

⁵ Traub, Rebecca. "Marshall McLuhan's Global Village." Study.com, 2022, study.com/learn/lesson/global-village-overview-concept.html.

⁶ "Sustainability." United Nations, www.un.org/en/academic-impact/sustainability.

⁷ Diesendorf, Mark. "Models of Sustainability and Sustainable Development." International Journal of Agricultural Resources, Governance and Ecology, vol. 1, no. 2, 2001, p. 109, markdiesendorf.com/wp-content/uploads/2015/09/CorpSust2000.pdf, 10.1504/ijarge.2001.000007.

⁸ "Sustainable Development Goals." United Nations Development Programme, United Nations, www.undp.org/sustainable-development-goals.

⁹ Yiftachel, Oren, and David Hedcock. "Urban Social Sustainability." Cities, vol. 10, no. 2, May 1993, pp. 139–157, www.sciencedirect.com/science/article/abs/pii/026427519390045K?via%3Dihub, 10.1016/0264-2751(93)90045-k.

and how we interact with each other. According to a 2017 research by the NAACP and the Clean Air Task Force, African-American residents are 75% more likely to live in a neighbourhood that is "fence-lined" by a hazardous industrial plant.¹⁰ This is just one of many examples of persistent discrimination and exclusion that come at a high cost to both people and the economy.

What exactly is collaboration?

Collaboration occurs when a group of individuals come together and share their skills to further a common goal, project, or mission. Linda A. Hill, a professor of business at Harvard said, "*Innovation is a journey. It's a type of collaborative problem-solving, usually among people who have different expertise and different points of view.*"¹¹ Putting minds together will reveal a variety of skills and perspectives to address any complexities. Collaboration is a legitimate reason to cooperate. The success of the group project will be strongly influenced by how well you work with others. According to research published in January 2016 by the Harvard Business School, the time spent by employees in collaborative activities has grown by more than 50%.¹²

In addition, Pixar is also a film production company, specialising in animation films that actively use collaboration. One Pixar movie requires 250 individuals and four to five years to produce.¹³ To create consistently successful films, a large group of talented people must collaborate and be prepared to invest the time and effort required. Since collaboration is a challenging process, (*Camarinha-Matos and Afsarmanesh, 2008*) emphasize that certain conditions must be met for success. These conditions include having a common purpose, which is typically expressed as a problem to be solved or a common goal, maintaining a common understanding of the problem at hand, and mutual agreement among the parties to work together.

Why is collaboration on a global level important?

As globalization has become increasingly prevalent, the need for international collaboration is more than necessary. This was most pertinent during the Covid-19 pandemic to ensure the health and safety of the population. Scientists and researchers were able to access global platforms where they could store, exchange, and analyse research data (such as COVID data). By working together, they could improve testing and treatment. This resulted in the faster development of a vaccine. Furthermore, we can collaborate globally employing the top specialists in a sector without physically bringing them to us thanks to digital communication. Real-time collaboration is made possible by voice-over internet technologies, screen sharing, and document sharing in the cloud. This allows us to interact internationally even when time zones might be a barrier. Based on a study conducted by the Economist Intelligence Unit¹⁴, 67% of respondents said that globally diverse teams boost innovation, and more than 90% said that improved global communications would increase profit, revenue, and market share at their companies. Businesses of all sizes have mostly accepted collaboration technologies. Today, updating coworkers on Slack, working on shared papers in Microsoft 365 and Google, and holding online meetings in real time using Zoom, Microsoft Teams, and other platforms are all commonplace.

¹⁰

<https://insideclimatenews.org/news/14112017/african-americans-exposed-oil-gas-wells-refineries-health-risks-naacp-study/>

¹¹ Chen, Nikol. "How to Manage for Collective Creativity - Linda Hill." Laidlaw Scholars Network, 26 Nov. 2019, laidlawscholars.network/posts/56704-how-to-manage-for-collective-creativity-linda-hill.

¹² Cross, Rob, et al. "Collaborative Overload." Harvard Business Review, 20 Dec. 2016, hbr.org/2016/01/collaborative-overload.

¹³ mchamberlainqz. "This Professor Teaches Pixar's Approach to Creative Genius." Quartz, 2 Sept. 2015, qz.com/493732/this-professor-teaches-pixars-approach-to-creative-genius.

¹⁴ Bolchover, David. Competing across Borders - How Cultural and Communication Barriers Affect Business. 2012. https://www.observatoireplurilinguisme.eu/images/Economique_et_social/Economie_des_langues/competing-across-borders_en_reduit.pdf

What methods do we use to connect and collaborate with one another?

Consider all the tasks you finish on an average weekday. Think how challenging it would be to complete your work efficiently without the assistance and backing of your teammates. There are many ways to collaborate and connect on your project; don't be scared to be inventive and involve your team in the brainstorming process. Firstly, creating a successful project requires a team that has good trust and communication. This means that it is important for everyone to be able to voice their opinions. A good team manager should be able to actively listen to everyone's ideas and incorporate them. A collaborative project usually has many things happening simultaneously. This means that individuals need to communicate effectively. During the 21st century, many companies rely on employees around the world, to share ideas and concepts. Video-conferencing technology lets people communicate, face-to-face while being hundreds of kilometres away. Founded in 2012, Zoom is a software program that was widely used during the pandemic, whilst schools and companies needed to connect. Several factors must be taken into account for global collaboration to be successful. The presence of a designated chat room where team members can talk. Companies like IBM use WebEx to interact remotely. It allows them to hold personalised meetings in a secured meeting room. They can transfer files to one another without email and schedule meetings across various time zones. This makes collaboration much easier and faster. Many other platforms are constantly being developed and updated to provide a maximum amount of collaboration and communication. Companies take advantage of this to save money, time, and energy.

In addition, many companies use it to connect and collaborate successfully on a global level. For example, as the automotive industry is developing, traditional engineering tools do not suffice to reach the highest level. Therefore, BMW became the first manufacturer in the world to use technology from a gaming company. In 2015, it partnered with video game developer Epic Games to create a virtual reality environment for users to test-drive their cars.¹⁵ The following image shows how the collaboration process is conducted, as well as the amount of new technology in use. Not only did this make the development process faster, but their sales also increased as a result of the swift purchasing process. To take it a step further, BMW also used the Unreal Engine to create the BMW iX.¹⁶ This consists of a VR program that allowed designers to shape their cars without physically building them. They were able to create 3D renderings at a very early stage.



How does design improve collaboration?

Design is extremely important for effective collaboration. Effective visual design is deliberate. It has the ability to elicit subliminal and unspoken appeal that facilitates a smooth transition from browsing to purchasing. It can influence individuals to take the desired action since it is memorable, easy to grasp, and passionate. Humans are generally better at memorizing images

¹⁵ "BMW Group Uses Virtual Reality Engineering in Its Vehicle Development | BMW.com." [www.bmw.com, www.bmw.com/en/events/nextgen/global-collaboration.html#:~:text=Since%202015%2C%20BMW%20has%20been](http://Www.bmw.com, www.bmw.com/en/events/nextgen/global-collaboration.html#:~:text=Since%202015%2C%20BMW%20has%20been).

¹⁶ Jones, Edward. "BMW and Epic Games: A Match Made in Virtual Reality." DuPont Registry, 24 Nov. 2020, <https://blog.dupontregistry.com/bmw/bmw-and-epic-games-a-match-made-in-virtual-reality/#~:text=To%20take%20it%20a%20step>.

than words or numbers. According to memory experts, if you hear something, you'll only recall 10% of it three days later. However, you'll remember 65% more if an image is included.¹⁷ Indeed, a picture is worth a thousand words. Consider some of the most recognizable brands in existence today, such as the Nike logo, the elegant photography of the premium label Gucci, or the authentic and creative social media posts from Starbucks. Brands that can capture our interest visually encourage us to think beyond the business and embrace the principles, mission, and individuals that created the logo. Without excellent visuals, the best connection and collaboration with the customers are impossible. Furthermore, adding visual icons allows us to break the language barrier and make the designing process much easier. Marketers are aware of the importance of visual design. About 300 marketers from international brands were asked about their thoughts on the significance of images in fostering genuine connections for Widen's 2020 Connectivity Report.¹⁸ This analyzes the difficulties that marketers and creatives encounter in reconciling technology with humanity. Almost all respondents (98%) agree that strong audience interactions are facilitated by high-quality visual design in marketing content.

Face-to-face communication has been a part of human evolution. However, face-to-face interaction is now less common than using a computer screen or a mobile device. In this way, UI and UX are processes used by designers to improve communication. A website, app, or other electronic device's user interface (UI) refers to the screens, buttons, toggles, icons, and other visual elements that you interact with when using it. A product's complete user experience including your feelings during the encounter is referred to as UX. A successful UI/UX design is the result of a few crucial elements. First and foremost, it's crucial to comprehend consumer needs thoroughly. Some crucial factors to take into account are the tasks that users are attempting to do and the information they require access to. These solutions will aid UI designers in producing an interface that is both efficient and user-friendly. There are numerous well-known instances of effective UI/UX designs. The iPhone is one of the most well-known.¹⁹ When it was first introduced in 2007, the iPhone immediately overtook all other smartphones as the most popular device. Because it featured a graphical user interface resembling that of a desktop computer, the iPhone was a success. Users found it much simpler to interact with the program on their mobile devices as a result. A user interface (UI) that is well-designed can make a product simple to use and aesthetically pleasing, which can boost user engagement and connection.

¹⁷ Medina, John. "Brain Rule Rundown." Brain Rules, brainrules.net/vision/.

¹⁸ Marketing, Widen. "2020 Widen Connectivity Report Explores Struggle to Balance Quality Visual Design and Business Success." [Www.widen.com](http://www.widen.com), 29 Jan. 2020,

www.widen.com/press-releases/2020-widen-connectivity-report-explores-struggle-to-balance-quality-visual-design-and-business-success.

¹⁹"Apple's Website: Comprehensive Analysis of the UX Design with Heatmaps." Capturly Blog, 19 Feb. 2021, capturly.com/blog/apples-website-comprehensive-analysis-of-the-ux-design-with-heatmaps/.

CRITERIA A: Inquiring and Analysing

Strand I - Explain and justify the need for a solution to a problem for a specified client/target audience

Brainstorm

As mentioned in my research, collaboration and communication are crucial for the development of the 21st century. Therefore, for my product, I wanted to improve my local communities through collaboration. I am part of a local football club and enjoy playing the sport. However, when I first wanted to join, I found it very hard to pick football teams that were suitable for me and find out how to contact them. This is a prevalent issue throughout many clubs in Switzerland. Although the bigger, more well-known clubs have a better reach, the smaller clubs can be very hard to find. This makes it difficult for parents who would like to enrol their children, as well as coaches, who want to apply at a club. In my brainstorming process, I also thought of the school community. The clubs are a very important part of strengthening communication between students and teachers. However, when presented with a wide variety of clubs to choose from, students and parents are often confused as to what exactly the club offers and whether it can help their child. As a consequence, my solution was to have a website dedicated to the different clubs. The teachers could put descriptions and photos of their club, including what activities the students will be doing. In return, parents could add reviews at the end of the term to firstly give other parents some advice, and also constructive feedback for the teachers.

In the end, I chose to focus on the local community because it is an issue I have experienced before. I have also talked to classmates and parents that relate to this issue and have experienced the lack of information on the internet. I think a solution to this problem could largely help the football community in Switzerland, benefitting the young talents of the future.

Problem

Local sports clubs are crucial for the collaboration of the community. Not only do they consist of an environment in which children and adults can train to keep fit but also builds many new connections between different people. They boost local commerce, create employment opportunities, and unite diverse populations. In Germany, local governments make efforts to push community sports clubs to work more closely with schools, other sports clubs, kindergartens, and statutory health insurance, to in turn enhance the clubs' focus on the welfare and collaboration of the community.²⁰

Football plays a big role in uniting the Swiss community. There are over 1300 football clubs and more than 10000 matches taking place every weekend.²¹ An increasing number of parents look to enrol children in football clubs such as this. However, not many clubs provide an accessible reach for people to contact them. Parents often find the top clubs to be full and have to stay on the waiting list. They are not aware that there are multiple small regional clubs also available. This is because their websites are sometimes not at hand on the official Swiss football website or they don't show up on Google Maps. Furthermore, many certified coaches are unable to find available clubs to work at. This hinders the overall collaboration of the community.

²⁰ Ibsen, Bjarne, et al. Sports Club Policies in Europe. Sept. 2016,

www.boris.unibe.ch/96268/1/Ibsen-Nichols-Elmose-Osterlund_Sports%20club%20policies%20in%20Europe.pdf

²¹ "Sport and Leisure – Facts and Figures." Federal Department of Foreign Affairs FDFA,

www.eda.admin.ch/aboutswitzerland/en/home/gesellschaft/sport-und-freizeit/sport-und-freizeit--fakten-und-zahlen.html.

Client

My client is M.P, a 17-year-old student from Ukraine pursuing her secondary studies in Switzerland. She does several sports in her free time, including dance and badminton. Recently, she would like to join a football team but is confused by the number of clubs in her area and which ones would be a good fit for her ability and time preferences. She is looking to find a club that plays recreationally but also attends competitions. She would like to collaborate and communicate with new people and enjoy the sport. In order to fully understand my client's needs, I conducted an interview, where I prepared questions referring to her wanted qualities in the solution.

