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CONVERSA: A Community of Conversation

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Final Project

CONVERSA

A Community of Conversation.

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Individual Contribution

Member	Semester 1	Semester 2
Leandro Silveira	Problem area, Innovation and Problem Solution.	Focus on HTML and CSS and Research
Lucas Freire	Documentation, Revision, Edition, Conclusion and Reference List	Documentation Manager and Research
Patricia Correia	Schedule, Risk Analysis, Planning, meetings	Backend solution, PWA implementation,Project Manager and Research
Richard Welbert	Resource and Scope	Focus on frontend and backend development
Willian Antunes	Project goals and Objectives	Frontend development and Research+

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CHAPTER 1 – 2019.2

1. Introduction

In the past decade, Dublin has seen increasing development in many sectors, remarkably in the Education industry. The country has attracted many English learning seekers, students that come to Dublin to live, learn the language, and the local culture. However, exciting this adventure might seem, foreigners may still struggle to overcome a set of difficulties when learning another language in a different environment.

For this reason, this project will try to develop an app that can help students meet new people with the primary objective to learn and practice English with people nearby. Users will be able to find people surrounding them on the same or a different level in the language, ultimately meeting up with fellow learners to practice English. The app will also provide the user with a group of features, such as chat and even the possibility to share new meetups on social media, showing how engaged they are and how they have been improving.

This app will facilitate learning English around the city. Why talk online when you can make friends and practice English in real life?

Go. Meet. Talk. This is *Conversa:* the community tool to practice English.

2. Problem Area

2.1. Learning a new language

We have based the problem area on this massive wave of people learning or acquiring a foreign language all over the globe. A member of the British Council that is one of the largest

providers groups of English language instruction in the world states that there are about 1.5 billion English-language learners worldwide. This Council divides the English-languages learners into two groups, being about 750 million EFL learners (English as a foreign language) and 375 million ESL learners (English as a second language). The remainder would be acquiring the language using alternative tools.

Statistics evidence that one out of every four people on the planet speaks English, which means about 1.75 billion people in the world. The British Council estimates that this number shall grow to 2 billion English speakers until the end of 2020, which means that the more people will be studying and practicing the language.

Although English is the most studied language, there are other languages that students tend to choose. This article ranks the 7th top picked languages for students, which are English, French, Spanish, Italian, Chinese, Japanese, and German. However, the same article considers that the statistics fail to take into account the growing population that uses self-study and other alternative methods to learn a foreign language.

Having said that, we point to the actual problem, which is the lack of a pragmatic way of a language learner to find someone to practice their speaking skills. Those students have their own busy lives, and sometimes they lack exercising what they have learned since meeting up with people on the same or different levels that are close enough can be a tricky task.

2.2. Learning alone

Learning English alone may be another complication that learners might face. Finding a partner or a group to practice a language could be so complicated that people try to learn alone. Research points out that people can improve their speaking skills even while reading, writing, or listening if they read aloud what they read and write or if they repeat the words that they listen to. It is also said that learners can practice speaking by talking to themselves, as they were having a conversation with someone else. However, the same specialists do not contest the superior effectiveness of practicing a new language with another person, face-to-face

Based on that, we believe that practicing alone is not as efficient as with one or more people, so to speed up the learning process, different tools can be put into practice as talking to someone in real life. To help facilitate this, learners can use Conversa.

2.3. Practicing English

THE LANGUAGE DIET

Listening, reading, watching

Writing

Speaking

Figure 1 – The Language Diet. Source: Source: https://www.fluentsimple.com/speaking-practice-redefined-talk/

As we can see in this graph, speaking is the base of learning a language; in other words,it is the most significant chunk of it. St Giles, one very traditional international language training centres, explains that spoken practice cannot be overemphasized and that a learner should exercise their speaking at least one hour per day. Nevertheless, the problem we are trying to solve is how to find the right people to keep on practicing?

Practicing with a different levelled partner could bring frustration to both sides. Most of the language exchange websites that exist today arranges meetings between a learner and a native speaker, but that is not a levelled experience when the learner ends up having another lesson other than having a decent conversation and practicing what they know.

Therefore, it is highlighted that for a relevant set of learners, to practice the speaking with an upper-level partner can be a barrier that they are not ready to overcome, due to shyness or timidity. Nonetheless, we also want to reach this set of learners.

Finally, the scope of the problem is that there are thousands of people learning a foreign language through a language school or self-learning method. A considerable part of those people wants to practice their speaking skills to brush it up. However, they are not looking for another lesson while practicing. They are not interestedin having someone correcting every single sentence that they try to say, instead, they want to feel comfortable to speak out and keep on a conversation with another learnerwho also struggles like them, but that will improve by practicing. Those types of learners do not have a tool to help them to find these partners to practice, and our app intends to help them.

3. Innovation / Problem Solution:

As a solution to this problem, that a large number of worldwide language learners undergo, the Angry Nerds team proposes to design *Conversa*, which is a web application that will work as a bridge to connect language learners, which are generally within the same level and about the same location. *Conversa* targets those who are currently somehow learning a language but understand that more practice is needed. Practice, not lessons or classes! *Conversa i*s a community of language learners that are seeking to practice what they know between each other.

The massive number of people trying to learn a language is growing day after day. Due to this, the solution we came up with is to build our web application on a platform that supports multiple subscriptions. *Conversa* will also attend security standards to protect the data of members, personal information, and filter real applicants that have the genuine will to practice speaking a new language. The reliability and solidness of the web app are thus ensured, allowing then subscribes to benefit from the features made available.

The platform features will offer users the option to select the exchange language level to be able to connect to other same level users. For all those who do not know what level they are, there will be an optional online test to classify them. This feature should solve the problem of people feeling embarrassed when practicing with someone from a higher or much lower level. This feature also helps to fix the problem of having lessons instead of fair speaking practice.

How could language learners improve their speaking skills if they are practicing with the same level learners?

We can answer this question with an example. A user (A) has just joined the *Conversa* community; this person has been learning English in an English school for about a month and practicing every day. However, it is still ata basic level. A second user (B) has joined the *Conversa* community as well; this person has been self-learning English for about two months and practicing twice a day and is also at the beginner level. When these two users, A and B, get together for a conversation, they will have a fair beginner chat and will automatically learn new expressions and vocabulary due to the non-equal sublevel within the beginner level, which both are, without the need of a teacher or a native tutoring them. We believe that in this scenario, both users, A and B, will feel more confident and comfortable to use all that they know in this chat.

The platform will allow members to create their own *Conversa* meetings. They will be able to choose a location, set the language that will be spoken, and the level that the user who will join the *Conversa* meeting should be at.

After all, we aim to provide a more practical and pragmatic method of language exchange for learners to practice and improve their speaking skills, bringing to the market a platform that has a unique approach. We believe that speaking is the most essential fundament of learning, and we want to help people to find partners to practice. We also want these people to have the freedom to just have rounds of conversations instead of more and more lessons, without any pressure to be perfect, afraid of making a grammar mistake or so, learning naturally by chatting away with ordinary people.

Members will be able to download our app on their mobile phones or just have it on their laptops. The idea is to be able to connect at any time to join or create an event. The *Conversa* meeting closer to the member's location will appear first on the screen; however, other events can be tracked as well. We believe that this app will help learners to connect to other learners and have a goodchat.

4. Objectives and Project Goals

The project Conversa has the objective of helping people start or progress in the process of learning a new language.

The project Conversa will develop a web-app focused on helping English learners. Through the use of the app developed by the Angry Nerds group, learners will be able to create and participate in a variety of activities aiming at the learning and improvement of the language.

The objectives of the *Conversa* project are:

- The app should help with the problem of students that are new to the city and want to improve their language skills.
- There will research on similar apps available on the market and new approaches that are proved to be successful when it comes to speed up the process of learning a new language
- Users will have a tool that is focused on helping the improvement of the language through a core feature called "events".
- The events are meetings organized by the users themselves and available for other users to attend.
- The objective of the project is also to help the community by engaging users to create social events that will benefit the community/environment.
- The application should be delivered by 04/2020, which is the deadline for the project.

The goals of the *Conversa* project are:

- Develop and deliver a web-app aimed at the learning and improvement of the language.
- Promote social interactions amongst app users.
- Help the community.

5. Project Scope

5.1. The importance of the English language:

English is one of the most important languages that people should know. The English language is the most used on the web. It is the mother tongue of the internet and computer technology. It is also the official language in the U.S., UK, Canada, Ireland, Australia, South Africa, among others, making it the global language of business.

From our researches, we identified that there's a vast number of people studying English nowadays in our globe (around 1.5 billion people, according to the British Council). And this number only tends to grow, as knowing it can open many doors for professionals like working in a multinational company or attending international business meetings.

5.2. Learning English and its difficulties

Listening comprehension and speaking in English are more difficult and more important for learners to master than reading and writing. When reading and writing a text, a learner has more time for thinking and pauses than when listening and speaking to someone else. A learner can look up for unknown vocabulary in dictionaries or translators when reading or writing a text in English, which is impossible in a real-life conversation. Therefore, listening and speaking are more complicated than reading and writing.

Despite its popularity, English is not a simple language to master. There are many challenges that people face when learning not only English but also any other language that is not their native one, especially if oneis learning it outside its speaking country.

Seeking for the coexistence with the language daily, people tend to look for language exchanges in other countries, and Ireland is one of the most searched for in the world. According to MEI (Marketing English in Ireland), which is the representative association for 66 English language schools and colleges, the number of international English language students studying in Ireland in 2017 was 129,290, and this number continues to grow every year.

However, even though these people are living in an English-speaking country, they aren't always practicing the language. Most of the students tend to live with people from their same country and consequently, speaking in their mother-tongue most of their day and sometimes in order to practice, they could look for meet-ups with other students who are on the same level, but after our research, we found out that there's no such tool that provides this kind feature apart from "Meetup."

5.3. Meetup research

Meetup is an online service for finding and building local communities. It was founded in 2002, and it is now owned by "WeWork," an American commercial estate company. According to their website, "people use Meetup to meet new people, learn new things, find support, get out of their comfort zones, and pursue their passions together".

Meetup groups are run by users called "organizers". Organizers can set up groups, organize events, and develop event content. Meetup charges organizers to run groups up to $23.99 per month, and from October 2019, they will start charging $2 of members of select groups who want to RSVP to some events.

On Meetup, people can be a member of multiple groups. Each group has a different topic or category like "outdoors and adventure", "sports and fitness", "language and culture", "learning", etc. And for each topic, there are several events related to it where members can RSVP and meet people with the same interests to share a hobby, hang-out, learn something, explore or build a network. In other words, people can set up meetings to practice any language they're learning too. The problem with Meetup is that it is too broad. You can use it to meet people for anything. Our scope is to target students who want to practice the language they're learning with people on the same level.

5.4. How it will be done

Our platform will be called "Conversa". A community-based web application - that will also be available for mobiles –that will help students connect with other students who are generally on the same level to practice English relaxed, without any pressure, or worrying if they're making a mistake, or afraid of corrections. In a coffee shop or a pub, in a restaurant or just in someone's house. They can choose anywhere they want and just invite people to "Conversa". "Conversa" will also be the name of the events that they will be able to create.

When first accessing the website, there will be a welcoming page with all the information about the system and options to login or to sign up. If the user chooses to sign up, they can create a profile with all their information and then select the language(s) that they want to practice along with the level that they feel comfortable with. If they don't know their level, there will be an optional online proficiency test. Users must be at least 18 years old to be able to sign up.

After the profile is done, users will be able to see near "Conversas" based on their location, and options such as creating a new Conversa, inviting friends to join the community or managing their account. There will also be an option to chat and interact with other users.

In order to help with people's improvement on the language, there will be an option to have a "mentor" at a Conversa, which is someone who has preferably a higher level of English than the people who will be at the meeting. For example, when creating a meeting of beginners, someone who has an intermediary level of English could be the mentor of that specific Conversa, to supervise the practitioners. The creator of that Conversa can choose to be the mentor, or they can leave this role open for someone who would like to volunteer.