Interview questions:

- What are some qualities you are looking for in a football club?
 - I would like to join a football team that plays in the regional leagues. A girls team that plays in the U19 or 4ème ligue with good collaboration and communication skills is ideal.
- How far are you willing to travel for a team?
 - I am ready to travel in a 20km radius, but the club should be accessible by public transport.
- Would you like to participate in clubs that travel internationally?
 - I would enjoy travelling internationally, but preferably not during school days.
- Would you like to know where the club is primarily located?
 - Yes, I would like to know the sports centres and stadiums that the club has.
- Would you be interested in contacting the coach directly?
 - I prefer contacting the club through their website, as their secretary can provide good insight to help me join the right team.
- Are you going to move to other parts of the country soon?
 - No, I will be staying in the same region but I would like to have knowledge of other good national clubs.
- What are some qualities you are looking for in the map?
 - I would like to have a product with smart interactive and navigation aspects. I want to be able to search for clubs that are available in my area and access the club's website.
- Do you have any friends or family that are looking for football clubs?
 - Yes, I have a little brother, aged 7, that is looking for a small football club to train at. I also have relatives that are interested in coaching football.

Target Audience

The community that is most affected by this issue is the local and national communities. My target audience will be focused on teenagers and football players that are looking for clubs, as well as parents. Coaches and referees are also part of the target audience as they are frequently on the search for available clubs. By having more players start football from a young age, it increases the future talent of the Swiss community. In addition, it keeps the society happy and active, as they unite to play and train in a sustainable community. In this way, collaboration is raised within the population.

Strand II - Identify and prioritize the primary and secondary research needed to develop a solution to the problem

Research Plan

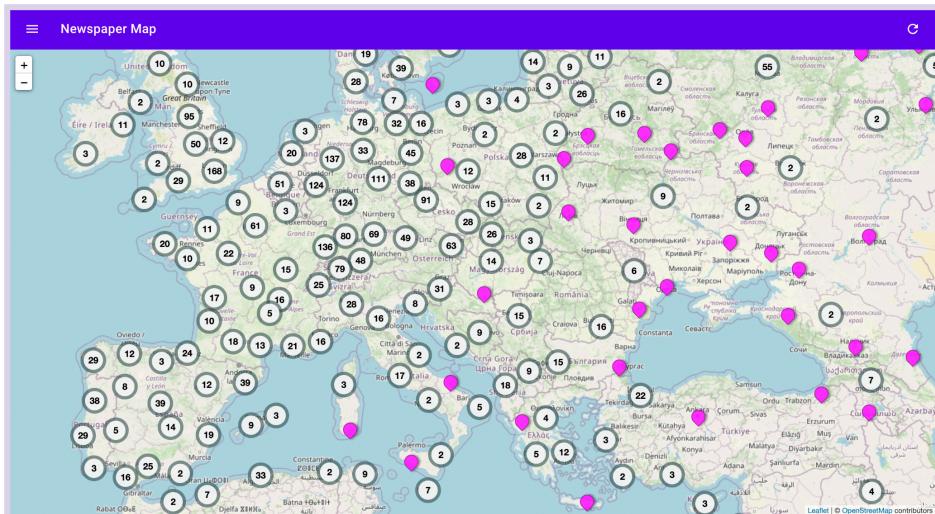
Research area	Why is this information relevant?	Where will I find the information?	Primary or secondary research?	What is the priority?	When will I research this?	Progress (✓)
Impact of the problem	So that I can recognise what my audience needs as a possible solution	Interviewing my client and teammates in my club	Primary	High	End of November 2022	DONE
Target audience	By having a specific age range, I will be able to design my product accordingly.	Through my client, classmates, and teammates	Primary	Medium	Start of December 2022	DONE
Analysis existing products	To find out how different products that display similar information are designed, what techniques they use to attract attention	Internet	Secondary	Medium	December 2022	DONE
Resources	Learn what applications are most effective	Internet, websites	Secondary	High	Start of January 2023	DONE
Tools	Find what tools are available to present this information	Internet	Secondary	High	January 2023	DONE
Learn how to code HTML	to create a website for my product, I need to be able to write HTML code.	Youtube tutorials	Secondary	High	January 2023	DONE
Ergonomics	To facilitate how my client and audience navigate the product, make what they're looking for faster to find	By looking at various existing products	Primary	Medium	February 2023	DONE

UI	To attract attention, have a better layout that is helpful for users, learn how my audience interacts with my product	Look at existing products + videos on how to improve user interface	Primary and secondary	High	February 2023	DONE
UX	To learn what kind of experiences and interactions my audience has with the product	Asking my client + existing products, youtube videos	Primary and secondary	High	End of February 2023	DONE

Strand III - Analyse a range of existing products that inspire a solution to the problem

Analysis of Existing products

Example 1 - Newspaper Map²²



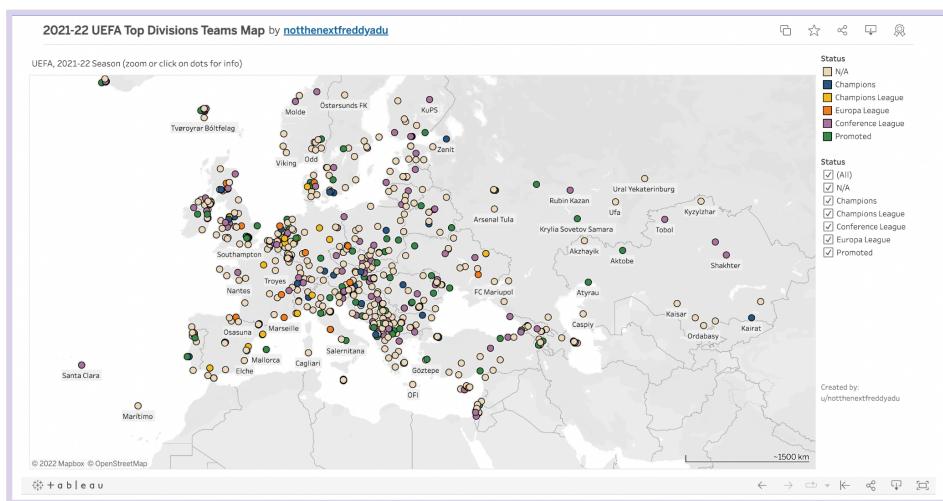
The first existing product I was inspired by is a map showing newspapers worldwide. It is represented by pink markers that are placed at the headquarters of the newspaper. When clicked, it opens a pop-up that has a link to the online site of the newspaper as well as the primary language it is published in. The markers are then grouped in clusters, with the number of newspapers in a specific region. This is done so that, when zoomed out, the viewer can see how many newspapers are in a specific area (for example, a country). In this way, there is not an excessive amount of markers that distract the viewer. This product intends to provide a unified site that has all the links to newspapers all over the world. As globalization is becoming more relevant, it is important for us to be educated on what is happening around us. Many times, local newspapers portray their news more accurately than famous international newspapers report the information. Having a specific program where a user can go on the different websites depending on their interests, allows them to be informed and knowledgeable.

²² "Newspaper Map." Newspapermap.com, newspapermap.com/.

Strengths of this interface include the ability to declutter the markers into clusters of numbers. When there are many newspapers in a region, the markers would overlap each other, making it difficult for the user to access the right one. Furthermore, when a cluster is clicked, it expands to show the markers grouped within. This is a smart way to improve the user interface in the program. Another significant strength is the addition of the language of the newspaper. This means that the user knows whether they will be able to understand the information. The product also has various weaknesses. Firstly, there is a search bar in the menu of the map. However, it doesn't work as it doesn't give me possible solutions for the newspaper I searched for, in the region. This could be improved by adding a drop-down as soon as a user starts typing. In addition to this, the menu could be further enhanced. An interactive key could be the first way to do this. The user should be able to filter the information they want to view so that their search is more efficient and less time-consuming.

I was mainly inspired by the simplicity of the UI in the product. It has a straightforward colour code and is efficient to zoom in or out. The ability to directly go to the website is also very useful.

Example 2 - 2020-2021 UEFA Football Teams Map²³



This existing product communicates a map of the 2021-22 UEFA top division football teams. The teams are displayed by different coloured circle markers that are explained in the key. When clicked, the pop-up of the marker shows the home city, league, stadium, status, team and capacity. The target audience for this product would be potential football players that are looking to play for top-tier clubs in Europe, as well as football fans. Fans are able to educate themselves on teams around the continent and possible future plans to watch matches. This helps in collaboration in the football world as the information has been collected in one place for players, coaches and fans to view quickly.

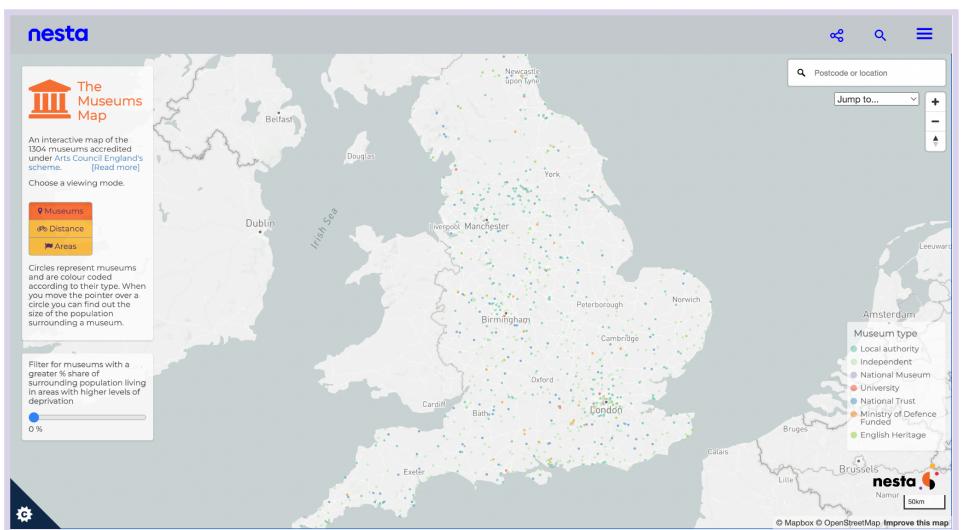
This product shows many strengths. Most importantly, the key at the left of the interface is very helpful for the user. They can specify their search into one category instead of looking through big amounts of unneeded information. Moreover, the different coloured markers make the map much more visually appealing and easier to browse. The user is immediately able to recognise what league the club is in and therefore where to zoom in. Another strength is the map shows only

²³ notthenextfreddyadu. "2021-22 UEFA Top Divisions Teams Map." Tableau.com, 2022, public.tableau.com/app/profile/notthenextfreddyadu/viz/2021-22UEFTopDivisionsTeamsMap/UEFA2021-22Seasons.

UEFA football clubs. This makes it more focused on a target audience so that they don't get lost in a vast list of clubs. However, it also has some weaknesses. To begin, the information in the pop-up is not organised in a logical manner. The team name should be in bold at the top so that the viewer can easily recognize it. Additionally, in countries like the UK, there are many clubs densely packed into one region. This results in the overlap of the markers, with many being hidden underneath. This could be solved by clustering so that it would show the number of markers and when zoomed in close enough, identify the exact location of the club. This would make the user interface more efficient. Also, the map presents some lag or delay. While moving with the cursor, it blocks out some regions. This could be due to the overload of information going through the code. The viewer is also unable to zoom in with two fingers on a touchpad. This wastes some time, as having to click the plus or minus button is not ideal. Lastly, the addition of the website link of the club would make the next step for the user easier.

The key menu of this program inspired me the most as I think it is very useful for the user. The map has a lot of information and being able to filter it is time-efficient. The colour coding system of the map is also resourceful because it stands out to the viewers. This map shows football clubs recognised by UEFA, so it presents opportunities for me to display more local and amateur clubs in Switzerland.

Example 3 - Map of Museums in England²⁴



This product is an interactive map of museums in England. They are exhibited through different coloured markers that refer to the colour scheme in the key. The key shows the different types of museums, such as independent museums or national museums. The product intends to show the users information about museums. It can also be useful for potential tourists that would like to visit England.

The strengths of this product include the organization of the key. The museums are organised into several categories by colour, making it easier for the user to utilise the program. Even while zoomed out, the user can see what regions have more of a specific type of museum. Furthermore, when you hover the pointer over a circle, it indicates the population living near the museum. This can be helpful to see how much of a reach the museum can have compared to its sales. The map

²⁴ Davies, John, and Antonio Lima. "The Museums Map." Nesta, 6 Mar. 2017, www.nesta.org.uk/data-visualisation-and-interactive/museums-map/.

also has a search bar, that allows postcodes and locations. It zooms in directly on the region submitted. This is especially useful for tourists, who are looking for a specific area to visit. Lastly, the program offers several viewing options. For example, the user can switch to a distance map that shows how many museums are located at a certain distance. This can be practical for people that are looking for temporary residences close to the city during vacations. There are also weaknesses that hinder the overall effectiveness of the map. Firstly, the circles are extremely small, which reduces the aesthetics of the product. It is hard to distinguish between the green and blue circles. The circles don't get bigger even while zooming. This could be done by slightly making the markers bigger and clustering them in groups. The user should also be able to filter the specific museums they want to see to facilitate the process.

The organization of the map is most inspiring. The viewing options and the colour coding of the key make the navigation of the map easier. The user can visualize information more efficiently, even if they are not familiar with the locations.

Conclusion: These three maps implement an effective user experience using different techniques. Clustering the markers is the first method to do this. This makes sure the user doesn't immediately see an excessive amount of information that confuses them. Through the clusters they can see the number of markers in the region, slowly getting less while they zoom in. Another method is by using distinguishable markers to identify different types of clubs. This is not only time-saving but also helps the user specify the information so that they can find clubs that fit their needs. The last map incorporates a search bar that leads the user directly to a club or a location they entered. This is important because the user does not need to waste time looking for information on the map, especially useful for new residents in a country. These existing products show that a user must have the most effective, time-saving and productive time using a map.

Strand IV - develop a detailed design brief which summarizes the analysis of relevant research

Research

No.	Research Question	Answer
1	How do football clubs promote collaboration?	Football is a game that unites people and communities around the world. Collaboration is vital in football clubs to make the game more entertaining for the audience. Not only, is it done internally within the club, but many clubs also communicate with other clubs on a regional, national and even global level. This is done through the organisation of matches and new leagues. For instance, UEFA (the Union of European Football Associations), recently announced that the Champions League will change to a 36-team tournament that plays 10 matches in each, organised into a big table. ²⁵ This means more teams and more matches, increasing entertainment for the fans. Another method of collaboration is through transfers in clubs. Although there are many reasons for transfers, clubs collaborate by agreeing on a player's move. A team collaborates with different players over many years by doing this.

²⁵ "New Format for Champions League Post-2024: Everything You Need to Know." UEFA.com, 25 May 2021, www.uefa.com/uefachampionsleague/news/0268-12157d69ce2d-9f011c70f6fa-1000--new-format-for-champions-league-post-2024-everything-you-need-t/.

2	How are the football leagues organised in Switzerland?	<p>The Swiss Football league system consists of several interconnected leagues for association football clubs in Switzerland. It has a hierarchical structure and many rounds of promotion and relegation between leagues (<i>Figure 1</i>).</p> <p>The country's men's premier league is known as the Swiss Super League or the Raiffeisen Super League.</p>
3	Are there specific websites available for the clubs?	<p>The Swiss Football Association has an official website in which they offer links to websites for all the different leagues.²⁷ These leagues in turn show all the clubs that play as well as the match scores. For the higher leagues, there is a complete profile of the club, including their stadium and respective website. Additionally, for most of the regional clubs that play in the lower leagues, there are also websites, on which interested people can contact the club.</p>
4	What methods are available to communicate the information of all the Swiss clubs?	<p>After analysing existing products, I discovered that there are several methods to portray the information. Firstly, different types of websites are available to make maps.²⁸ Using GUI (graphical user interface), they have the base layer of a map and the creator simply has to add in their points. This makes it easy and saves time to create. Google's "My Maps" and "ZeeMaps" are two examples of this kind of platform. The downside of this is that it limits the designs and does not allow for full creative control.</p> <p>The second method is using a programming language. This means using an open-source map and then adding points yourself. The difference between this and GUI-based maps is that we write each line of code ourselves. We can choose the colour of the marker, the size, its link, etc. The computer code lets us choose exactly what we want.²⁹</p>

²⁶ "Swiss Football League System." Football Wiki, football.fandom.com/wiki/Swiss_football_league_system.

²⁷ Schweizerischer Fussballverband - SFV, www.football.ch/sfv.aspx.

²⁸ "7 Online Map Makers That Will Simplify Your Life in 2022." Unearth, www.unearthlabs.com/blogs/online-map-makers.

²⁹ Mullen, Lincoln. "Making Maps with Code." Lincolnmullen.com, lincolnmullen.com/projects/spatial-workshop/programmatic-maps.html.

5	What programming language is the most effective to make the product?	In order to make a successful interactive map, it is necessary to learn a programming language. ³⁰ Python is a programming language used to create software. Its advantages include its flexibility and extensive library. ³¹ However, it is somewhat limited in design. JavaScript is another programming language that is used to create interactive programs. ³² With the help of markup languages such as HTML, (which structures the page), and CSS, (tells the browser the appearance of the page), JavaScript also has numerous open-source libraries like d3.js and Leaflet that can create interactive maps. ³³
6	Are there open-source blank maps to use?	Before adding information to the map, you have to add the base layer of a map. There are many open-source websites that allow you to use their maps. An example of this is the website “OpenStreetMap”. This is a free, open geographic database that allows users to search for national or global maps in different styles. ³⁴ Then, while writing the code, the user has to give the link to the map and add an attribution. Then they can add the coordinates of the location they would like to focus on.
7	What are the methods for differentiating the different leagues?	The best way to differentiate the Swiss Leagues is by adding a key. A map key helps the reader understand and navigate the map. The key can have different symbols, colours or shapes designated to a specific league. In this way, the reader can see different types of markers on the map, and directly know what league the club belongs to.
8	How can the designer give more information about the club?	For the information to be more useful to the reader, the designer can add a profile of the club, containing information such as its stadium capacity, number of teams, status, etc. In this way, the reader can compare different clubs and get the full view. Moreover, the designer can also add the club website, so that the user already has their next steps, like contacting the club.
9	How can the designer improve the user interface and experience?	The user interface of a product makes it more appealing, functional and ergonomic. According to the W3C (World Wide Web Consortium), accessibility, and usability are important factors while creating a web program (Web Accessibility Initiative 2016). ³⁵ Accessibility refers to easy navigation of the product for everyone, including people with disabilities. This includes keyboard navigation, alt text and high contrast ratios. This also improves the overall usability of the design, making it more efficient, effective and satisfying. Findability is another feature that improves the user interface. It refers to how easily users can find and use the features they are looking for. ³⁶ On mapping applications should have different functions that allow the user to navigate. There should be a balance between a minimalist design so that users don't get

³⁰ visitgis. “5 Top Programming Languages 2022 for GIS Developers.” VisitGIS, 20 Mar. 2022, visitgis.com/5-top-programming-languages-to-learn-in-2022/#:~:text=JS%20used%20by%20big%20names.

³¹ Worley, Summer. “What Is Python? - the Most Versatile Programming Language.” Www.datacamp.com, Mar. 2022, www.datacamp.com/blog/all-about-python-the-most-versatile-programming-language.

³² “What Is JavaScript?” Umbraco, umbraco.com/knowledge-base/javascript/#:~:text=JavaScript%20is%20a%20programming%20language.

³³ “Popular Open Source JavaScript Frameworks for Data Visualisation.” Sonalake, 22 Nov. 2016, sonalake.com/latest/popular-open-source-javascript-frameworks-for-data-visualisation/.

³⁴ Coast, Steve. “OpenStreetMap.” OpenStreetMap, www.openstreetmap.org.

³⁵ Henry, Shawn Lawton, et al. “Accessibility, Usability, and Inclusion.” Web Accessibility Initiative (WAI), Mar. 2010, www.w3.org/WAI/fundamentals/accessibility-usability-inclusion/.

³⁶ Cardello, Jen. “Low Findability and Discoverability: Four Testing Methods to Identify the Causes.” Nielsen Norman Group, 6 July 2014, www.nngroup.com/articles/navigation-ia-tests/.

		confused, and a more excessive design, with lots of features. Users should be able to access the legend of the map and recognize symbols such as search, info, go back to the centre, etc.
10	How does the user interface help the user navigate the program?	An essential component of user interface design is the navigational components. They make it easier for consumers to get through websites (or products) and accomplish their objectives. ³⁷ Examples of navigational elements are menus, checkboxes and sliders. By doing this, the user is guided through the process to reach their final goal.

Design Brief

How can we make collaboration effective through design in a highly connected world?

I will design an interactive map that portrays all the football clubs in Switzerland. The target audience of my product is the local and national communities of Switzerland. This includes parents, football players and coaches. My client is M.P, 17 year-old student, looking to join a regional competitive football team.

This improves collaboration as my product gives users a unified location to look at clubs around them. Sports clubs build new connections in the community, allowing young players to train in a competitive environment, and also resulting in more employment and entertainment. Through my design, people can find and join clubs easier and faster. Coaches will be able to hire new players and make transfers, as well as organise friendly matches with other teams nearby. As the world becomes more digitally connected through globalization, users can easily share the program with people around the globe.

My product will be a website made using HTML and Javascript code as my research shows that this is the best programming language for my needs. I will write the HTML code using StackBlitz, a web-based code editor on a Macbook and use the Leaflet Javascript library³⁸ to make the map interactive. This will be turned into a link that is accessible to my client and target audience. The map will be of Switzerland, with all the roads and streets visible, with a recognizable logo and heading. There should not be any distracting symbols like shops, parks or other information. The map's markers will be distinguishable in different colours.

A successful product should have a completed map of all Swiss football clubs shown on their respective training grounds. As proven by my research, to improve the map's usability, it should also have an accessible link to its websites in the pop-up marker. The markers will be coordinated with a legend located in the corner so that the user can easily distinguish them and enhance findability. Lastly, according to my research, the map should be easy to use and navigate on all types of devices, improving accessibility.

³⁷ "Introduction to UI Design and Why It Matters." Hotjar, 19 Oct. 2022, www.hotjar.com/ui-design/.

³⁸ Agafonkin, Volodymyr. "Leaflet — an Open-Source JavaScript Library for Interactive Maps." Leaflet, 2011, leafletjs.com/.

CRITERIA B: Developing Ideas

Strand I - Develop a design specification, which clearly states the success criteria for the design of a solution

Design Specifications

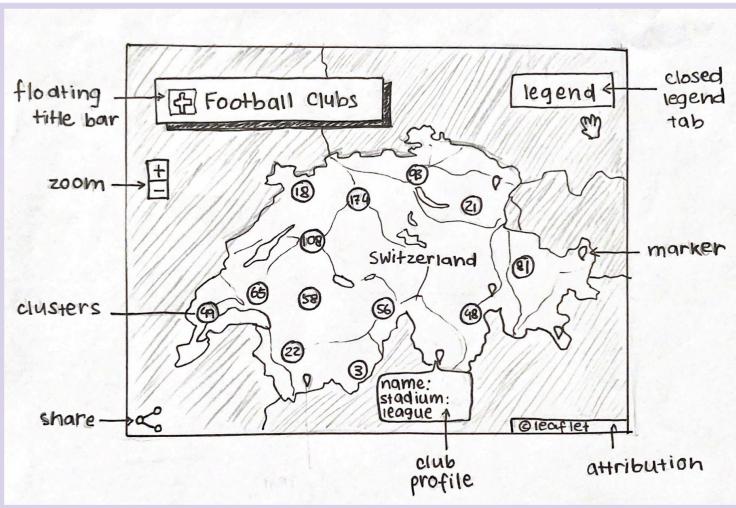
Attributes	Explanation
Functionality	Functionality is one of the most important elements of my product as this is essential for my client to solve their problem. It allows users to find clubs in their region and further information that can help them. I will ensure functionality by carefully writing each code with comments, so I know what happens at each line. In addition, I will perform several trials and troubleshoot my code, when it shows errors. I will also test my product by allowing other students and teachers to use it and collect feedback.
Aesthetics	My product also has to maintain aesthetics as this makes it more appealing to users. It also increases the readability of the map. The map should have a simple but meaningful design that allows navigation. Colour schemes are also important for aesthetics. In order to achieve this I will pick a base layer that is not distracting for users. It should only have essential information like major constructions so that users can locate the stadium or club. The markers will also have colours that are distinctively different but not confusing.
Cost	I will create my product using open-source resources that can be downloaded on my Macbook. As my product is online, a web application, it will be essentially free. Using the link, users can access the map anytime, anywhere.
User-experience	My product should have a good UX design as this is what helps users use it successfully. The map can have a lot of information, but if this is not represented in the right way, could deter a user. Therefore, my map will ensure a good overall experience, by establishing the functionality and aesthetic criteria mentioned above. As well as this, I will add additional usability functions such as zoom level, so that only essential locations and structures show up. Clustering the markers is another method to avoid the surplus of information in the beginning. Users will only see the number of markers (clubs) in a region before zooming in to see the exact location of their marker.
Target audience	As my map will be accessible by an online link, the target audience is essentially anyone interested in searching for a club. This could be parents who are looking to enrol their kids in football, players, young and old interested in playing competitively or recreationally. It also includes coaches who would like employment at a club or to organize matches.
Collaboration	Being a related concept, my product has to enhance collaboration. This will be done through the map as it will entice players to join a club. Football is a sport that accommodates plenty of collaboration through, players, transfers and coaches. Young players will be able to find clubs near them, building talent for the future of the sport.
Time	After planning my product and developing concept ideas, I have two months to build a successful map that promotes collaboration. Afterwards, I will collect feedback and evaluate my final product.

Resources	As mentioned in my design brief, I will produce my map using free-to-use resources. I will download a base layer of a map of Switzerland from OpenStreetMaps, an open-source website. The product will be written in HTML code with the Leaflet JavaScript library on a Macbook Air 2020, using the coding website StackBlitz. The file will then be transformed into a web link using a free web hosting site.
Complexity	Coding the map would take a long time and due to my time constraint, I have prioritised certain specifications. I will first focus on including the maximum number of clubs on the map. There are more than 200 clubs in one canton, so I will then focus on clustering the markers. This ensures a good user experience. I will add a search bar so that the user saves more time by looking in a specific region. I will also add a header with a logo representing my design. Lastly, if there is enough time, I will attempt to add a legend. This is very time-consuming to do manually by code for more than 1000 markers so it will not be my main priority.