Although this application has the potential to be available around the globe, our scope is to initially target only foreign English students living in Dublin, Ireland, who feel that they need more practice with people that have similar knowledge of the language.

Additionally, we will be using a questionnaire on *Google Forms* to understand our target audience better and to be able to track a more precise profile. We should be able to tailor our platform even better, once we know what people think of our idea and what functionalities would people be willing to have. Link to our form: https://docs.google.com/forms/d/1XTZYj5Ie2115nGetg0ex6CREp40Ut2derLQofpNc_qY/edit

6. Resource Requirements

Initially, the following technology tools will be the main ones used by our project.

- Database for storing all the system data;
- HTML for building the skeleton of the website;
- CSS for styling;
- JavaScript for an interactive webpage;
- JSON for exchanging data.
- Google Forms to research more about the target audience.

After the profile is done, users will be able to see near events based on their location and options, such as creating a new event, inviting friends to join the community, or managing their account. There will also be an option to chat and interact with other users.

7. Risk Analysis and Management

7.1. Project Approach

This section outlines the waythe technologywill be carried out:

Phase I	Project proposal finished
Phase II	Initiate coding
Phase III	Coding/Test Software
Phase IV	Conduct Software with Database/Cloud
Phase V	Conduct tests
Phase VI	Implement

7.2. Risk Assessment

The initial Risk Assessment attempts to identify, characterize, prioritize, and document a mitigation approach relative to those risks which can be identified before the start of the project.

The Risk Assessment will be continuously monitored and updated throughout the life of the project, with monthly assessments included in the status report (see **Communications Plan**) and open to amendment by the Project Manager.

Project leadership must agree on mitigations approaches, based on the assessed impact of the risk, on the project's ability to accept the risk and on the feasibility of mitigating the risk. Therefore,it is necessary to allocate time into each group meeting, dedicated to identifying new threats and discussing mitigation strategies.

The Project Manager will convey amendments and recommended contingencies to the group weekly, or more frequently, as conditions may warrant.

7.3. Initial Project Risk Assessment

Risk	Risk Level L/M/H	Likelihood of Event	Mitigation Strategy
Project Size			
Person Hours	**H:** Over	**Certainty**	Assigned Project Manager, engaged consultant, comprehensive project management approach and communications plan.
Estimated Project Schedule	**H:** Over 07 months	**Certainty**	Created a comprehensive project timeline with frequent baseline reviews.
Team Size at Peak	**H:** Over 05 members	**Certainty**	Comprehensive communications plan, frequent meetings, tight project management oversight.
Number of Interfaces to Existing Systems Affected	**H:**	**Certainty**	Develop an interface control document immediately.
Project Definition			
Narrow Knowledge Level of Users	**M:** Knowledgeable of user area only	**Likely**	Assigned Project Manager to assess global implications.
Available documentation clouds establishment of baseline	**H:**	**Likely**	Balance of information to be gathered by the group.
Project Scope Creep	**L:** Scope generally defined, subject to revision	**Unlikely**	Scope initially described in the project plan, reviewed monthly by the group to prevent undetected scope creep.

Consultant Project Deliverables unclear	**L:** Well defined	**Unlikely**	Included in the project plan, subject to amendment.
Timeline Estimates Unrealistic	**M:** Estimated, not clearly defined	**Somewhat likely**	Included in the project plan, subject to amendment.
Change Management Procedures undefined	**M:**A distributed team makes availability questionable	**Somewhat likely**	Continuous review of project momentum by all levels. Consultant to identify any impacts caused by unavailability. If necessary, increase commitment by participants to full-time status.
Quality Management Procedures unclear	**M:** Team is dispersed among several sites	**Likely**	Use of Intranet project website, comprehensive Communications Plan
Software Vendor	**M:** Some have worked together before	**Somewhat likely**	Comprehensive Communications Plan

7.4. Project Assumptions

The following assumptions were made in preparing the Project Plan:

- Project team members are available as needed to complete project tasks andobjectives.

- Project team members will adhere to the Communications Plan.

- All project participants will abide by the guidelines identified within this plan.

- The Project Plan may change as new information and issues are revealed.

7.5. Critical Project Barriers

Unlike risks, critical project barriers are insurmountable issues that can be destructive to a project's initiative. In this project, the following are possible significant barriers:

- Inability to build the web page.

- Natural disasters or acts of war.

Should any of these events occur, the Project Plan would become invalid.

7.6. Project Timeline

PROJECT TIMELINE PROJECTION			
CONVERSA PROJECT WEBSITE			
WEEK	**DATE**	**EXECUTION**	**STATUS**
1	nov/19	Strategy	Done
2	December	Wireframes	Done
3	December	UI Design (Comps)	Done
4	March	Finalize UI Design	Done
5	December	Set up dev site and begin theming	Done
6	December	Build templates and configure modules and specific functionality	Done
7	December-January	Input content	Done
7	January	Internal DB and mobile responsive testing	Done
8	February	Share development site with users	Done
9	February	Resolve anyissues	Done
10	March	testing	Done
11	mar/20	Launch site	Done
11	mar/20	collectresults	Done

12	abr/20	Post-launch services: Secure Pack Maintenance	In Process

7.7. Project Roles and Responsibilities

Role	Responsibilities	Participant(s)
Project Supervisor	▪ Ultimate decision-maker and tiebreaker ▪ Provide project oversight and guidance ▪ Review/approve some project elements	Mark Morrisey
Project Manager	▪ Manages the project following the project plan ▪ Provide overall project direction ▪ Direct/lead team members toward project objectives ▪ Handle problem resolution	Patricia Correia
Project Participants	▪ Understand the user needs and business processes of their area ▪ Act as a consumer advocate in representing their area ▪ Communicate project goals, status, and progress throughout the project ▪ Review and approve project deliverables ▪ Creates or helps create work products ▪ Coordinates participation of workgroup and individual ▪ Provide knowledge and recommendations ▪ Helps identify and remove project barriers ▪ Assure the quality of documentation that will meet the project goals and objectives ▪ Identify risks and issues and help in resolutions	Patricia Correia Lucas Freire Richard Leandro Willian Patricia Patricia The group Patricia Patricia
Subject Matter Expert	▪ Lend expertise and guidance as needed	Mark Morrisey

7.8. Communication Plan

Disseminating knowledge about the project is essential to the project's success. Project participants desire an understanding of what the status of the project is and how they are affected. Furthermore, they are anxious to participate. The more people control the progress of the project, the more likely they are to participate and benefit.

This plan provides a framework for informing, involving, and obtaining buy-in from all participants throughout the duration of the project.

This communication plan is for the following audiences:

- Project Supervisor
- Project Manager
- User Group Participants
- Subject Matter Experts

7.9. Communications Outreach

The following is a list of communication events that are established for this project:

- Weekly Project Team Status Meeting: These status meetings are held every week. Every member of the Project Team will be invited to participate in the meeting.
- Website Use: User Group Participants and Subject Matter Experts may be updated monthly at the discretion of the Project Manager. Information will be posted to the Basecamp project's website.

8. Schedule
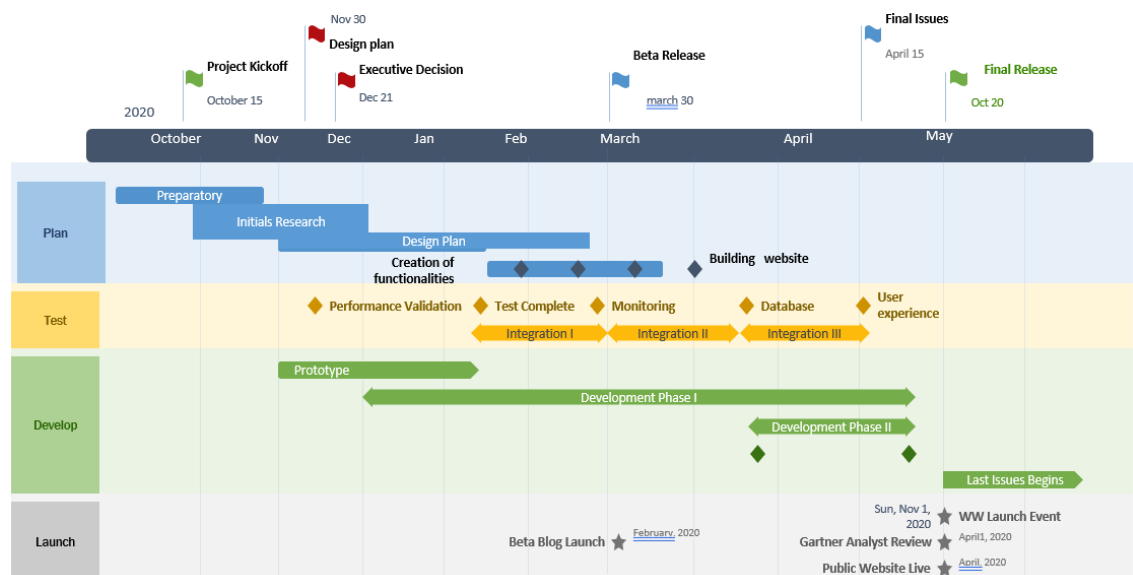
9. Conclusion

After all that has been said about the importance of the English language in the world, we should bear in mind that there is a vast public online that long for tools that help them develop. Speaking seems yet to be a core ability for learners to master, and there is a shortage of tools that can impact the way users practice English. Remarkably, in the case that learners are out of their home countries, infused in a set of international new features, practicing English can be even harder.

This difficulty may also build onshyness, not knowing enough people, being too afraid of direct first contact with other speakers, or even many other reasons that specific learners tend to perceive or experiencewhile practicing the language. In the era of technology, where relationships are immensely impacted by mobiles, computers, and other digital gadgets, people rely on technology to facilitate a series of things, as learning and practicing English. With our tech solution, people will also be available to build a community around them in the process, meaning that some personal barriers focusedon personality or sociability issues may be mitigated as well. However, we want to make sure that people can find partners to talk and build relationships that are safe and fruitless ones.

Conversa brings people together to develop a specific ability in their lives that is speaking English. Our project wants to show that people are not alone facing a whole new language, and they should rely on a network of other individuals that struggle with the same difficulties. *Conversa: meet and talk in the community.*

10. Brand Guideline and Website Development

This document intends to display some general aspects of our brand, such as **mission**, **vision,**and **values**. We also present a short description and explanation of the brand identity, such as the rationale between the **color palette** and the **logo** selection. This is a study conducted with the aim to develop an identity that will be displayed on both our app and website.

10.1.   General Aspects

Mission: To provide a well-developed tool that will aid English learners to develop and work their abilities in English, remarkably speaking, as they build relationships in their communities.

Vision: To establish a community through progressive learning and practicing English around the world.

Values: Our brand stands for people who do not feel comfortable enough when practicing English, as it provides tech solidness, community, social safety, and belongingness to those who venture to learn this language.

10.2.   Logo and color palette

We ran a little research on colors when it came to be choosing the ones we would display on our website.

Color psychology is a well-known of how our brain perceives what it visualizes. As far as scientific research goes, there is not much to work with. However, the impact that colors have on our brains is used to manipulate our decision making by multiple facets of society.

According to the website colorpsychology.org, we can associate personality based on color:

Red

- Associated with energy, war, danger, strength, power, determination as well as passion, desire, and love.
- It enhances human metabolism, increases respiration rate, and raises blood pressure.
- It attracts attention more than any other color, at times signifying danger.
- Colors related to red: Magenta, Burgundy, Maroon.

Brown

- Associated with the traits of dependability, reliability, and resilience.
- Brown-lovers are most often reserved and not looking to attract attention to oneself
- While light brown represents honesty and stability, dark brown is considered mature, predictable, and dull.

Orange

- Combines the energy of red and the happiness of yellow.
- Associated with joy, sunshine, and the tropics.