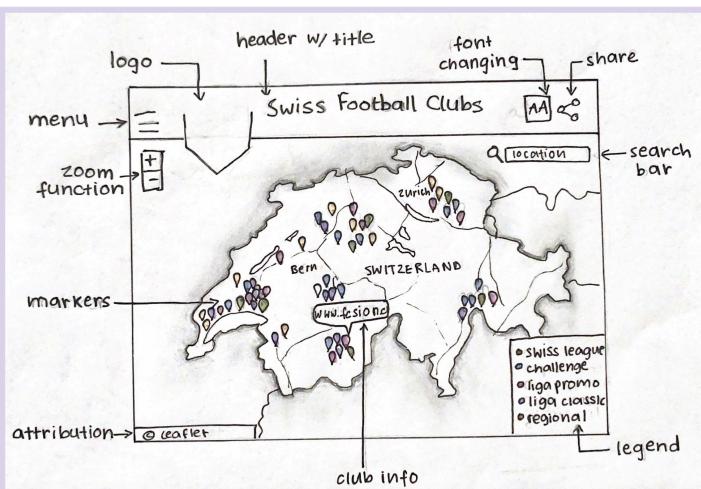
Strand II- Develop a range of feasible design ideas which can be correctly interpreted by others

Concept Ideas

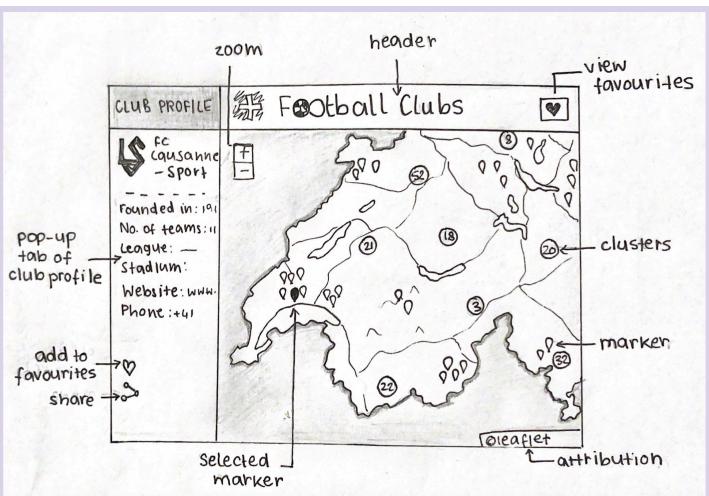
Before starting my product, I drew several concept ideas for my map. These are sketches of how the website should look, with labels. This helps me visualise my ideas to find the best layout to solve the problem. I also made logo designs as this is what attracts the audience and makes the product more memorable.



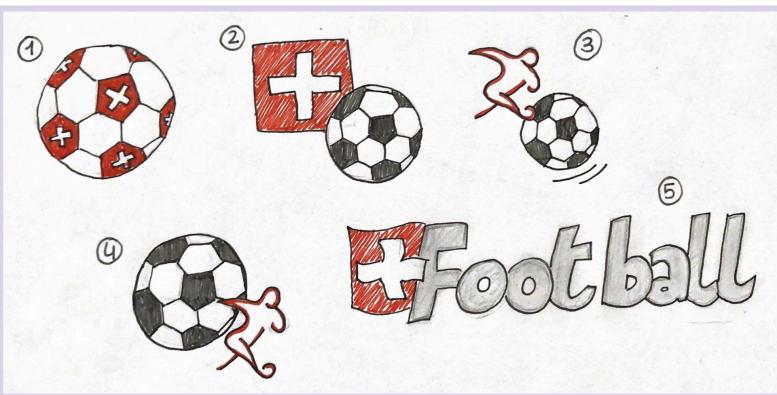
DESIGN 1 - My first design has a floating header that reads “Football Clubs” with the flag of Switzerland. The legend is also in a closed tap that the user can hover over to look at. The markers are grouped using clusters. The icons display the name, stadium and league of the club. It also has a share button that allows the user to send the club information to other people.



DESIGN 2 - My second design has a fixed header with a logo and a title of “Swiss Football Clubs” so that the reader immediately knows the topic. The maps are colour coded according to the leagues in the fixed legend. The icons display the name and website of the club, to which the user will be redirected. The map also has a search bar and functions to change the font size and share information.



DESIGN 3 - The main distinction in my third design is the side menu that opens to show the detailed club information of each icon. The user can add this to their favourites and/or choose to share it. The markers are organised in clusters. The header is also more creative and has a button to view favourited clubs.



The aim of my logo designs is to illustrate the country of Switzerland while accurately portraying the objective of the club. I drew different designs implementing the colour red, the SFA logo and a football to see which one looks best for my product.

Strand III- Present the final chosen design and justify its selection

Survey of Concept Ideas

The final sketch and changes will be determined by a survey conducted on a section of my target audience. They will include my client, several MYP5 classmates, teachers and members of a local football club. By having a wide range of opinions, I will gain different perspectives when determining the strengths and weaknesses of the chosen design. This is important so that the aesthetics, functions, size and other features of the product could match the wants and needs of the local community.

Survey Form Description

To choose which among the three designs will be the best and identify possible improvements, I made a survey questionnaire. The first question is “*Do you think sports clubs are an effective way to improve collaboration and communication within a community?*”. This is a close-ended question with the aim of understanding if the surveyee has any knowledge of the issue, as my solution aims to improve collaboration. The second question is a multiple choice question asking “*Out of the 3, which design do you think is the most suitable for the local and national community?*”. As I have to eventually choose a final design, having the opinion of the majority of the target audience would help me decide. The third question is “*Justify your selection in question 2*”. This open-ended question allows me to understand the strengths of the favoured design so that I know that it is something that should remain unchanged. The fourth question is “*Choose the best statement based on the chosen design. You may pick more than 1.*” This allows me to assess the design

specifications of the most favoured design. It provides statements for the surveyee to tick if true so that I can identify parts of the design to ameliorate. The last question is “*What improvements would you like to see in the design chosen in question 2? Please provide at least one.*” This question allows me to identify any issues in the most favoured design that can be resolved to improve its effectiveness.

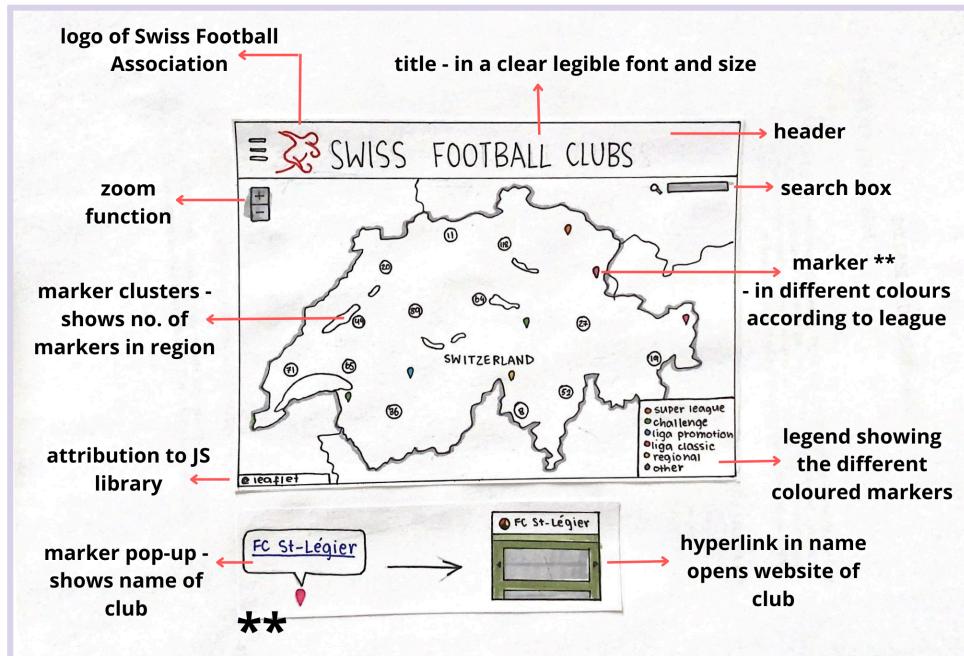
Question	Analysis
1) Do you think sports clubs are an effective way to improve collaboration and communication within a community?	Based on the results, 6 out of 7 respondents replied that they think that sports clubs are an effective way to increase communication and collaboration in a community. The 1 surveyee that disagreed was a teacher that was not highly interested in sports and did not have any kids. This shows that most people agree that sports facilities and clubs can help thrive in a more connected and collaborative community.
2) Out of the 3, which design do you think is the most suitable for the local and national community?	The results show that 4/7 considered Design 2 the most suitable to provide a solution to the problem. The remaining 3 respondents preferred Design 1. As the votes did not heavily result in one design, I will aim to use the strengths of each design.
3) Justify your selection in question 2.	Based on the results, the main reason for the choice of Design 2 consisted of its attractiveness and layout. The respondents stated that the functions (legend, search bar) were easily accessible to the user. They also like the simplistic heading. The justification for Design 1 consisted of its effectiveness in including the clusters to avoid the overlapping of the icons. This function immensely made the design more appealing and functional to the respondents.
4) Choose the best strengths based on the chosen design. You may pick more than 1.	Based on the results, the main positive aspects of Design 2 included its simplicity in attracting the visual appeal of the user. The layout and icon colours to show the leagues were also effective. According to the survey, the strengths of Design 1 included its accessibility and navigation to view the clubs and more information about it. It also was clear that the clusters would increase functionality and user experience.
5) What improvements would you like to see in the design chosen in question 2? Please provide at least one.	Based on the results, the improvements suggested by the respondents of the two most favoured designs include using a fixed heading to help with more effective navigation, the use of clusters to group the icons, and the use of a legend to illustrate the leagues the clubs are in. Essentially, my final design would be a merging of Designs 1 and 2 to create the most interactive and visual map.

Final Idea

After extensive research, analysis and evaluation of my designs against the specifications and opinions and feedback in the form of a survey, I have finalized Design 2 as the most suitable for my specifications. The specifications created during strand 1 of criterion B were used to evaluate the design. Although I was initially divided between designs 1 and 2 due to the somewhat equal results in my survey, I decided that design 1 would be the most adaptable to changes and implement additional functions. Therefore, the final idea will have the simplicity of Design 1, as the users like

the visual appeal of this design. The markers will be colour coded according to the legend. There will also be a search bar where the user can search a town or city and the map will zoom in on that location. When the user clicks on a marker, it will show the name of a club with a hyperlink to its website. However, the respondents also liked the functionality of the clusters in Design 2, so I will add this function to my map.

Final design prototype



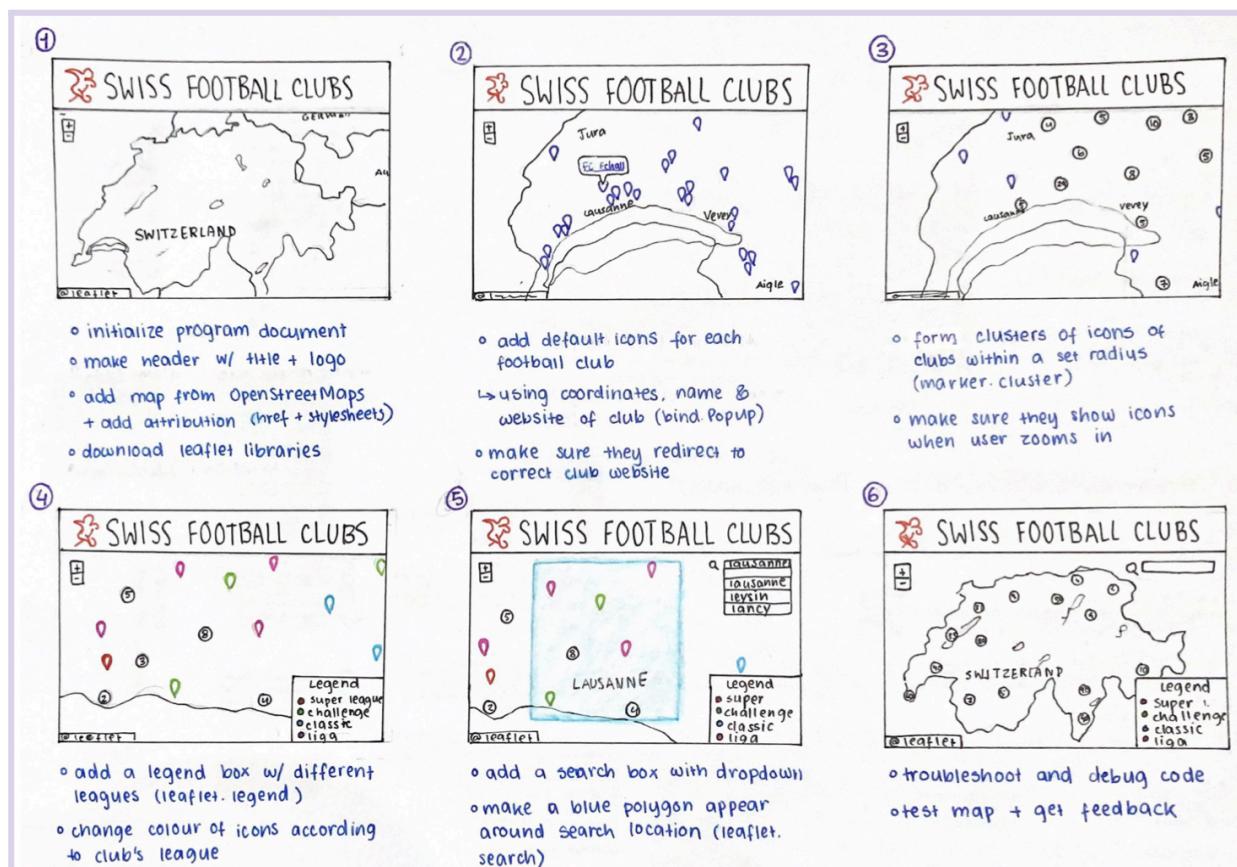
Specification	Justification
Functionality	The final design will be functional as the marker will be pinned at the location of the club. It will show the name of the club and allow the user to access their website. The search map will allow the user to save time and look up any specific areas.
Aesthetics	The main colour theme of the map will be red, present in the header and the clusters. This makes the map stand out to the Swiss community, while not being too distracting to navigate.
Cost and accessibility	As the product is a public website, it will not have a cost constraint. It should be accessible to all viewers that have access to a device and the internet.
User experience	The legend of the map will allow for a better user-experience as it will ease the navigation. The map clusters will also ensure that the markers don't overlap and so that the user can see the number of clubs in that region.
Target audience	The product will target my audience, consisting of the local and national community as the map can be accessed by anyone and does not have a language constraint. This means that regardless of the region in Switzerland where the user is based, they can utilise the product.
Collaboration	Accessible to anyone online, the product will improve collaboration because it allows

	interested users to easily view football clubs in their region and according to their interests. Through my product, teams and coaches can organise matches and tournaments with clubs in the area.
Time	In the course of two months, I should be able to produce my intended product and respect my design specifications.
Resources	My product will be made using simple resources that are free to use on the internet. It will be coded on StackBlitz, an online coding platform, and using the Leaflet Javascript library. These resources are all available to the general public without subscriptions.
Complexity	Due to the time constraint, I will ensure that my product is not too complex for me to make or for the user to access. I will do this by following my Gantt Chart and prioritising tasks.