- Represents enthusiasm, fascination, happiness, creativity, determination, attraction, success, encouragement, and stimulation.

[Blue]

- Unique and authentic
- Enthusiastic, sympathetic and personal; they seek meaning and significance in life
- Warm, communicative and compassionate; they care about what they do
- Idealistic, spiritual and sincere; they value unity and integrity in their relationships
- Peaceful, flexible and imaginative; they are natural romantics and nurturers

Colors related to blue: Teal, Turquoise

[Yellow]

- Associated with joy, happiness, intellect, and energy.
- Produces a warming effect, arouses cheerfulness, stimulates mental activity, and generatesmuscle energy.
- Bright, pure yellow is an attention-getter, which is the reason taxicabs are painted this color.
- When overused, yellow may have a disturbing effect.
- It is known that babies cry more in yellow rooms.
- Yellow indicates honor and loyalty. Later the meaning of yellow was connected with cowardice.

[Green]

- Color of nature. It symbolizes growth, harmony, freshness, and fertility.
- Strong emotional correspondence with safety.
- Dark green is also commonly associated with money.
- Has great healing power.
- Green suggests stability and endurance.
- Color of the sea. It is often associated with depth and stability.
- It symbolizes trust, loyalty, wisdom, confidence, intelligence, faith, truth, and heaven.
- Considered beneficial to the mind and body.
- It slows human metabolism and produces a calming effect.

- Strongly associated with tranquility and calmness.

- Used to symbolize piety and sincerity.

Pink 🟥

- This is a color that represents a gentle type of love.

- Pink stands for tenderness, vulnerability, and youth.

- It is a calming, non-threatening color. It is linked to innocence, hope, and optimism.

- Pink color also represents positive aspects of traditional femininity like nurture and kindness.

- Pink can be linked to childhood sweetness and innocence, sometimes appearing as naïve or silly.

Also check: Salmon

Purple 🟪

- Combines the stability of blue and the energy of red.

- Associated with royalty. It symbolizes power, nobility, luxury, and ambition.

- Conveys wealth and extravagance.

- Associated with wisdom, dignity, independence, creativity, mystery, and magic.

Relevant colors: Indigo, Violet, Lavender, Mauve

White ⬜

- Associated with light, goodness, innocence, purity, and virginity.

- Considered to be the color of perfection.

- It signifies safety, purity, and cleanliness.

- Usually has a positive connotation.

- It can represent a successful beginning.

- Depicts faith and purity.

Black ⬛

- Associated with power, elegance, formality, death, evil, and mystery.

- A mysterious color associated with fear and the unknown (black holes).

- Usually has a negative connotation (blacklist, black humor, 'black death').

- Denotes strength and authority; it is considered to be a very formal, elegant, and prestigious color.

- The symbol of grief.

After this, what we need to analyze is what color we would like our brand to be associate, what our preferences are, and how we canuse them in our favor in terms of user preferences. It is proven that color canimprove your website and brand identity.

•85% of shoppers place color as a primary reason for why they buy a particular product.

•80% increases in brand recognition when using color. Brand recognition directly links to consumer confidence.

When we pick the right color for our website, we are doing so much more than just making it look appealing — we are creating a memorable brand.

Choosing a color for our Web Page can be a tricky game. We want the result to look harmonious and inspiring.So, we had to learn how to pick the right template design, and after research, there arethree steps we are going to consider:

1. Choose a dominant color as our brand: blue and red.

2. Choose 1 or 2 accent colors to create a color scheme for our website: orange and yellow.

3. Choose a background color to complete our design: grey.

Figure 2: Yellow and Orange. Source: Smashing Magazine.

Ultimately, when it comes to our color options, we have five main colors, and they are as follows:

- Red-Orange and Red: These to close shades are used to draw the user's attention to some specific functionalities and buttons that are going be key to our website. Red is traditionally associated with alert state and passion and can influence the reader physically, as in helping to race breath and heart rhythm. In the shade, we also present the orange that contributes to enhancing creativity and the sense of movement. It instigates the learner to hover through the website.

- Yellow: This is the brightest and most energizing of the warm colors. It also contributes to cheer up the user, often disappointed, stressed out, or shy enough to keep on practicing. This is a way to cheer up the mood and bring some hype to the page.

- Light Blue: This color is supposed to bring calmness, friendliness, and relaxation. We use light blue for our logo in order to break the stress that some learners sometimes go through when practicing English.

- Gray: This a neutral color to break down the shades on the website and is meant to be used as a background to facilitate design and reading. This neutral color is also considered modern and sophisticated.
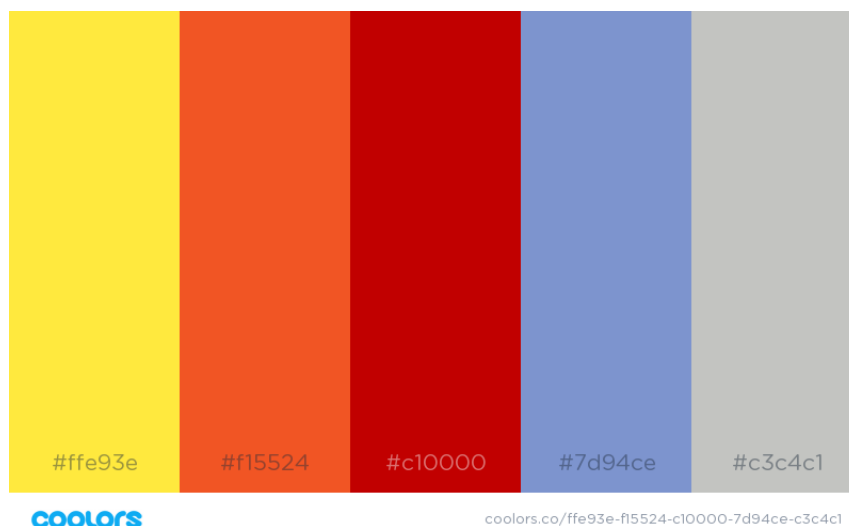

| #ffe93e | #f15524 | #c10000 | #7d94ce | #c3c4c1 |

COLORS

coolors.co/ffe93e-f15524-c10000-7d94ce-c3c4c1

Figure 3 – ColorPallette. Source: created with Coolors

Our logo displays two features, divided by colors. The first one shows two cans connected via a wire, a known children's game generally designed to make two or more people communicate by sending voice vibrations from one can to the other through a sort of line. That elucidates an easy ludic way to communicate, focusing more on a more dynamic and responsive kind of communication. We at Angry Nerds want to bring this idea of connection and communication to our project, and that is primarily from where the idea comes.


Figure 4 – Our logo.

The second feature is a GPS pin popularized in the past decades through the constant usage of GPS tools such as Google Maps, Waze, among others. The pin is strategically situated between the two cans, above the line that connects them, because this is our ultimate aim: bring people together to speak English, engage in new social relationships, finally building community.

10.3. *Website Font: Verdana*

When considering what font to use, one should bear in mind the importance of the term safe web font. A safe font is one that can be easily read in a set of browsers and readers on the web. We are going to use Verdana in our website. Verdana is a true web font because of the simple sans serif lines and its super large size. The letters are almost elongated, which makes it easy to read online. That is one of the font's most essential features that we want to take advantage offor our project.
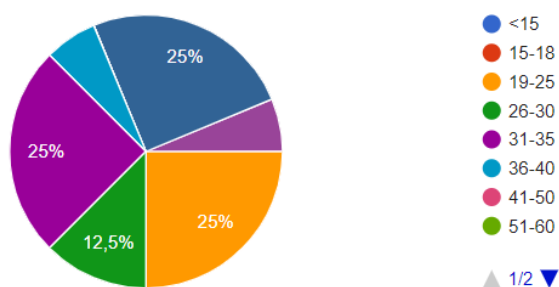
10.4. *Website Schema*
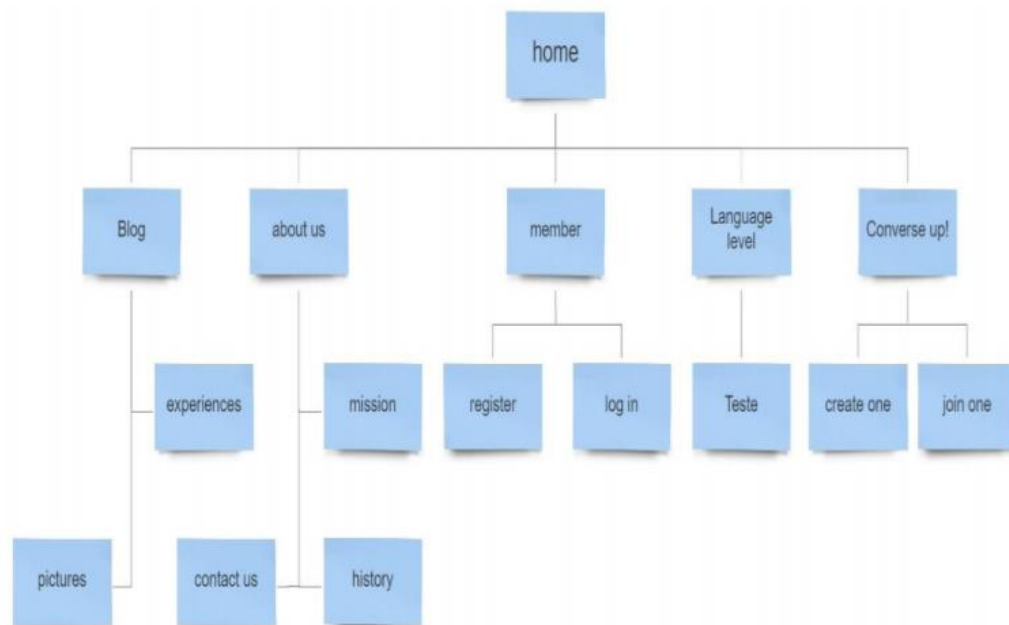
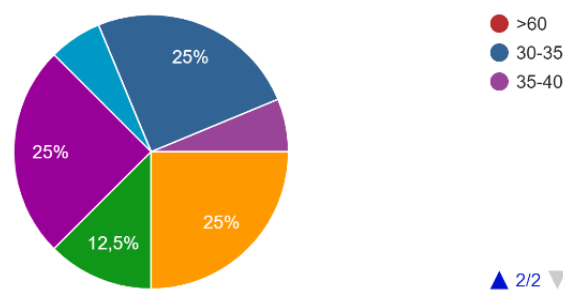## 10.5.   Website Research Form
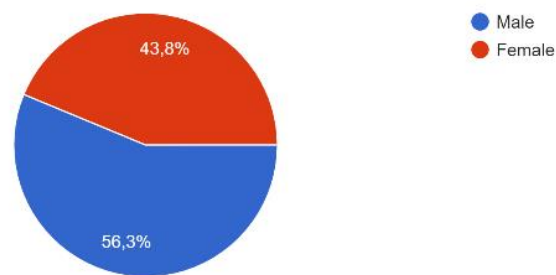
Our research results are as follows:

What's your age?

16 respostas

- ● <15
- ● 15-18
- ● 19-25
- ● 26-30
- ● 31-35
- ● 36-40
- ● 41-50
- ● 51-60

▲ 1/2 ▼

What's your age?
16 respostas

- ● >60
- ● 30-35
- ● 35-40

▲ 2/2 ▼

25%
25%
12,5%
25%

What's your gender?
16 respostas

- ● Male
- ● Female

43,8%
56,3%

Where are you from?
16 respostas

	Brazil	Brazil	Brazilian	India	Malaysia	Mexico
	10 (62,5%)	2 (12,5%)	1 (6,3%)	1 (6,3%)	1 (6,3%)	1 (6,3%)
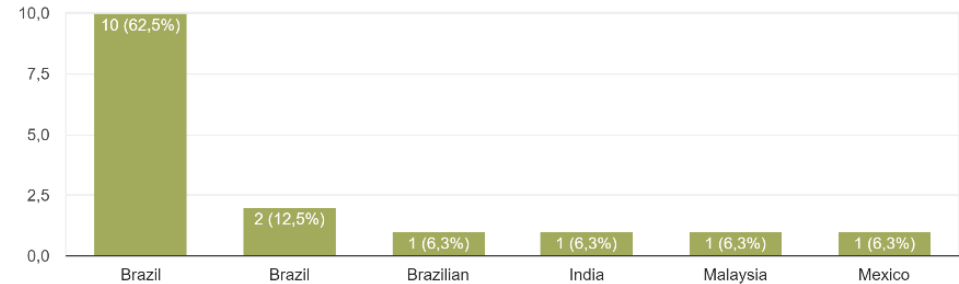
What's your level of English?
16 respostas

- Basic
- Intermediate
- Upper Intermediate
- Advanced
- Fluent
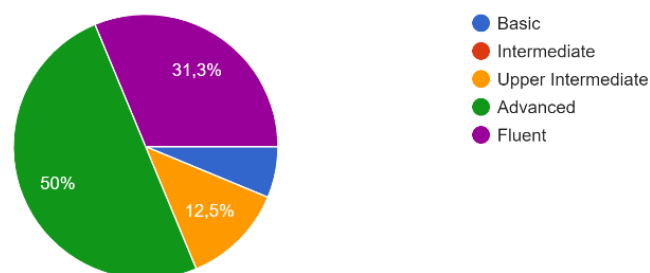
How many years have you studied English for?
16 respostas
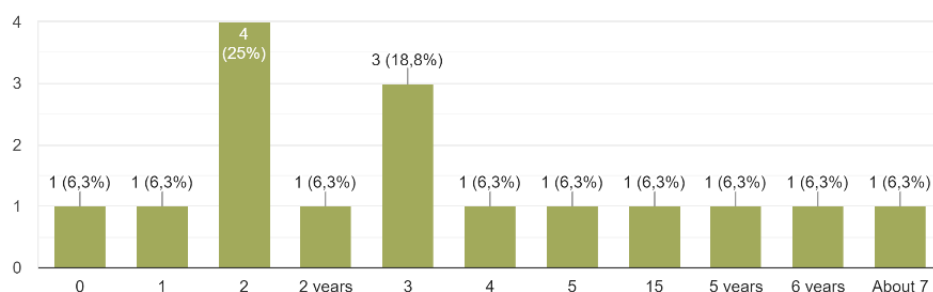
How do you feel about these statements?
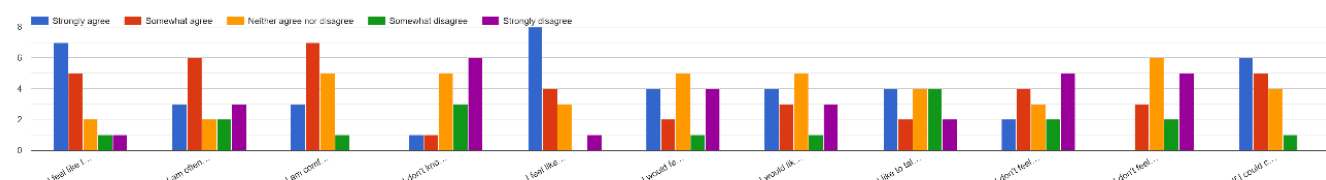
Statements:

I feel like a need to practice more English.

I am oftentimes too shy to speak to people that are fluent in English.

I am comfortable with speaking English with anyone at any level.

I don't know anyone or don't feel comfortable with anyone I know to practice English.

I feel like my speaking is what I should improve the most.

I would feel more comfortable to speak English if I could choose the people and the place.

I would like to use an app to meet people to practice English.

I like to talk to people at the same level in English like me.

I don't feel comfortable having people correcting my English when I speak.

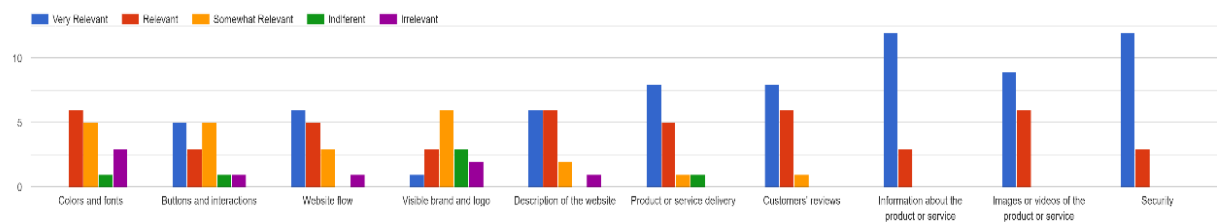I don't feel like speaking English much in the classroom.

If I could choose the topic to talk about, I would feel more comfortable speaking English.

In your opinion, how hard is it to acquire the abilities below, from 1 to 5 where 1 is the easiest and 5 is the hardest?
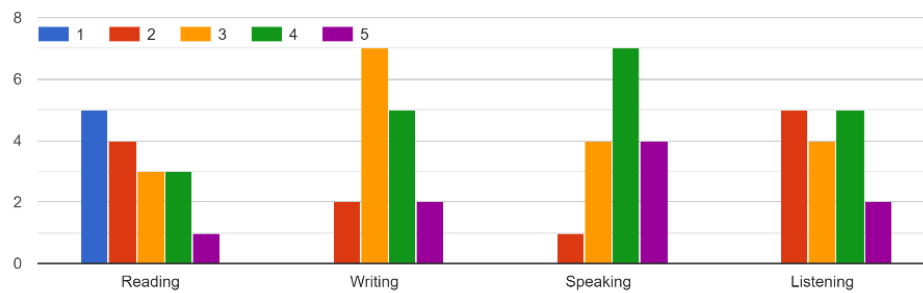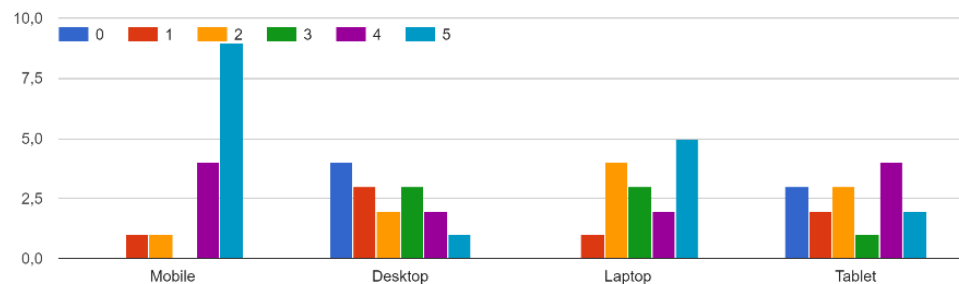

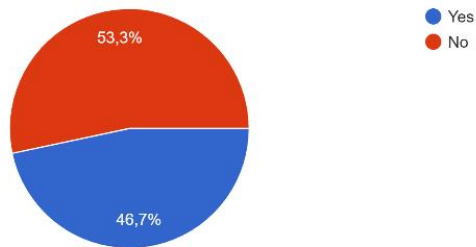## User Experience Assessment

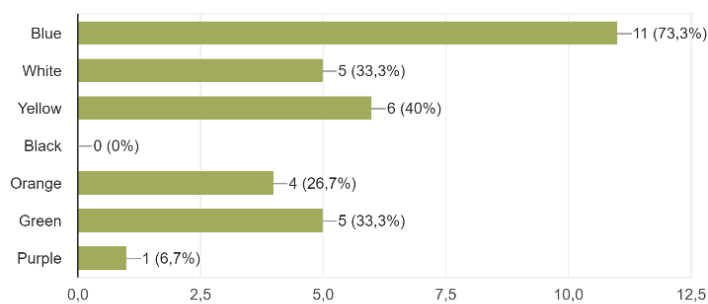When accessing a website for a product or service, what is more relevant to you?

From the platforms below, how would you grade from 0 to 5 the frequency or likelihood to use them when practicing English?

Do you visit blogs often?
15 respostas

- Yes
- No

53,3%

46,7%

What colors do you consider suitable the most when you think about educational websites?
15 respostas

Color	Value
Blue	11 (73,3%)
White	5 (33,3%)
Yellow	6 (40%)
Black	0 (0%)
Orange	4 (26,7%)
Green	5 (33,3%)
Purple	1 (6,7%)

Form   link:

https://docs.google.com/forms/d/1XTZYj5Ie2115nGetg0ex6CREp40Ut2derLQofpNc_qY/edit

11. First semester Contribution Reports

Lucas Freire: 2017354

Since the very start, we engaged in talking and helping each other out, such as giving advice, opinion, and clear feedback on the general work. We assigned specific roles and with my background I saw myself fit for developing the documentation mainly. Even though that was the main idea, I ended up researching through a series of topics. As the editor, I was responsible for gathering all research the other components of the group were picking up and writing about. I developed the documentation design and identity, and got down to reading,

correcting, editing, rewriting, and framing all research we had and was given from the other group members. The references were also my part, carried out after a study on Harvard referencing.

Out of the broad scope of the document, I also worked on the brand guidelines. I research technologies online to develop colour palettes and design identity for websites, such as the *colours.* It helped me understand the core of website development process and what a brand should have and stand out to. We thought that having a solid notion of what a website should be like would help us develop it in the next stage, as our project is based on a web app.

Also, we wanted to run a form to research people's opinion about the app we are going to develop. We wanted to know our target audience better, so I was responsible for developing all the questions for it. I used *Google Forms* to help me develop the form. I researched the main patterns of questions, such as grading questions, drop down questions and so on. It helped me understand a lot more how to research using a pool of people and trying to be the most accurate when it comes to asking people about specific features, not leaving much chance for double meanings or misunderstanding. This is a valuable lesson because companies are constantly running this kind of poll, so now I understand it more. With results we were able to comprehend the need that people have when learning English and what scopes along the way they struggle with the most, and it was broadly enriching.

Finally, after months of research and debating, I designed and put together all we had into this final documentation. I do believe that I have strong project management and documentation skills and I could gladly and largely contribute for our work altogether.

Patricia Correia : 2017352

In this report, I am going to describe my own role in helping the team to achieve its goal in relation to the team documentations and creation of a Website. Also I will provide evidence of my contribution to the cohesiveness of the team and how I facilitated the completion of the team goals.In this semester, I have been arranged to be the **Project Manager** of the Project **CONVERSA**.

One of our challenges was to decide what the group would work with and how we would divide our responsibilities. We have come to a decision that we were going to create a webpage for students who are trying to learn a new language, and would like to have one

more tool to help them to learn. After the decision was made, my plan was to create a realistic plan for the group to follow, and to orientate ourselves as the division of tasks was made.

The first action was to research **The Initial Risk Assessment**in order to identify, characterize, and prioritize in the start of the project. My goal as a Project Manager is to **monitor and recommend** contingencies to the group during the life of the project. After this I create   a **Project Timeline Projection and Project Roles and Responsibilities** in order to keep track of what we were doing and how we were following our **Schedule,** that also was my responsibility.

During our meeting with Mark, he oriented us to research more about how the influence of colors and design would make a difference for us when the time to create our Website comes. In addition to Lucas Freire research I could research how **Color Psychology** would help us to achieve our goal to create a Website that is attractive to the users.

During this semester I have learned a lot, the responsibilities of a Project Manager, and how challenge it can be, to **organize and motivate** a team. I also find very challenge **to Control time management and monitored the progress** of the group

Leandro Silveira: 2017369

I have done more than I have weekly self evaluated. I have, very often, forgotten to fill up the self evaluation form due to busy times with assignments and so.

The very first issue our group faced was to decide among three project ideas and one of these ideas was mine. I firstly spent some time thinking of good ideas to bring together with my group and enrich the decision. Shortly after this decision, I contributed with choosing the group manager.