Strand IV - Develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution

Product Creation Outline

I made detailed annotations of each step of my creation process, with the needed resources described underneath. I have the names of each of the plugins, which I need to integrate into my code and the visual representation of what the map should like. This ensures that I follow my plan and don't unnecessarily forget any steps.



Outline Requirements for Creation

Resource	Function
Macbook with internet access	I will write the code on online software so I need a working computer with internet access. It should also be able to download and upload required libraries, icons and plugins.
Stackblitz - https://stackblitz.com/	Online integrated development environment (IDE) software that helps develop programs easily. Live editing and viewing functions, as well as troubleshooting capabilities
Leaflet Library - https://leafletjs.com/index.html	Leaflet, is an open-source JavaScript library to create mobile-friendly interactive maps. Easy to install and integrate into JavaScript.
Github - https://github.com/	GitHub is a code hosting platform for version control and collaboration. It has free-to-use code examples and plugins for Leaflet maps.
OpenStreetMap - https://www.openstreetmap.org/#map=8/46.825/8.224	OpenStreetMap is a free, open geographic database that has maps of the whole world in different designs. I will choose a base map that is minimalistic and simple.
Swiss Football Association Website - https://www.football.ch/sfv.aspx	This is the official website of the Swiss Football Association. It has sub-websites for each canton, which then has the names of clubs and their websites. There are 13 cantons to go through and list down all their clubs, with coordinates and websites. It also has the groups of clubs in each league in the current season, which I will need will making the legend.
Google Maps - https://www.google.com/maps	Although some of the clubs have their address listed in the profile, most of them do not or have not been updated. I need to verify the correct address and then take the coordinates of the main pitch from Google Maps.

CRITERIA C: Creating the solution

Strand I - Construct a logical plan, which describes the efficient use of time and resources, sufficient for peers to be able to follow to create the solution

Step-by-Step Plan

In order to create a successful product, I have to create a detailed plan that provides me with task descriptions and the needed resources. Before starting to code, I need to learn how to write HTML and Javascript. Although I am very familiar with Python programming and can use similar skills, HTML has several different coding methods. I will watch online courses and tutorials as well as ask the Computer Science teacher at our school.

Task	To-do	Resources	Desired outcome
Watch tutorials on HTML, Javascript and Leaflet programming	<ul style="list-style-type: none"> - Online programming courses - Go through required leaflet plugins - Watch basic leaflet programming tutorials 	Java script + HTML course - https://www.w3schools.com/js/js_intro.asp	<ul style="list-style-type: none"> - In-depth view on HTML programming - Know how to write variables, strings, call functions
Start a document on Stackblitz	<ul style="list-style-type: none"> - Make Stackblitz account and open new document - Organise needed folders - Download dependencies 	https://stackblitz.com/	<ul style="list-style-type: none"> - Blank document should have folders to write HTML, Javascript, and CSS - leaflet marker, marker cluster, geocoder and search bar dependencies
Add the open-layer map	<ul style="list-style-type: none"> - Find the right map for design - Should show the basic features (roads, pitches, etc.) - Should not be too distracting (shops, restaurants) 	<p>Tile layer - https://tile.openstreetmap.org/{z}/{x}/{y}.png</p> <p>Centered to Switzerland - 46.870579, 8.255474, (zoom - 8.4)</p>	<ul style="list-style-type: none"> - Should have base layer of map zoomed into Switzerland - Easy navigation to zoom in and out
Add basic features	<ul style="list-style-type: none"> - Add appealing header using HTML and CSS folders - Add png logo of Swiss Football Association 	Download png and then upload to own Github repository	<ul style="list-style-type: none"> - Clear header "Swiss Football Clubs 2023" - Stand outs with the logo
Add all markers	<ul style="list-style-type: none"> - From SFV website, find list of clubs from each canton - Add the coordinates and website of each club to code 	Go through cantons on https://www.football.ch/sfv.aspx	<ul style="list-style-type: none"> - Have all clubs in Switzerland represented through markers on their corresponding pitch locations - Marker should include pop-up with website of club
Cluster markers	<ul style="list-style-type: none"> - Add cluster function to code - So that markers don't overlap each other 	Github plugin + instructions https://github.com/Leaflet/Leaflet.markercluster	<ul style="list-style-type: none"> - Clustering should be functional - Number of cluster shows in specific area before zooming in
Add the legend for the leagues	<ul style="list-style-type: none"> - Legend in corner of the club showing different coloured markers from league 	Github plugin + instructions https://github.com/ptma/Leaflet.Legend	- Clear legend showing leagues in Switzerland
Colour code all the markers	<ul style="list-style-type: none"> - Red: Super league - Purple: Challenge league - Orange: Promotion league - Blue: Liga clubs 	<p>For list of clubs in each league: https://en.wikipedia.org/wiki/2022%E2%80%9323_Swiss_Super_League</p>	- All markers should be colour coded depending on the league of the current season

Add a search bar	- Collapsed search icon where user can enter region they wish to view	Github plugin + instructions https://github.com/perliedman/leaflet-control-geocoder/issues/231	- Search bar in corner of club that zooms in to desired region
Troubleshoot and debug code	- Use debug on Stackblitz	Stackblitz	- Functional product that fills specifications
Test functionality	- Test website on different browsers + different devices	Safari, Microsoft Edge, Chrome Test on PC, Laptop, iPad, Phone	- Product should work effectively on all browsers and devices

Action Plan

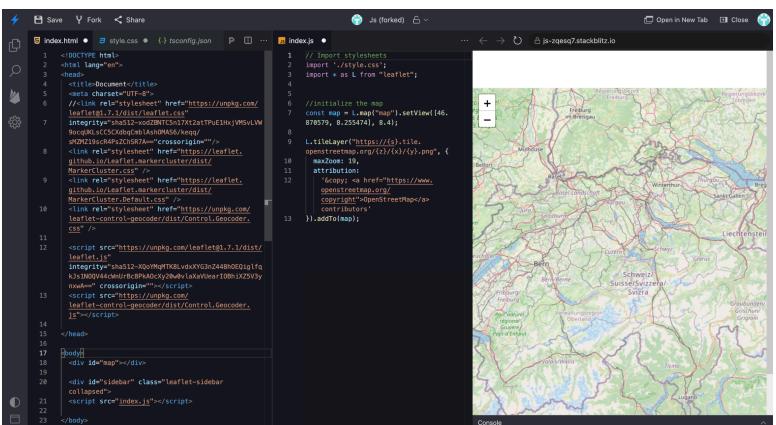
Task	Week 1		Week 2		Week 3		Week 4		Week 5	
	9th January		16th January		24th January		30th January		13th February	
	Lesson 1	Lesson 2	Lesson 1	Lesson 2	Lesson 1	Lesson 2	Lesson 1	Lesson 2	Lesson 1	Lesson 2
Find a open layer map of Switzerland										
Start the HTML code on Stackblitz										
Add in the map with attribution										
Add a clear header to the map										
Add the logo										
Code the clubs in Vaud with coordinates and websites										
Do the same for all cantons in Switzerland										
Cluster the marker depending on the region										
Add a legend to the map										
Change the colour of the marker according to league										
Add a search bar										
Troubleshoot the code in case of errors										
Test the functionality of the map on different devices										

Strand II - demonstrate excellent technical skills when making the solution

Creating the product

Using the plan, I carefully followed the tasks to make my map using a wide range of technical programming skills that I had to learn and master during the project. These are shown and explained below.

Firstly, to prepare my page, I had to add the **Leaflet Javascript and CSS libraries to the HTML file**. This allows me to add the map and all other future attributes. I added these libraries using <link rel> and then included the link to the leaflet library. This ensured a link between my document and the external resources. Next, in the JS file, I added the OpenTileLayer and set the coordinates to zoom into Switzerland. I added the attribution to the website as it is an open-source website.



The screenshot shows the Stackblitz development environment. On the left, the `index.html` file contains the basic HTML structure for a Leaflet map. It includes links to the Leaflet CSS and JS files, and a script to initialize the map with an OpenStreetMap tile layer centered on Switzerland. On the right, the `index.js` file shows the corresponding JavaScript code, which imports Leaflet and initializes a map object at coordinates 46.870579, 8.255474. The map is displayed on the right side of the screen, showing a detailed map of Switzerland with red markers indicating specific locations.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Switzerland Map</title>
  <link rel="stylesheet" href="https://unpkg.com/leaflet/dist/leaflet.css" integrity="sha384-zsdM1zDfZBxqKwzHdPjPQJLmIzWnqF0XoYyGvWzHdPjPQJLmIzWnqF0XoYyGv" crossorigin="anonymous" />
  <script src="https://unpkg.com/leaflet/dist/leaflet.js" integrity="sha384-120tmszGULQsXnNzVtG0Og4Zl9W0BtRk9XzXnqF0XoYyGvWzHdPjPQJLmIzWnqF0XoYyGv" crossorigin="anonymous" />
<body>
  <div id="map" style="height: 100%; width: 100%; position: relative; background-color: #fff; margin: auto; border: 1px solid black; border-radius: 10px; padding: 10px; font-family: sans-serif; font-size: 10px; font-weight: bold; color: #000; text-align: center; margin-top: 20px;></div>
<script src="index.js"></script>
</body>
</html>

```

```

1 // Import stylesheets
2 import './style.css';
3 import * as L from 'leaflet';
4
5 // Initialize the map
6 const map = L.map('map').setView([46.870579, 8.255474], 14);
7 const url = 'https://api.mapbox.com/styles/v1/stevemarshall/ck0000000000000000000000/tiles/256/{z}/{x}/{y}.png';
8 L.tileLayer(url).addTo(map);
9
10 map.attributionControl.setHTML('<a href="https://www.openstreetmap.org/">OpenStreetMap</a>');
11 map.attributionControl.setCopyright(' OpenStreetMap');
12
13 map.addControl(new L.Control.Geocoder());
14
15 <script src="https://unpkg.com/leaflet@1.7.1/dist/leaflet.js" integrity="sha384-120tmszGULQsXnNzVtG0Og4Zl9W0BtRk9XzXnqF0XoYyGvWzHdPjPQJLmIzWnqF0XoYyGv" crossorigin="anonymous" />
16
17 <script src="https://unpkg.com/leaflet-control-geocoder/dist/Control.Geocoder.js"></script>
18
19 <div id="sidebar" class="leaflet-sidebar collapsed"></div>
20
21 <script src="index.js"></script>
22
23

```

Next, I added the header and customized it to stand out to the Swiss audience. At this stage, I used **design skills** to test different fonts and sizes to then select the most suitable one for the map. As the logo, I added a small icon of the Swiss Football Association. I customized the header by using **CSS functions such as position, padding, background and float**. CSS allows me to style the document with ease so that it looks more professional and appealing than the default. It makes the map more cleaner and manageable as well.

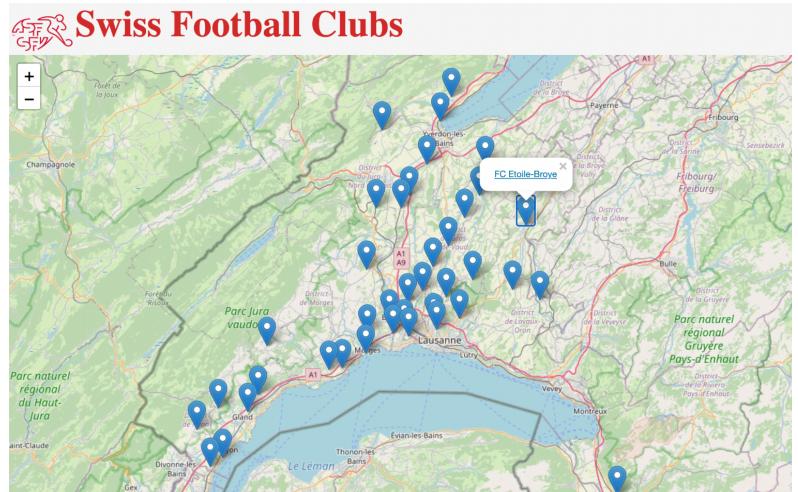