I discuss with the members of my group, the name of the group and name of the project, what the project would be like and about, the step-by-step to get it done and attributions of each member. The result of those conversations is what is in our project proposal form.

I also signed my name in the group registration form, formalizing my participation in this group.

This group realizes weekly meeting every Thursday at the college and I have taken part in all of them, placing my point of view and contributing with my ideas. I also participated in most of

the meeting with Mark Morrissey, our supervisor, where I discussed, asked questions and gave a clear view of my perceptions for the project.

The first task the group decided to carry on with was, to develop a relevant project plan with heavy documentation of each step we are taking explaining the meaning of it. My group mates and I decided to use a similar form to the one Graham Glanville introduced to us in the first semester.

It was attributed to me to write the problem area, where I bring up the existed problem due to the lack of a solution, so we define the area we want to develop solutions. After defining the area and its problems, I textualized my ideas of how to solve the problem delivering the problem solution in two versions. It is a hard task to put in a document the ideas I have in my mind, so a few mistakes were corrected for the second version and perhaps other versions could come. The problem solution states our project as the solution for the problem described in the problem area.

After those tasks, I helped my group to decide what would be the logo of the idea and to redistribute tasks.

It was attached to me the responsibility of research interaction design and user experience and also cloud computing / website cloud storage. I have done both researches and also a site map schema, this graph is a chart of our website. Perhaps we should call it like that.

Those were my contributions to the group and to the project so far

Richard Welbert Silva Biagi: 2017230

Our group is called Angry Nerds and is formed by me, Patricia, Lucas, Leandro and William. The first task we had together was coming with the initial idea for our project. After we had a few ideas, we were eliminating some of them to get to a final and better one and the one we chose is what this documentation is all about – a web application that will help English learners to engage with other people in order to practice the language.

After we had this sorted, we brainstormed the name of the group and picked someone to be our project manager, which is Patricia who delegated our tasks for the project proposal and I was responsible to do the Project Scope and the Resource Requirements.

For the project scope, I researched the importance of the English language and some of the difficulties that learners usually encounter. Then I researched the applications similar to our idea that already exists (MeetUp) and stated the differences between them. I also detailed

how our application will be done as well as defining the resources we will be using to develop it.

After we had the initial process of the documentation defined, we decided how our logo would be in one of our weekly meetings which I had always attended to and a few weeks later we put everything together and showed to our supervisor Mark Morrison everything we had so far. I've also attended most of the meetings we had with him.

Since I feel more comfortable with building the website than doing researches and writing texts, it was also attributed to me the task to build the initial home page of our website. I've used HTML and CSS only and I will be improving it according to the decisions that me and the group will have together.

Willian Antunes de Sousa: 2017226

The first contribution I made for our group Angry Nerds that is formed by Leandro, Lucas, Patricia, Richard, and me it was the idea of running a brainstorming session so we would have many project ideas to chose from , at the end of session two ideas were chosen one having to do with environmental technologies that would help with recycling and the other one was about a system/app that will work as a toll to help people new to the city with the goal of learning/developing their English through an informal way. So democratically we vote to choose between these options, the majority voted for the app including me.

Having the project idea done next step was to choose a manager for our group I helped the group with the decision of choosing that person. Tasks were delegated and group members could choose what part of the project each one would be responsible for and I contributed by choosing the web development part of the application.

The sample login page of our site was developed by me and we took it and presented to our project supervisor on our weekly meetings , from the supervisor feedback about the security of our webpage I contributed with the Project documentation by researching about website vulnerabilities and ways to secure website as well contribution on our final project documentation by adding table of contents and addition of final report pages. We also had

group meetings weekly and I contributed with many decisions on how the project should be carried out, such as using an agile methodology approach.

CHAPTER 2 – 2020.1

12. Prototype User Questionnaire

This document was created to collect opinions from potential users regards to layout, features, functionalities, colours and shades, font size and type, diagramming, alignment and proportion of icons, the relevance of the content in each page, as well as the prominence and significance of the logo and the web page indeed.

The questions list touches the topics listed above and they were given and answered according to each web page draft that was shown to the respondents. All questions were open-ended, due to get more information of our audience which can provide critical insights and ideas.

- How do you feel about having a non-stop video in a home page of a website?
- Do you feel comfortable navigating in a website with these colours? Would you pick another colour or different shade?
- What font type would you prefer for the contents?
- Would you change the size and form of the icons?
- Is this logo strong enough? Is the logo well-disposed where it is? Is the logo size adequate?
- About the sign up and login boxes? Would you prefer to have them as pages or as pop upboxes so you do not need to go to another page?

Those above are examples of the questions in the questionnaire. It is also important to mention that about 6 students were listened and their opinions were collected. The following analyses bellow each page are based on the answers given by the students.
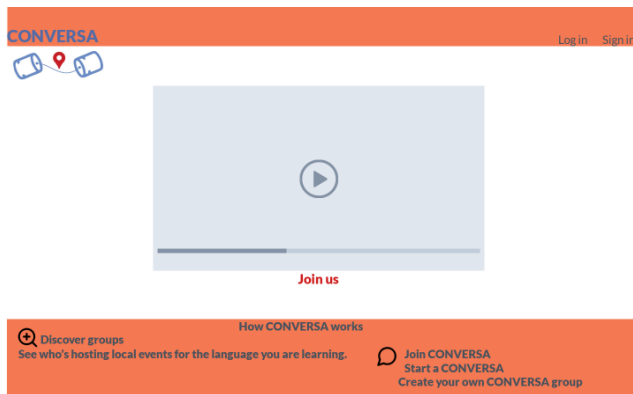
12.1. Home

Figure 5 Home prototype. Source: development process of our app.

Most of the responders are happy with the idea of the video running in the middle of the home page screen. Some people would like to see the logo beside the word conversa on the left top, while others would like to see the logo where conversa is and the word conversa in the top middle page.

All interviewed would change the font sizes and type, as well as they would change the content in the footer for ways of contact, blog page link and help.

12.2. Sign up
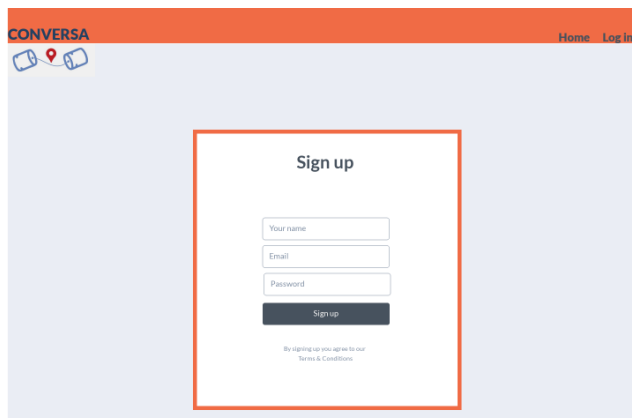
Figure 6: Signup Prototype. Source: development process of our app.

Interviewed students paid attention to the fact that the orange footer was not present and they discuss the idea of this page being a pop up box.

12.3. Logging in with Google
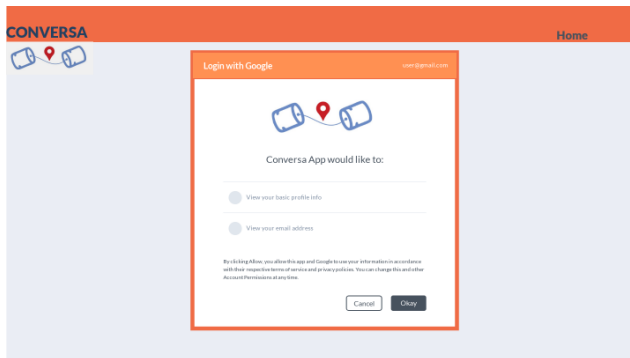
Figure 7: Logging in with Google. Source: development process of our app.

Once again, the lack of the footer was noticed and the possibility of setting this page as a small pop up box.

Looking at this page, three of the students noticed that there was a pattern being introduced, which was the orange border in the middle boxes. This border was not placed around the video box in the home page and it is forgotten again in the following page drafts.

12.4. Login

Figure 8: Login. Source: development process of our app.

Most of the people listened where satisfied with this page; nonetheless they would add the border to the middle box and info to the footer keeping the same standard layout. They also discuss the idea of having this page as a pop-up box.

12.5. Map
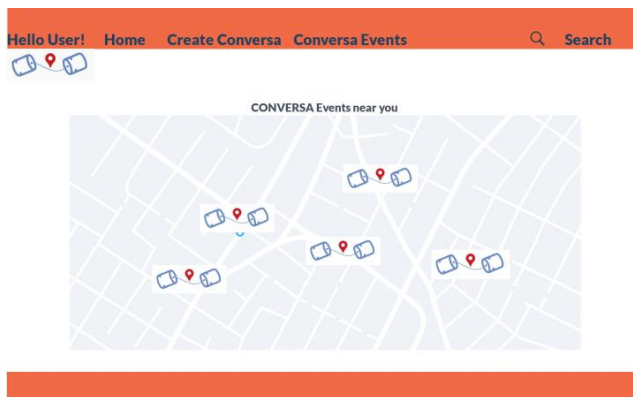
Figure 9: Map. Source: development process of our app.

The idea of using an app such as Google maps in this page sounded exciting to interviewed, due to how comfortable they are with using the tool. In this page the changes would be done in the font size and type and in the size of the logo in the map.

12.6. Hello User
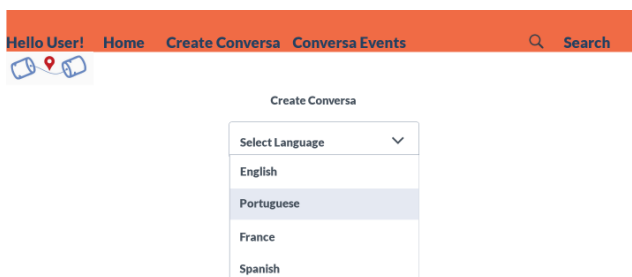
Figure 10: Hello User. Source: development process of our app.

This last page is not the last page of the website, but the last one we could draft and show to our potential future users. Most of these students said that they expected to see on the top of the page, instead of the options create conversa and conversa events they want to

see the options join event and create event. They think that at this point the user must be able to join an event that already exists, and this option should be given on the screen.

The conversa team will take into consideration every single advice and contribution that the students interviewed gave to us. Once again, this was only the first prototype of the web pages that we came up with, so it still needs many changes and improvements. The team honestly believes that those add ups will contribute to the final project.

13. Research About Cloud Computing

13.1. Cloud computing

Cloud computing is the conveyance of various administrations through the Web. These assets incorporate instruments and applications like information stockpiling, servers, databases, systems administration, and programming.

Rather than keeping files on a hard drive or local storage device, cloud-based storage makes it conceivable to spare them to a remote database. Up to an electronic gadget approaches the web, it approaches the information and the product projects to run it.

Cloud storage is a prevalent alternative for individuals and organizations for various reasons including cost reserve funds, expanded profitability, speed and proficiency, execution, and security.

13.2. Cloud hosting

The "Cloud" is not a contraption, or a piece of a PC that is utilized to store documents and data. There truly is no single physical item with regards to characterizing the cloud. The gap and rule idea are utilized in cloud facilitating wherein more than one web server is utilized to keep up your site. In conventional facilitating, vacations can be an issue provided that one server neglects to work the whole site will be in a tough situation. In cloud facilitating, with regards to server glitch you have lesser odds of encountering vacation since there is more than one server keeping up your site. The gathering of servers cooperating to keep up your site is usually called the "cloud". It helps that more than one server goes about as an asset for your site and proves to be useful particularly during top burdens.

Reasons why we decided for cloud hosting:

• To meet developing facilitating needs of the clients.

• To give simple arrangements and progressively created facilitating condition for the developing industry needs.