```

style.css •
1 h1, h2 {
2   font-family: Lato;
3 }
4
5 body {
6   margin: 0;
7   padding: 0;
8   padding-top:70px;
9 }
10
11 #map {
12   width: 100%;
13   height: 720px;
14 }
15
16 nav {
17   position: absolute;
18   height: 70px;
19   margin-bottom: 1em;
20   top: 0;
21   right: 0;
22   left: 0;
23   background: #F5F5F5;
24   color: #022B2B;
25   font-size: 50px;
26 }
27
28 .logo {
29   width: 90px;
30   height: 80px;
31   float: left;
32 }

```

Then, as suggested by Leaflet, I created a variable for each marker and added the clubs' coordinates to place it on the corresponding pitch on the map. I used the **“bindPop-up” function** to allow the name of the club to appear when a user clicks on the map. **Using ‘href’ I also added the HTML link of the club’s website** so that the user is redirected to it. I did this canton by canton so that it stays organised and I don't miss any clubs.



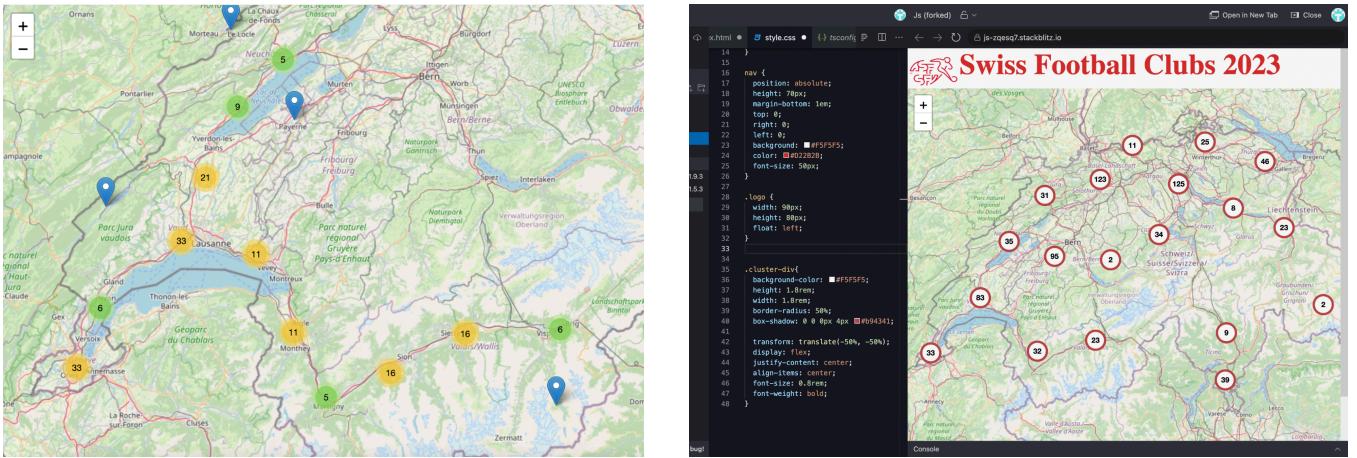
After having added more than 700 clubs, I noticed it looked very messy as all the markers were overlapping each other. Therefore, I used the **‘leaflet.markercluster’ plugin** to allow the markers in a specific region to group together. I initially came across several problems making the cluster appear because I was trying to do all the markers in one go. Eventually, I solved the issue **by importing the function in the dependencies**, introducing the function and then adding the cluster layer for each marker.

```

1.5.3 1115 var marker363 = L.marker([47.403555110001, 8.344115920134175]),  
1116 marker363.bindPopup("<a href='https://www.svruemlang.ch'>SV Rümlang</a>", { noHide: true });
1117 var marker366 = L.marker([47.390356837670176, 8.772467765515001]);
1118 marker366.bindPopup("<a href='https://www.fcrussikon.ch'>FC Russikon</a>", { noHide: true });
1119 myClusterLayer.addLayer(marker1);
1120 myClusterLayer.addLayer(marker2);
1121 myClusterLayer.addLayer(markers);
1122 myClusterLayer.addLayer(markers4);
1123 myClusterLayer.addLayer(markers5);
1124 myClusterLayer.addLayer(marker6);
1125 myClusterLayer.addLayer(marker7);
1126 myClusterLayer.addLayer(marker8);
1127 myClusterLayer.addLayer(marker9);
1128 myClusterLayer.addLayer(marker10);
1129 myClusterLayer.addLayer(marker11);
1130 myClusterLayer.addLayer(marker12);
1131 myClusterLayer.addLayer(marker13);
1132 myClusterLayer.addLayer(marker14);
1133 myClusterLayer.addLayer(marker15);
1134 myClusterLayer.addLayer(marker16);
1135 myClusterLayer.addLayer(marker17);
1136 myClusterLayer.addLayer(marker18);
1137 myClusterLayer.addLayer(marker19);
1138 myClusterLayer.addLayer(marker20);
1139 myClusterLayer.addLayer(marker21);