• With regards to cloud facilitating, one of the greater favourable circumstances is the brought down danger of data loss. Since a large portion of the information is put away in remote areas combined with brisk reinforcements, there is almost no opportunity that we will encounter any kind of information misfortunes.

• crashes making it simpler for imminent and future customers to peruse with no interference.

• Web traffic is not an issue. Since support necessities of your site is spread over various servers, your site can without much of a stretch handle gigantic web traffic which results to less or no personal time by any means. With this kind of facilitating there are less server.

• Scalability and capacity effortlessly. Cloud facilitating is known to have different or boundless system of servers. By utilizing cloud facilitating you can without much of a stretch make as a lot of limit as you need.

13.3. Firebase

Firebase facilitating is a Google facilitating administration which gives static web substance to the client in a safe, quick, free, and simple way. The main reason why will have decided for fire base is because Firebase hosting is free, and it will help us to create the database for our website.

14. HTML,CSS, and JavaScript

In this section, we discuss the deployment of technologies that are going to be used in our webdevelopment.They are HTML, CSS and JavaScript.

14.1.   HTML

Hypertext Mark-up Language is the computer language that we are using to create the Conversa website and web application. This is the mark-up language that we will use to display the web pages' information in the web browsers.

Reasons why to use HTML

Html is straight-forward. Since they are labels, they do not contain any rationale that requires brainwork. Direct, simply take a gander at where those labels starts and closures, and anyone could basically comprehend what is on the page as of now. Only by looking at the html text and its structure a developer can understand the page and apply modifications.

Html can be opened in any web browser. HTML is an industry standard language that is guaranteed to be understood by all web browsers (applications like Safari, Firefox, and Google Chrome).

Html is findable. HTML is also the universally accepted standard for making websites "findable" by search engines like Google, Yahoo, and Bing based on relevant search terms. (i.e.: the inquiry words you type into the search bar).

Html is what we have learned. Along the years studying in CCT we have learned and built up web pages using html. We are not only familiar with the language, but also surrounded by people that could help us in case we need.

There are other technology alternatives that could be used to write the web pages content (the mark-up), but in all the scenarios that were visited, the final work would have to be converted into an html file anyways. XML is an example of this. We could write all the text using this language, but afterwards this content would be converted into a html file.

Another option would be to use Haml, which is a templating framework that is intended to abstain from composing inline code in a web report and make the HTML cleaner, but in this case, the problem is that we do not know much about this technology, which would involve extra research and practice time spent.

Above all, we basically decided to structure the web pages using html.

CSS is a style sheet language used for describing the presentation of a document written in a mark-up language like HTML. The Conversa website and web application are going to make use of two core technologies: HTML and CSS for building Webpages; in other words, HTML and CSS are the basis of building Web pages and Web Applications.

The Benefits of Cascading Style Sheets

CSS is the language used for describing the presentation of Web pages, including colours, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based mark-up language. The separation of HTML from CSS makes it easier to maintain sites, share style sheets across pages, and tailor pages to different environments.

Separation of Style and Structure

We are going to use CSS to separate the document structure from its presentation as HTML is meant forstructure.Applying CSS makes the document more readable and more comfortable to update.

Faster Web Page Download Time

Cascading style sheets will enable us to write less code behind our web pages, which helps the download time of each page, and by placing all our CSS in one separate file, the code will be cached in the browser after the initial request, download of subsequent pages is not needed.

Greater Control of Presentation

Because we can keep every visual aspect of the website completely separated from the content, using CSS when designing our websites allows us to create layouts quickly and troubleshoot any problems. We know that regardless of the page, we control all elements from one (or several) stylesheets.

Putting into practice what we have learned.

Along with the few reasons mentioned above on why we have chosen to use CSS, we also decided to structure our website/webapp using the technologies we learned in our Web development class at CCT.On top of that, we are going to make use of new technologies to

keep up with the advancements in the website development area that arewidely used for developing modern websites.

14.3.   JavaScript

JavaScript is a scripting language commonly used by front-end developers not only to control dynamic website content but also to create it. For example, functionalitiessuch as update, refresh, reload, or move on a webpage, without having to be manually reloaded, are often a scripting language doing its job. Along with HTML and CSS, JavaScript is part of the backbone of web development.

Scripting languages tells programs or websites to do something by integrating and communicating with other programming languages. Scripting languages can be used on the server-side (JavaScript, PHP, Perl, etc.) as well as on client-side (JavaScript, AJAX, jQuery, etc.). They are easy to learn, can be fast edited, and are interactive and functional.

JavaScript can be included in a ".js" file (like CSS and its ".css" file) if you want to use the code in more than one page at once or it can be added directly to the HTML code using the <script> tags with the attribute "text/javascript".

Vanilla JavaScript is the term used to identify when JavaScript it's being used without using any tools that exist to make the language more accessible. But using Vanilla JavaScript is not always the best option because it takes too long to write code, and thus people usually use Libraries and Frameworks like Jquery and React JS.

Jquery is a library of snippets of code that can be reused anytime you want, and it has a repository where the code can be copied and pasted.

React JS is also a Library but usedto build User Interfaces. It also has a repository with a prewritten code for menus and effects. It has a feature called Virtual DOM that can be used to improve the overall speed and performance of the website.

Why are we using JavaScript?

According to web technology survey site W3Techs, popular websites like Google, YouTube, Facebook, Yahoo, and Wikipedia use JavaScript, and because it is used so much, it has become indispensable for the web to work, so all web browsers like Chrome, Safari, Firefox, etc. have support for JavaScript.

Also, JavaScript has therichest feature set. Its scripts and plugins are used everywhere by everyone, so people who can code it are always in demand, and this is a very good opportunity for us to learn it and put it in practice.

15. Database and Serverless Architecture

Regarding the database, we considered two main approaches at first: an SQL related approach and a NoSQL approach. Our findings are as follows.

15.1.   SQL Databases

• Advantages:

✓ SQL databases provide the user with codes, which means that it is more practical for users to deal with it.

✓ It is Portable. SQL supports PCs, laptops, tablets, servers, mainframes. We can run SQL on a local system with an intranet and internet. We can quickly move the database using SQL from one device to another.

✓ Well Defined Standards. SQL database uses an established standard that is being used by ANSI (American National Standard Institutes) and ISO (International Organization for Standardization).

✓ Multiple Data Views. Using the SQL language, users can make different views of the database structure for the different users.

✓ Interactive Language. We can use this language for communication with the database. With this, we can get answers to complex queries in a few seconds.

• Disadvantages:

✗ Partial Control. Due to the hidden business rules, programmers using SQL don't have full control over the database.

✗ Cost. Some SQL versions have high operating costs, so it creates difficulty for some programmers to access those versions.

✗ Interface. SQL has a complex interface that creates difficulty for some users to access it.

15.2. NoSQL databases

- Advantages:

  ✓ Large volumes of structured, semi-structured, and unstructured data.

  ✓ Agile sprints, quick iteration, and frequent code push.

  ✓ Object-oriented programming is easy to use and flexible.

- Disadvantages:

  ✗ NoSQL databases don't have the reliability function which Relational Databases have, (which means that basically, they don't support ACID). Also, it means that NoSQL databases offer consistency in performance and scalability.

  ✗ To support ACID, developers will have to implement their own code, making their systems more complex. That may reduce the number of safe applications that commit transactions, for example, bank systems.

  ✗ NoSQL is not compatible (at all) with SQL. That means that you will need a manual query language, making things slower and more complex.

  ✗ NoSQL is very new compared to Relational Databases, which means that is far less stable and may have lot of less functionality.

15.3. Serverless Architecture

Applications that incorporate a thirty-party Backend as a Service (BaaS) are a strategy in Computing known as serverless architecture. Cloud-hosted applications facilitate much of the server-side services, removing the necessity of a traditional always-on server component. This sort of architecture, as well as single-page web apps, can benefit a lot from reducing the operational cost, complexity substantially, and even engineering lead time. On the other hand, the reliance on vendor dependency is highly increased.

Additionally, there are three cloud vendors for this scope of service – Amazon, Google, and Microsoft – that have been traditionally an out source of the server responsibilities. This solution can mainly increase high availability and scalability so that web apps can adapt quickly

to the flow of need of processing power and efficiency, and developers do not need to think that much about this topic in the development process.

15.4. Choosing Services: Firebase versus Amazon EC2

Amazon Elastic Compute Cloud is a service described as "Scalable, pay-as-you-go computes capacity in the cloud". It provides resizable computing capacity on the cloud and is intended to make web-scale computing an easy tool to deal with for programmers. Amazon EC2 is a "Cloud Hosting" category of the tech stack and counts with quicker and more reliable cloud servers, enhancing scalability, and it is also easy to manage.

On the other hand, Firebase is classified as a "Real time Backend / API" service. This library can be added to our app, sharing data structures. Therefore, any changes made to data are synchronized automatically with the Firebase Cloud in almost real-time. It provides robust data security and also scales automatically. Another technology that this tool utilizes is JSON so that every piece of data has its own URL that can be entered into a browser to view and watch the data update. Firebase makes real-time backend easy; it is quick and responsive and has an easy interactive setup. Currently, this technology belongs to Google, as it was purchased recently.

15.5. Conclusion

In our project, we are going to use Firebase because of its quick responsiveness that, as stated in the explanation, is going to be incorporated in our website as a library that will allow us to update and view data in real-time. This Backend-as-a-Service (Baas) will help us to focus more on the user experience, considering we do not need to manage servers or write APIs. We needed a quick-to-use tool that could enable us to work with JSON technology that has also been used before in past web projects and thus being more familiar to us.
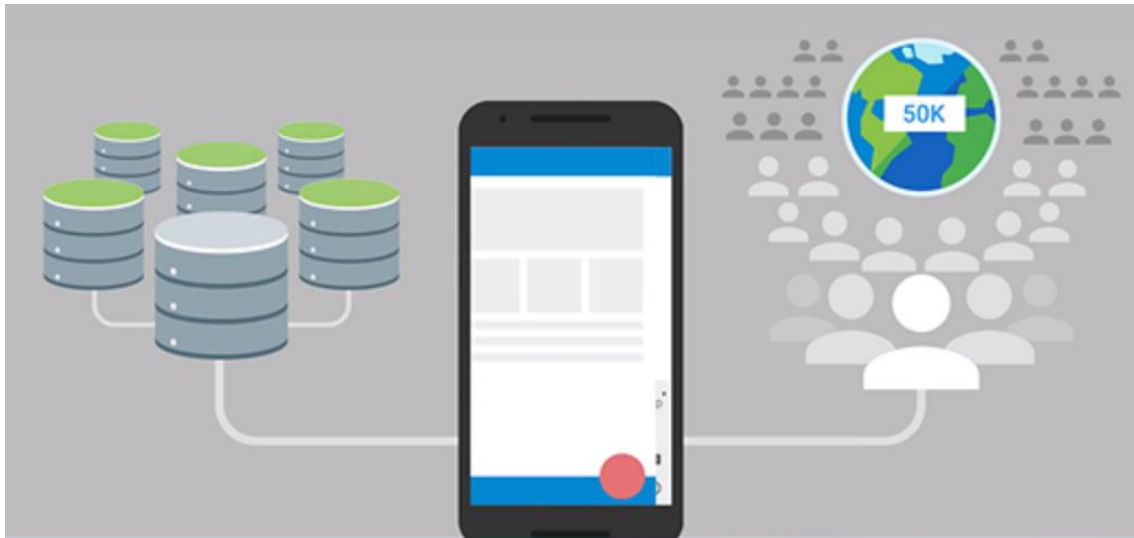
Figure 11: MongoDB.Source: Introduction to Mongoose for MongoDB.

Another reason why we will stick to Firebase is the collaborative data library that enhances efficiency and adaptability. Because we will connect our app to Firebase, we will not connect through a standard HTTP. Instead, we will be connected through a WebSocket that is much faster than HTTP. We will not need to make individual WEBSocket calls, because one socket connection is enough. Our data syncs automatically through one single WebSocket as fast as our users' network can carry it, and Firebase sends us new data as soon as it's updated. All connected users receive updated data almost instantly.