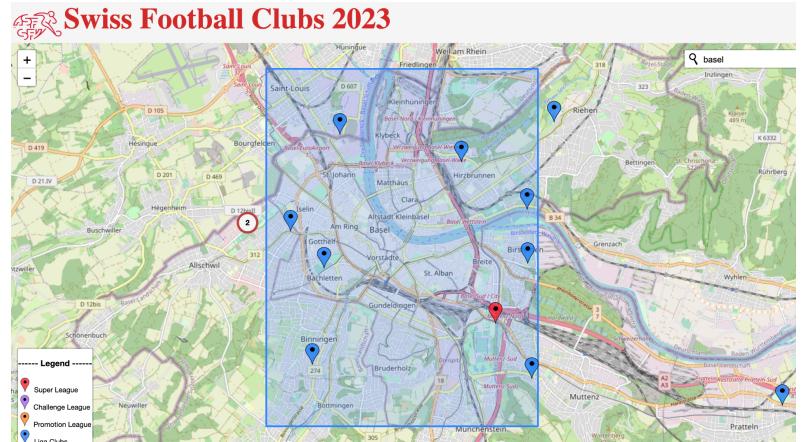
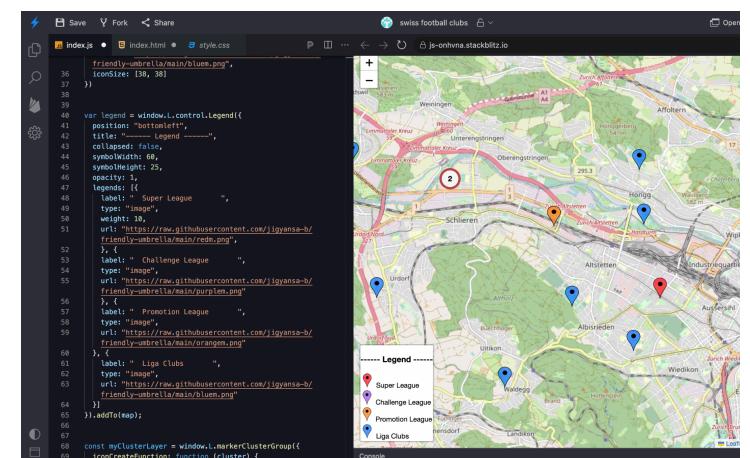
```

By doing this, the default clusters appeared on the map and grouped the markers. This already made the map much more user-friendly and less time-consuming. However, the green and yellow circles blended in too much into the background layer and it was hard to see the number when zoomed out. To solve this problem, I **customized the cluster icon** in the **CSS section** of the code and decided to use **colour theory** to design them with a prominent red border that complements the header and further highlights and attracts the Swiss community.



As I mentioned in my design specifications, I had a considerable time constraint on making the map. Therefore, I did not want to over-complicate its functionality. This being said, I wanted to increase the **user experience** and **add a legend to my map**. I tested placing the legend in different areas of the map but eventually decided that the bottom left is most effective, as it is under the zoom buttons and the user can view it easily. The legend includes the four main tiers of the Swiss Football League. I used the '[@gnatih/leaflet.legend](#)' plugin to create the box and added the names of the leagues. I used **created my own custom markers** using Canva and uploaded them to my own Github account so that I could implement them in the code. I then manually added the custom icons to each marker depending on the league they were playing in the 2022-2023 season.

Lastly, I added the search function using the '[leaflet-search](#)' plugin from Github to the map so that users can search a region of the map. This function **allows the map to zoom in on the specific location** entered in the search engine. This increases user experience as they can simply look in their region. It is also helpful for new residents of Switzerland that do not know the area well. The search box works in the following way; users type



in the region in Switzerland they are looking for, and the map then **places a translucent blue polygon around this region**. It disappears when the map is refreshed.

Having reached the last steps of my action plan and added all my required functions to the map, I had to **troubleshoot the code** to ensure there were no eventual problems. I used my **debugging skills** by running the code through the Stackblitz debug and solving any issues that arose.

Strand III- Follow the plan to create the solution, which functions as intended

My final product is an interactive map made through JavaScript that communicates more than 700 football clubs in Switzerland, organised into the leagues and with their respective websites. The map is accessible online through a link and is free to use.

This is the link to my final product:

<https://js-onhvna.stackblitz.io/>



This is the link for the code:

<https://stackblitz.com/edit/js-onhvna?file=index.js>

Strand IV - Fully justify changes made to the chosen design and plan when making the solution

Justification of changes

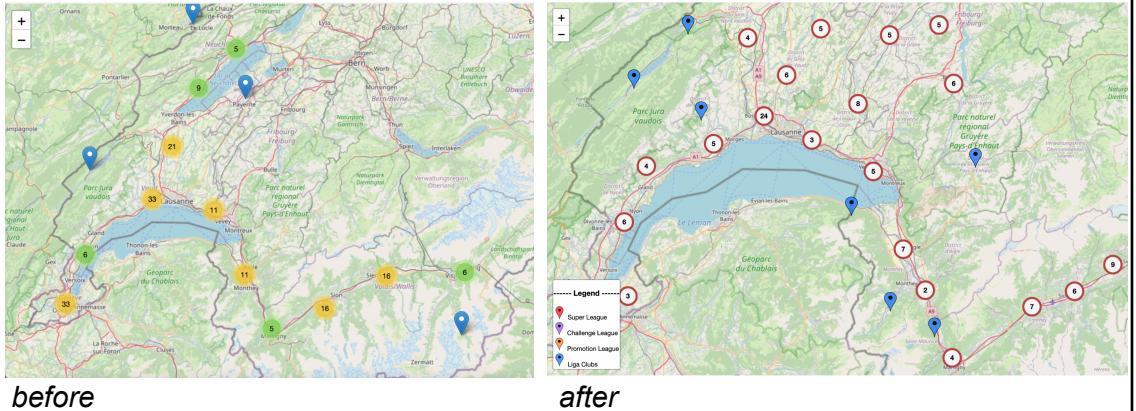
During the manufacturing process, I did not make any extensive changes from my initial design simply because it would be too complicated to code properly. This being said, a number of minor

changes were made to the chosen design and plans. The table below provides details of the changes made and the rationale behind these amendments.

Amendments	Rationale
Title	<p>I changed my title by adding the year 2023 because as I added a legend to show the clubs of the different leagues, I would need to specify which season it was. The football clubs move up and down the leagues at the end of the season depending on their placement on the table. So the year would make clear what teams were playing in the current season.</p> 
Header font	<p>In my drawings, I made the font in capitals and very thin. During programming, after consulting with my client and peers, I decided the title was not very clear and didn't stand out to the audience. Therefore, I used a more popular and recognizable font and changed the colour to a bright red to symbolize the Swiss community and appeal to users.</p>
Placement of legend	<p>My legend was initially placed on the right in my design. However, I noticed that the attribution was placed on the left, something I could not change. So I decided to change the placement to 'bottom-right' in my code.</p> 
Legend icons	<p>I changed my legend icons from circles to the actual markers represented in the map. I did this firstly because the circles would not format correctly in the program, they did not leave enough space between the text. I also thought it would be easier for my users to recognize the clubs if the icons were identical. I created the markers on Canva and made the colours distinctive enough for the user.</p>

Cluster customization

My designs show the default colours used in the cluster functions. As I mentioned before, I changed this because it blended into the background too much. They were also of different colours throughout the map and did not look coherent. I changed these clusters to white with a red border. This looked consistent and clear with the rest of the map.

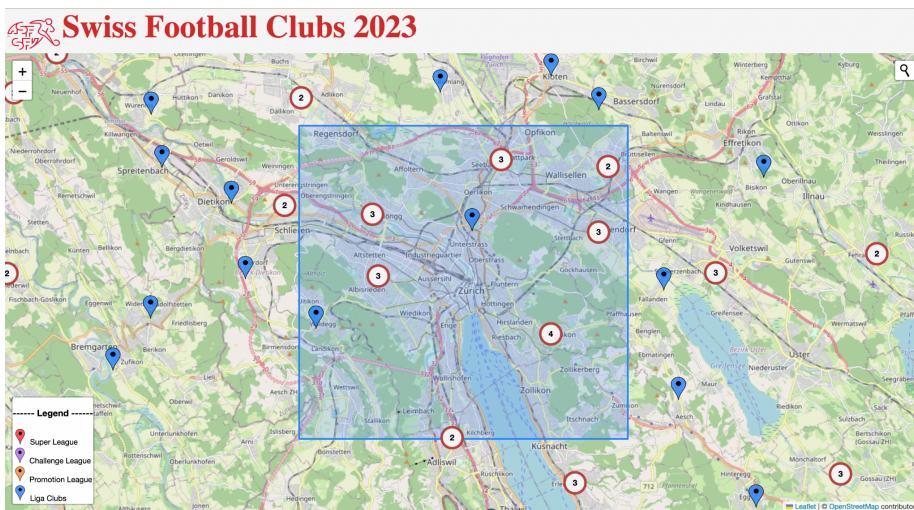


Presentation of product functions

1.



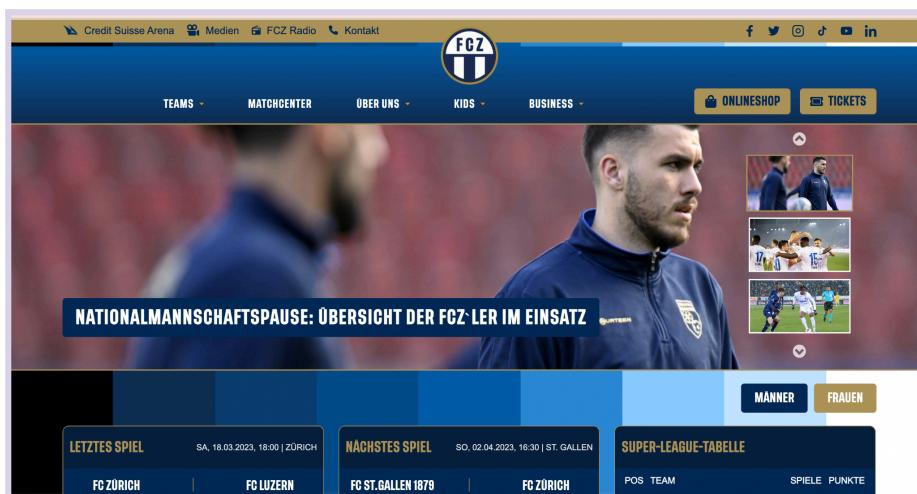
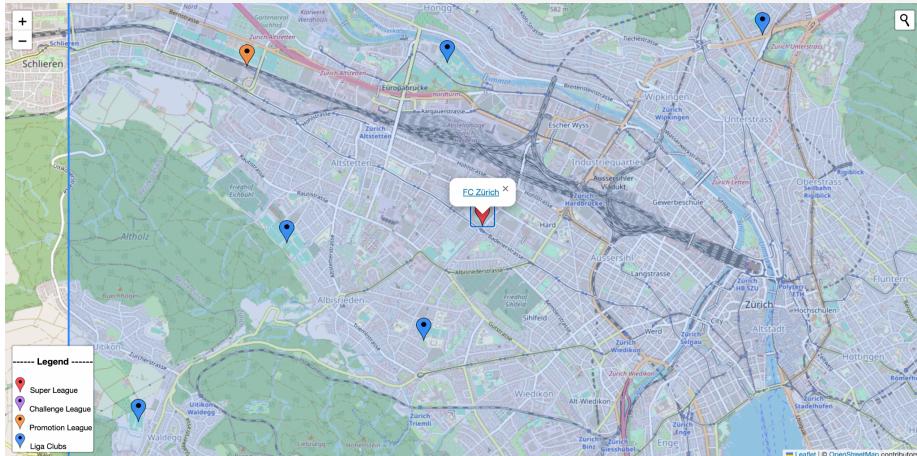
2.





Swiss Football Clubs 2023

3.



(FC Zürich website - <https://www.fcz.ch/>)

CRITERIA D: Evaluating

Strand I - Design detailed and relevant testing methods, which generate data, to measure the success of the solution

In designing detailed and relevant testing methods for the product, it was important to ensure that the product goal and solution were consistently referenced. The original solution as stated above was to;

The solution of my design is “*to create a product that allows the local and national community to collaborate more effectively through sport, in today’s highly connected world.*”

In achieving this solution, the product goal was to;

"Create a functional and interactive map that conveys many of Switzerland's football clubs, allowing users to access their respective websites".

With this in mind, a series of tests were designed to generate data to measure the success of the solution. The tests and their methodology along with the rationale are detailed below;

Test	Rationale	Methodology
Visual aesthetics of the map	To ensure the map looks engaging and entices the user to interact	Send the link to client and record their facial expressions as well as the verbal feedback
Functionality of the map	To ensure that the map functions as intended, without any bugs,	Have the client use and navigate the map, document how they find a club, open the website, etc.
Accessibility of the map	To test how easily the user can open and use the map	Have the client search for different clubs and use the website on various devices
User-experience	To test if the map provides a good experience for the user to use and navigate	Document how well the coloured icons and clusters help the user navigate through the map
Interview client	To review if the product has increased their collaboration in today's highly connected world	Conduct a structured interview to determine the client's opinion on how well the product helped them find a club, and collaborate with players

Having designed the methodology above, the client was invited to test the product using the design specification criteria as a guide to elicit feedback. Positive and negative feedback was sought to ensure critical evaluation.

The testing was completed over 2 sessions and sought the client's feedback on ways to improve the final product;

- the first session covered the initial 5 testing methods listed above that focused on the functionality, appeal and experience aspects of the map,
- the second session focused on the last testing method, the interview, to understand whether the map had successfully helped the user look through football clubs in Switzerland and help them communicate and collaborate with the club and players.

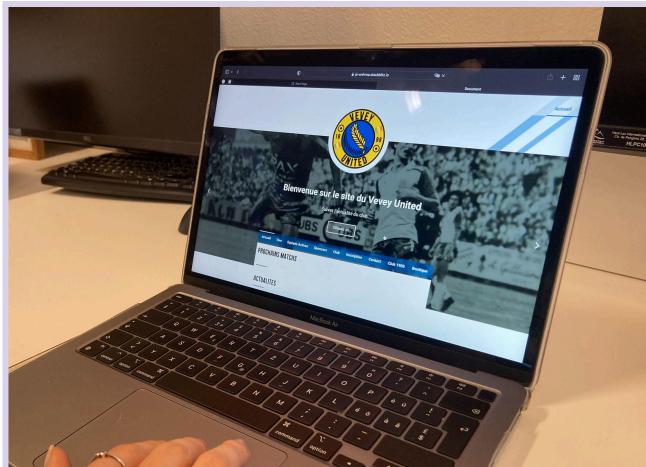
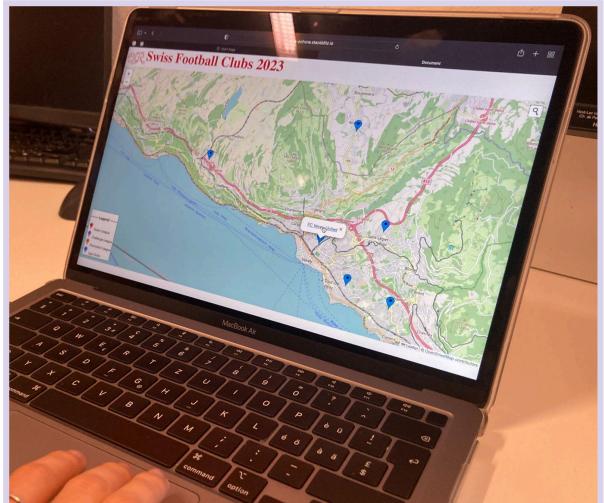
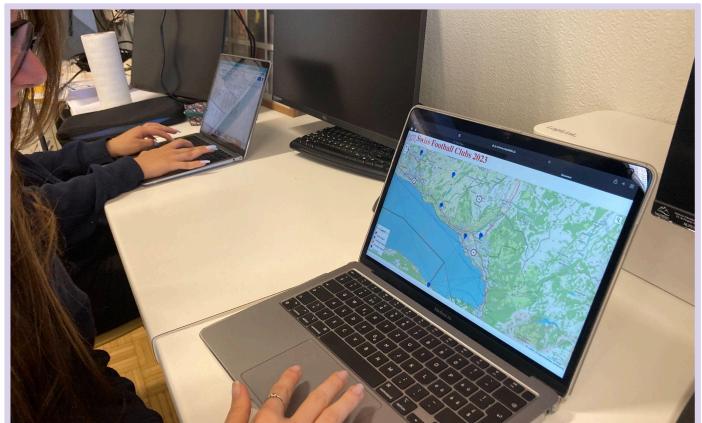
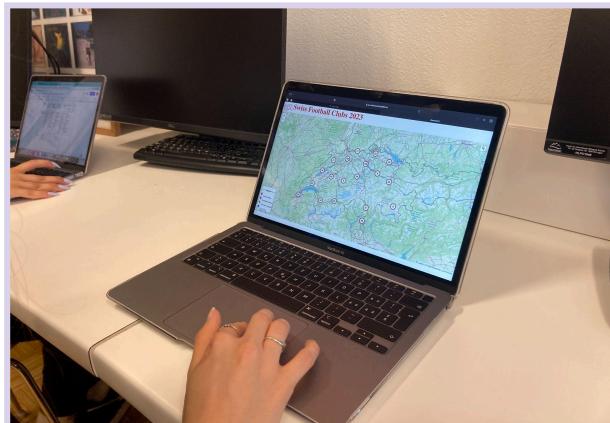
Function - questions	Client feedback	Improvements
Does the map open properly?	The map is functional, it opens in only a few seconds and the user is able to see everything laid out clearly (heading, numbers, etc.)	The map has to be opened on a full screen or else the legend is sometimes cut off. The map should take the shape of any window opening it.

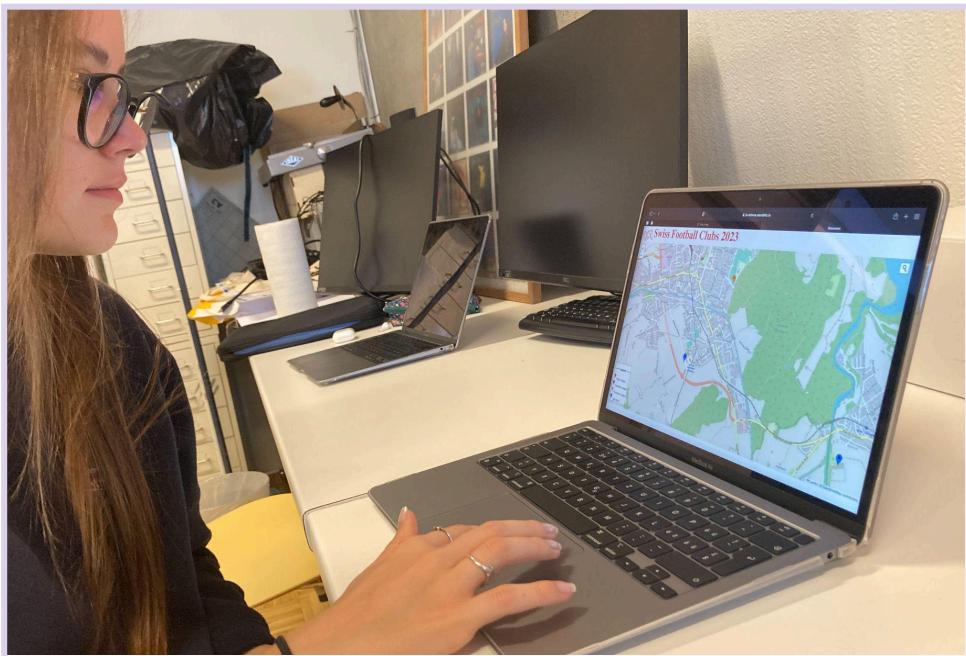
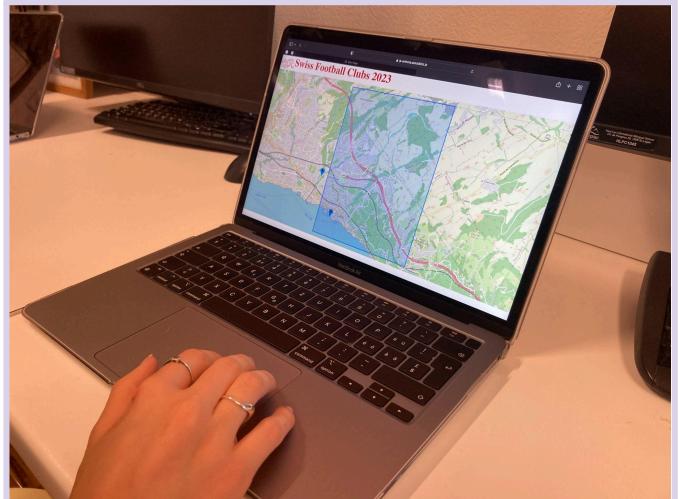
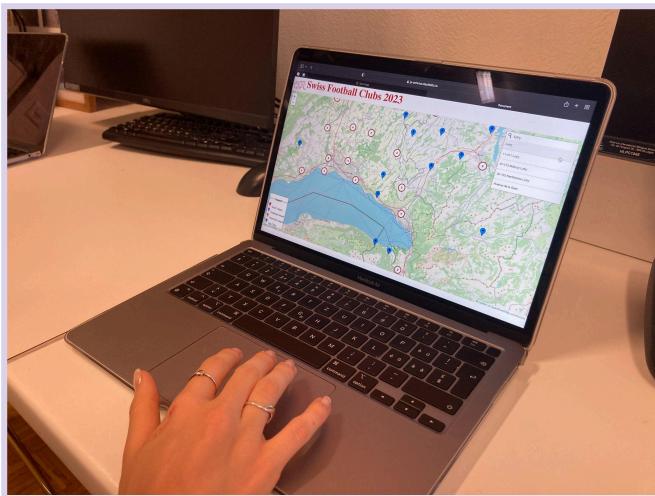
Can you zoom in and out effectively?	Yes, I can zoom in and out properly	No improvements
Do the clusters work properly?	Yes, the clusters show the number of markers in that region and then when I click on it, it zooms in.	There are no improvements, the clusters are visually appealing and work effectively.
Does the search bar work accurately?	Yes, I am able to search locations and the map zooms in and places a polygon over the area	The only way to remove the polygon is to refresh the page, which is time-consuming and unnecessary. The user should be allowed to delete the polygon themselves.
Are you redirected to the clubs' specific website?	Yes, when I click on the name of the club, it takes me directly to the club's website within a few seconds.	The website opens up on the same tab as the map, which means that the user has to go back to the map and lose the link to the website. The club website should therefore open on a separate tab so that users can have several links saved.

Aesthetics - questions	Client feedback	Improvements
Are the colours enticing and stand out to you?	Yes, the map is visually appealing. The red stands out and attracts the attention of the user.	No improvements
Do the logo and the header correctly illustrate the map?	Yes, the logo and header clearly tell me what the map is demonstrating.	I think a menu would be interesting to add to the map, telling the user how it is made and further information.
Do the clusters fit in well with the rest of the map?	Yes, the red-coloured clusters bind in well with the colours of the rest of the map and stand out enough to see.	No improvements
Are the league icons easy to recognise?	The colours of the leagues make it easy to differentiate. Having the legend makes the navigation better.	They look slightly 2D and transparent so adding a sort of shadow could improve this
Is the overall layout of the map appealing to look at?	Yes, the header and icons together stand out and look attractive to the user. The legend and search button is well placed and accessible.	No improvements

Client / user engagement	Client Feedback - Interview	Improvements
Is the map appealing and interactive to you?	<p>Positives - Yes, the map is very appealing and immediately attracts my attention. The colours go well together with the football and Switzerland theme. Its simplistic design is good because it allows the user to interact more.</p> <p>Negatives - I have to search significantly through the map to find clubs in the Super League, as there are only around 10.</p>	Allow the user to filter out a certain league, so that only icons in the Super League, for example, show up. This would make the experience better and more time-efficient for the user.
Did it facilitate your search for a football club and help you collaborate?	<p>Positives - The map made it extremely easy for me to find a club. The search box, legend and clusters significantly facilitated my search for a wide variety of clubs across the country. Through the websites provided, I was able to contact the club successfully.</p> <p>Negatives - I can only search for areas through the search box. It limits by option when I already know the name of the club, but not the location. I would also like to remove the polygon placed on the area without refreshing the map.</p>	Allow the user to search for clubs in the search box and the capability to manually remove the polygon when they are done.

Client testing my product



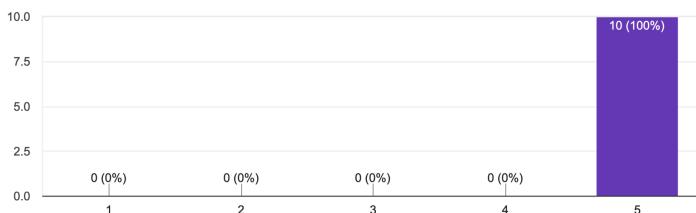


Survey

To further understand if my product was successful at meeting the design specifications and the user expectations, I created a survey through Google Forms. I sent this 10 people, including peers in my grade, teammates at my football club, teachers and coaches with the aim of receiving adequate feedback.

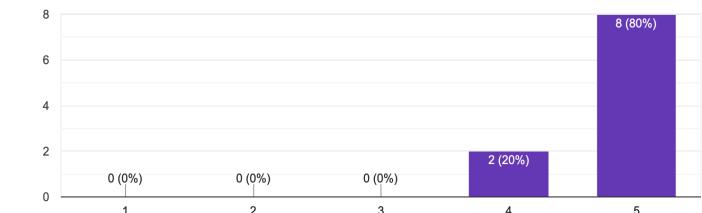