MongoDB is a schema-less NoSQL document database. It means you can store JSON documents in it, and the structure of these documents can vary as it is not enforced like SQL databases. This is one of the advantages of using NoSQL as it speeds up application development and reduces the complexity of deployments.
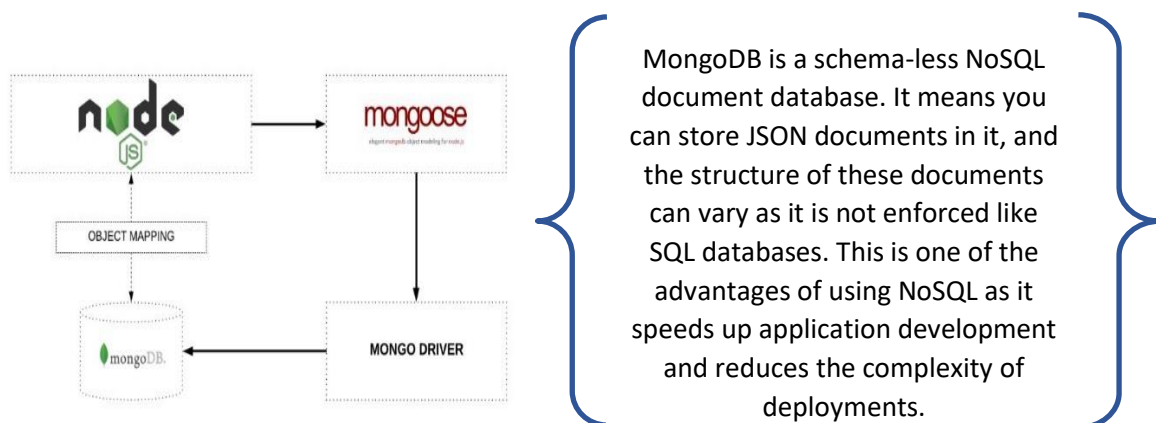
Figure 12: MongoDB work schema.Source: Introduction to Mongoose for MongoDB.

It will also be our real-time database. After careful consideration, we decided that NoSQL databases fit our needs better than SQL databases. NoSQL databases comprehend a more extensive range of data structures and are more dynamic in terms of data usage. Our web-based service will demand exceptional ability from the database to adapt and dynamically store data. Also, Mongoose, which is ultimately the tool we chose to use, will provide us with a set of other functionalities, such as cloud support and prototyping, working with "node.js". Its developer ready stile will enable us to work with a NoSQL database that is flexible for all the data we need to store.

15.6. Postman

The use of APIs in our project is essential; in that way, we can share data between our code on Github and Firebase, making it easier for us to execute actions without having to use the application's GUI. With POSTMAN, the group can run certain functionalities of our website and test it improving the time and quality of our project. POSTMAN is helping us to early detect bugs that could spread into the later stages of our application. We create a request, and POSTMAN looks at the response to make sure it has the element we want in it.
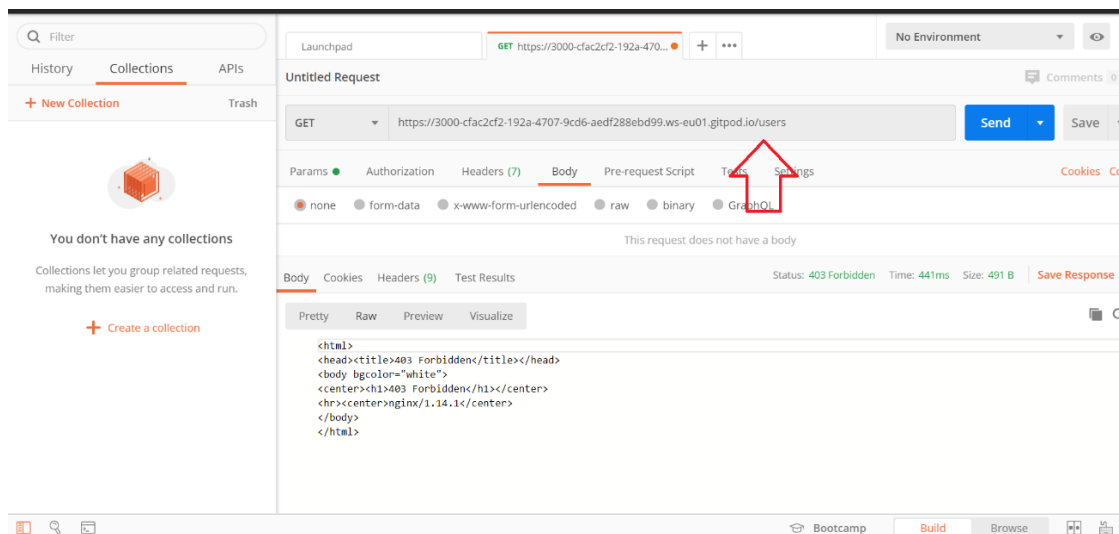
Figure 13:Postman. Source: using Postman while developing.

Any time we write some code, we will want to incrementally run it to make sure there are no bugs or typos. Postman makes it easy to do just that; it lets us write a test without needing to put it in a collection, save it, or back it up. We only make a request to a URL, then see the result. Postman even parses JSON data to make it a little easier to read.

15.7.   Github

Git is an open-source version control system, and there is a series of them out there. This kind of platform is intended for developers to collaborate, once it is possible for a team of people to work on the same project and code, independently of the language or purpose of it. Github reunites a series of functionalities, so developers can download projects and make changes together.
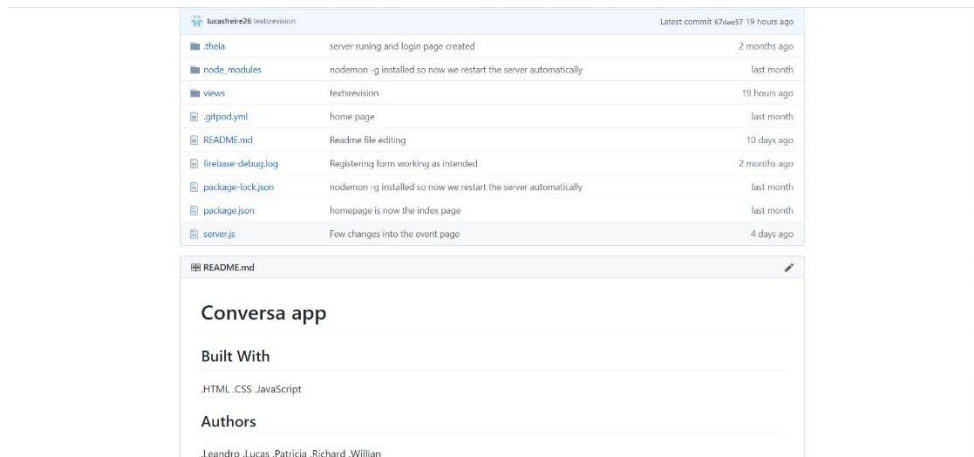
Figure 14: Our group repository. Source: our github.

Github has a very efficient way of storage, which enhances the integrity of the code. Through its features, a single project can be shared, so different people can work on different logical versions of a unique project. That is what the hub stands for exactly: pull request, social networking, and change logs are potent tools with which the program provides developers.

The platform helped us share and work on the same code, keeping the same logic behind our project. It is easy to store and control our code with Github.

15.8.   Gitpod

Gitpod is an online IDE for Github. It provides GitHub with a cloud IDE ideal for development, an alternative to desktop development. This tool is built on Kubernetes and we can use any Docker image for our development environment.
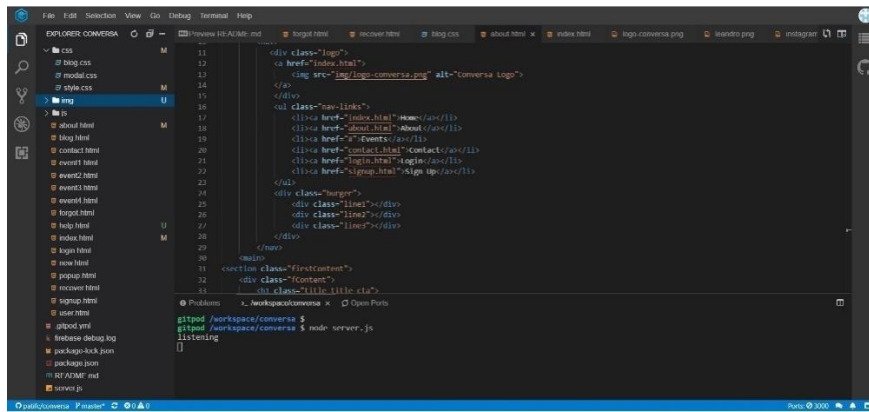
Figure 15: Gitpod. Source: our gitpod repository.

We used Gitpod to right our code and organize our website. It is divided into folders such as views, a folder for our nodes and so on. This was an interactive tool that allowed us to share and develop code together.

16. Social Media Engagement

Social media is one of the hottest trends of the moment, and it has remarkably affected modern business and the way web services are provided. With rising numbers, there is an excellent value in the market to be explored.
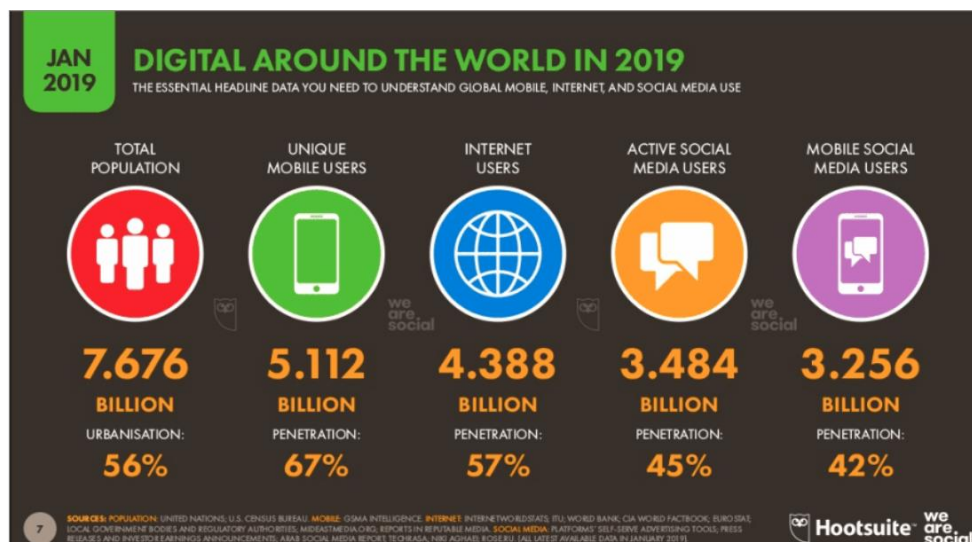
Figure 16: Digital use around the world. Source: Hootsuite.