Can you open the map properly with the link provided and view all the clusters/icons?

10 responses



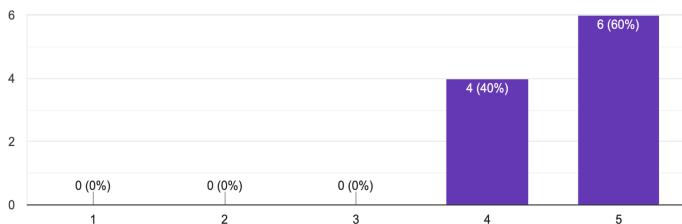
UX: Is the map interactive and easy to navigate?

10 responses



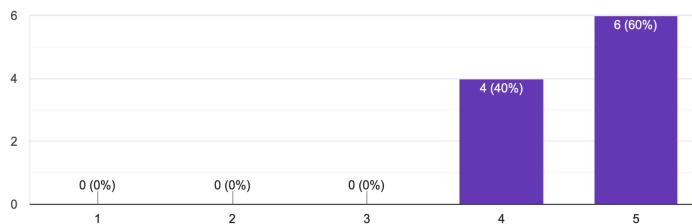
UI: Is the map visually appealing to look at?

10 responses



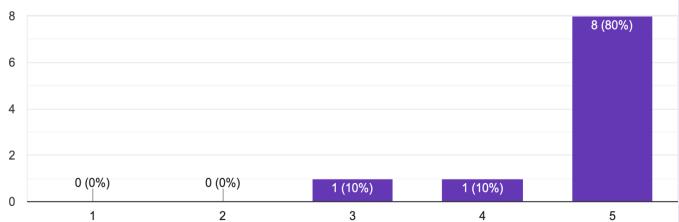
Are the functions organised and laid out in a clear manner? (heading, legend, search bar)

10 responses



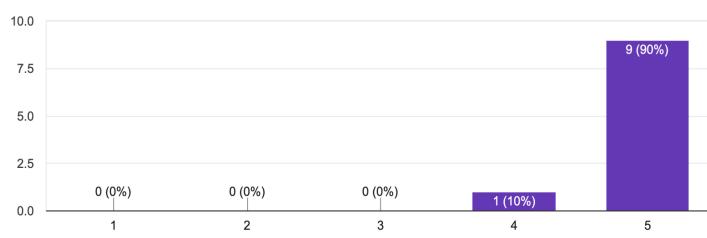
Do you think the map could be effectively used by a large audience?

10 responses



If you were looking for a football club, would it facilitate your search and help you collaborate?

10 responses



Any improvements

7 responses

No

Use Heat map to show where they're more clubs

no

not really

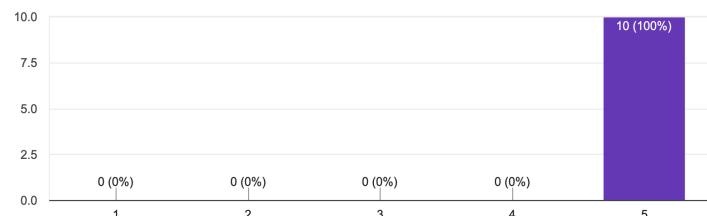
Remove the big white space at the bottom so it takes up the whole screen

Make a function to filter out one league.

Make the legend slightly bigger.

Lastly, rate the map out of 5.

10 responses



Strand II - Critically evaluate the success of the solution against the design specification

Specifications and explanations	Rating (0-8)	Justification
Functionality: As per my research in the previous criteria about issues regarding finding a club in Switzerland, my product should provide a solution by allowing users to see all Swiss clubs by their location and accessing their website.	8/8	This strand was fully achieved as the map was tested by several students and teachers who all said they were able to successfully look and find a football club. The zoom and search functions work effectively and the map base layer has the basic items to recognise the area.
Aesthetics: The product must be appealing to students and adults. It should symbolize football in Switzerland and stand out to the user.	8/8	All my respondents rated the aesthetics of the map 4 or 5/5. They said that the overall red theme of the map associated it with Switzerland, as well as the logo of the Swiss Football Association. The colours stood out

		from the green and yellow colours without being a distraction.
Cost & Accessibility: As the product is an interactive website, it should be accessible to anyone through the internet. Therefore, there will not be a cost constraint on this.	7/8	By using Stackblitz, I was able to code my product and launch it as a link. However, as I used the free version of Stackblitz, I was not able to host the map as a website so only people with the link can access the map. This can be a disadvantage as users can't search for the map.
User-experience: According to my previous research, a product with good user experience should have accessible, findable and usable functions. It should also have a balance between minimalist and maximalist design to help the user achieve their goal.	7/8	My product has a good user experience because it provides the user with a search bar and a legend to make their process easier and less time-consuming, according to 80% of the surveyees. The cluster functions allow for icons to be grouped together so that they don't overlap each other and slow down the program. The experience could be improved by adding additional information with the website, such as no. of teams, etc.
Target audience: The map should target the local and national audience of Switzerland who are interested in football, including students, parents and coaches. It should not have a language constraint to be suitable for different areas of the country as well as new residents.	8/8	This specification was achieved as the website is accessible to all age groups through the link. All of the information on the map is majorly visual so that anyone can use it, regardless of the language they speak.
Collaboration: The map should provide opportunities for players and coaches to find clubs according to their requirements. It should include clubs that play competitively as well as recreationally.	8/8	90% of users agreed allows the user to find a wide variety of clubs in their area, including large national-level clubs and small regional clubs. In this way, players are able to find the website and contact their desired club.
Time: The product should be feasible to make in the time constraint given, with extra time to troubleshoot and evaluate it.	8/8	By following my action plan, I was able to efficiently add all the clubs to my map as well as my intended functions. I faced several complications and bugs while coding but was able to fix this in time.
Resources: The map should be made using free-to-use resources such as Leaflet and Javascript on a Macbook. It should also provide the correct attribution to any open-source resources I used.	8/8	I created the map using Stackblitz, which provided me with very versatile and productive capabilities to build, edit, test and troubleshoot my program. I could access this on any device and share it through a link. As I used OpenStreetMap to get my base map layer, I added their attribution in the bottom right corner. I also watched videos and tutorials on Leaflet and Javascript from coders on YouTube to make a successful product.
Complexity: My product should be made based on specific priorities due to the	8/8	I was able to add all my desired functions that improved user experience and allowed the user

difficulty of coding and the time constraint. I should follow the action plan and keep track of the progress.		to collaborate in today's digital world. The most difficult part was adding the legend and colour-coding the icons accordingly.
---	--	---

In conclusion, after having evaluated the success of my product against initial design specifications, I can conclude that the main strengths of my product include its functionality due to the simplicity of the map and how easy it is to use the different functions. The map loads in a few seconds and the user can use the zoom functions effectively. The redirection to the club websites significantly aids in the functionality of the map. The aesthetic element of my map is the second strength. The red colour theme allows the map to appear vibrant as it contrasts against the green and yellow hues of the map. This displays the information clearly for the user. Lastly, my map successfully fills in the collaboration criteria I set, directed for the target audience. Through the efficient user interface, the user can find clubs and ways to contact them easily. The evaluation also showed that my map was successfully designed based on specific priorities and that the complexity of the project was managed efficiently. Overall, the evaluation demonstrates that the product was designed and developed with the end-users in mind, and it meets the requirements and goals set out in the design specifications.

Strand III - Explain how the solution could be improved

Strengths	Weaknesses	Improvements
As agreed by my client and surveys, the aesthetic appeal of my map was very effective. The base map layer was not distracting to the eye and only showed the primary areas such as city names, transportation etc. Additionally, the red theme helped bind the whole map together while associating it with Switzerland.	The logo of my club could be changed to make it more related to football.	I could make my own logo by merging the SFA logo with a football in Photoshop. This would make the map more creative and appealing to the user.
The legend of the map significantly improved my user experience as it allowed users to immediately see the clubs' league. According to user tests that I conducted, this was very time-saving and efficient to use.	The majority of the clubs are Liga clubs, colour-coded blue. Therefore, the user has to zoom in on specific areas to see other leagues.	I could improve this by allowing the user to filter out a specific league. For example, if they click on the purple icon in the legend, only Challenge League clubs should appear.
By adding a working search box to my map, I increased the functionality and user experience of my map. The search box reveals a pick-up list of places that the user enters and then places a polygon on the desired area.	When the polygon is placed in the area, the only way to remove it is by refreshing the website. This can be time-consuming and unnecessary for the user.	To improve this, I could allow the user to manually delete the search box when they want to. I could also allow the user to search certain clubs in addition to places.

Strand IV - Explain the impact of the solution on the client/target audience

The aim of this project was to create a product that enhances collaboration through design in today's highly connected world. To achieve this aim it was important to identify and understand the target audience to achieve this aim. As a potential client for my product, a student and sports athlete from Ukraine named Masha was chosen. She was interested in joining a football club but was confused as to which were available in her area and for her ability. My product resolves this by allowing the football community in Switzerland to have a location where they can view all the football clubs in the country. Collaboration is a crucial aspect of football, happening between players, parents and coaches. The Swiss Football Association has lists of each club according to the league and canton but makes it difficult and time-consuming for players and coaches to access it.

Therefore, I decided to create an interactive map that communicates more than 700 Swiss football clubs according to their league and includes their respective websites. In this way, a user can see exactly what clubs are available in their location, in one go. They are able to find the next steps to contact the club through its website. Young players, parents, coaches and club managers interested in or working in football now have one place where they can view all the clubs in the country. The legend allows them to easily recognise the league the club is in. The clusters and search bar also both improve the functionality and the user experience of the map. Ultimately, this enhances collaboration in the football community as young players can join new clubs in their area, increasing football talent for the future. Through these sports clubs, communities stay more connected as well. As the map is a link and free to use, it can be accessed by practically anyone, on any device.

My solution enhances collaboration by increasing the visibility of Swiss football clubs, making it easier for people to discover clubs they may not have been aware of previously. It is also useful for coaches because more and more football matches need to be organised today as well as the transfer of players between clubs. In our digitally connected world, it can be hard for coaches to find teams to play friendly matches against or buy and sell players. My map would make it easier and more effective to contact other teams and clubs on a local, regional or national level. The accessibility of the clubs' websites in my map creates additional networking opportunities for clubs to connect and collaborate with one another. This could lead to joint events, shared resources, and other collaborations that benefit the football community as a whole. The interactive map could also be used to share resources, such as training facilities, coaching resources, and equipment. This sharing of resources could benefit clubs that may not have access to these resources on their own, and it could lead to collaborations that benefit the entire football community.

The feedback I received shows that the map helps people effectively find and contact clubs. Most of the respondents thought that the map could be implemented into the football community and be used successfully. Its functionality and navigation aspects are also very operational. Almost everyone agreed that the map would majorly enhance collaboration in today's world.

Based on my evaluation of my product against the design specifications, I have concluded that the map has fully achieved 7/9 of the success criteria I set. The marks were deducted due to possible improvements in the accessibility area, as the user can't search for the map on Google. My code is also currently an open program and is not hosted as a website. Secondly, the user experience could be ameliorated by adding the capability to filter out certain leagues. Nonetheless, the product is functional, and visually appealing and enhances collaboration on a national level.

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