That is the reason we chose to develop social media pages. Some of its benefits include increasing brand awareness, defining our social and business identity and values, connecting to our public, generate trends and promotions. Web pages create a community of users that modern businesses can access and build up.
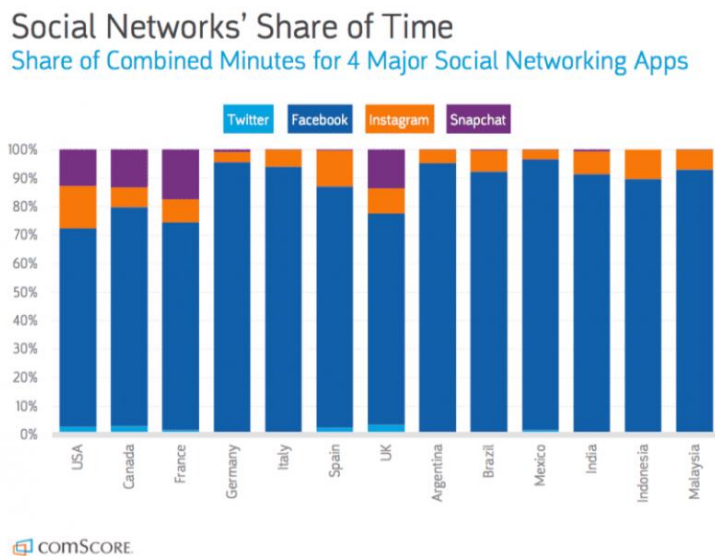
Figure 17: Social Network per time around the world. Source: ComScore

16.1.   Instagram Business Page

An Instagram business page is a non-paid extra tool that empowers brands and businesses by making them known and recognized by Instagram users that might have access to the pseudo page. Reasons to have a business on Instagram:

- By using Instagram for business, we can more effectively engage with customers by using the many features contained in it.
- What is peculiar about this system is that it has stories, and a user can dispose of multiple pictures and videos in different ways throughout the platform. The visitors expect to see more and interact with images and videos more than with pure text. Those characteristics make the displayed content gripping and exciting.
- Instagram business accounts offer features, such as access to analytics, ad targeting, and a contact button.

Conversa Instagram Page
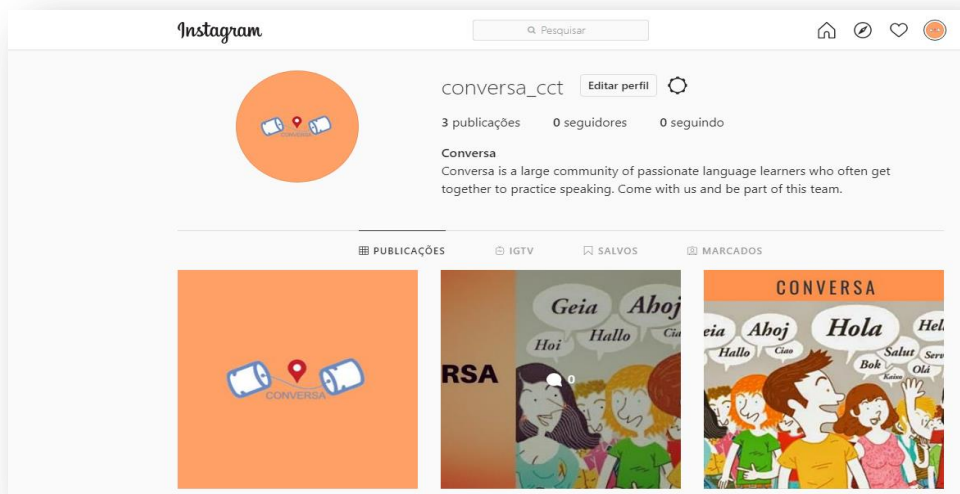
Figure 18: Conversa Instagram page. Source: link on the page.

What do we gain with an Instagram business page?

An important website that deals with statistics stated that there are more than 1 billion monthly active people using Instagram, and those people could if they want to, visit the Conversa Instagram page. Attract engaged traffic: Build a community that comes back time and time again, which makes it a powerful method to spread a brand.

Because of everything that this tool offers, we can grow as a business and be more visible to our customers and visitors. As a plus, they get one extra via to communicate with us, give reviews and feedbacks.

You can access our Instagram fan page https://www.instagram.com/conversa_cct/

16.2.   Facebook fan page

A Facebook Fan Page is a business account that represents a company or organization. Reasons why it is a good idea to have this tool:

- It gives a way to talk to and get feedback from a target audience, because like a user profile, users can update their fans with a status that will appear in the news feed.

- Facebook is currently the second most popular site on the Web, which means that it is a powerful tool to advertise a business.
- The Facebook Pages Insights analytics tool gives useful information about fans and their interactions.

Conversa Facebook Page

Figure 19: Conversa Facebook Page. Source: link on the page.

What do we gain with a fan page?

Through the fan page on Facebook, the team Conversa can share its story with over 2.50 billion users. The platform is free, and access is unlimited, which makes it a powerful method to spread a brand.

There features that allow us to track the audience that more frequently visit our page, so we can aim offers and propaganda in a way to reach them, improving performance and user experience. Finally, we can offer our users an extra line of contacting the team Conversa.

You can access our Facebook fan page https://www.facebook.com/conversa.cct

17. Our website

Note: This session was designed during the development process of our project. Please, bear in mind that this is **not** how our final app looks like (which you can find in the session **Final App**), but we thought we would better keep this session for the sake of comparison, development debate and evaluation.

In this session, we are going to display some of the main parts of our website. The screenshots available here are our final version of the site and are consequentially how a user would see it. The screenshots are versions on both PC and phone/tablet platforms and will illustrate the research carried out in this project.

17.1. Home
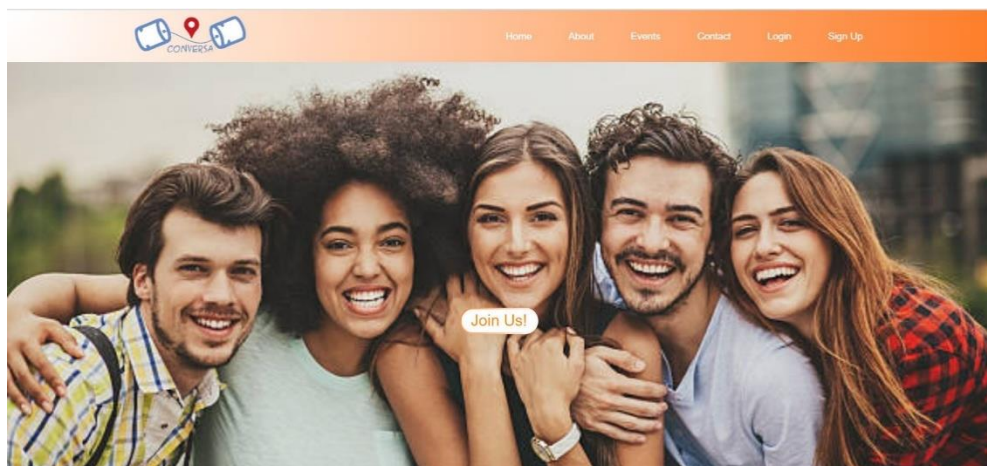
Figure 20: Picture of our home. Source: development process of our app.

Our whole website uses the palette of color developed by our research. We wanted to display a picture of a group of people laughing and hanging out as friends. People that could represent our users on a *Conversa*, a gathering intended to improve speaking skills on a variety of subjects in a light environment.

The first feature that opens our webpage is our header that consists of our logo created in the development of this project, to the left. To the other side of the header, we can find some options inside the navigation bar such as Home, About, Events, Contact, Login, and

Sign up. Finally, the Join Us button in the middle of the picture attempts to bring the eye of the user, as an invitation to captivate users and build our community.
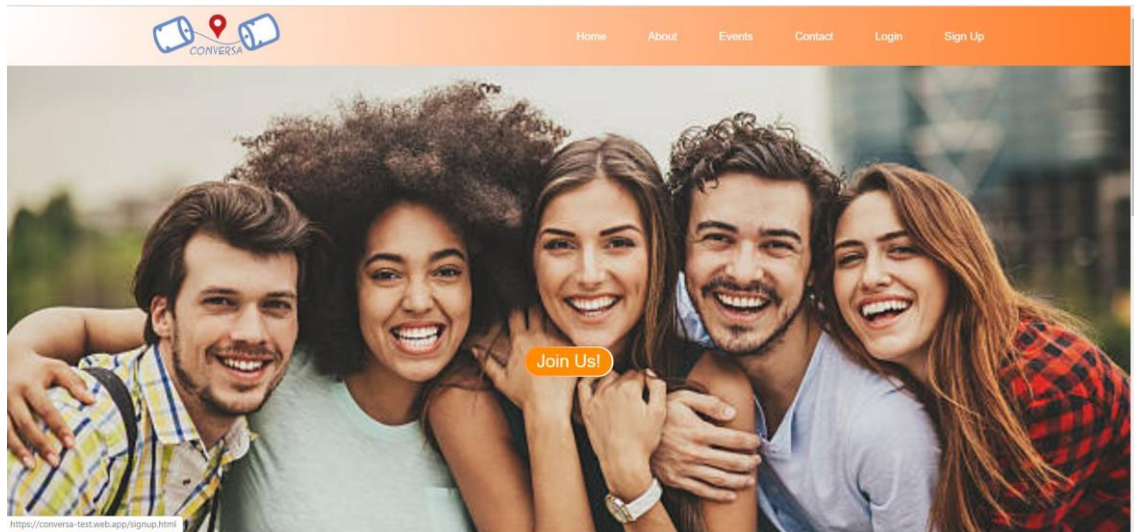
Figure 21: Picture of our home (focus on hover functionality). Source: development process of our app.

Note that this button is also responsive and changes the color when the user hovers over it. It was an exciting interaction that we researched and found applicable, which is going to be implemented in all the buttons of the page.

Figure 22: Picture of our home on a cellphone. Source: development process of our app.

This is our webpage on a cellphone screen or tablet. The rationale is pretty much the same, and you can see almost no difference. One of the main issues we found was the conversion across the platforms, because some of our buttons and functions seemed sometimes to be working on the PC screen but not on the cellphone, and vice versa.

On the phone, the website seems more cohesive as all the divs shrink into the small screen. Users can thus access to the second part of our page, the events, more dynamically. Also, the navigation bar is shrunk into the menu symbol, making more comfortable for users to see the main screen but also for them to navigate on the website.

The second logical part of our home is divided into containers because this is where users and this is important to stress, will see all the available *Conversas* without having to log in. It is a strategy to interest our users once they see what we have to offer.
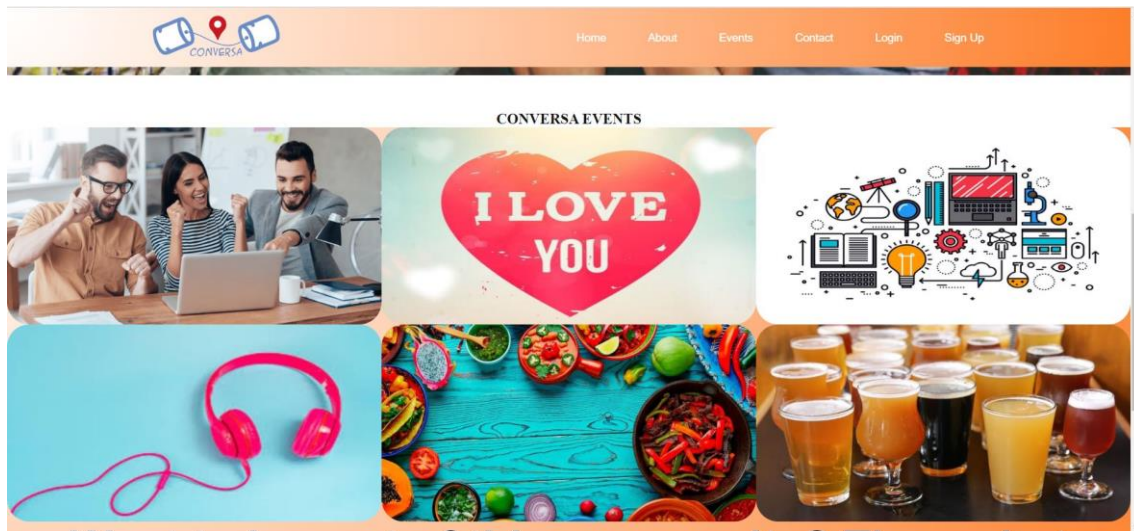
Figure 23: Picture of our home (focus on events). Source: development process of our app.

Here they can also have some idea of what an event will cover. As the next picture displays, when a user hovers over the event, he can have access to more details of it, and the name of the *Conversa* also can be seen.
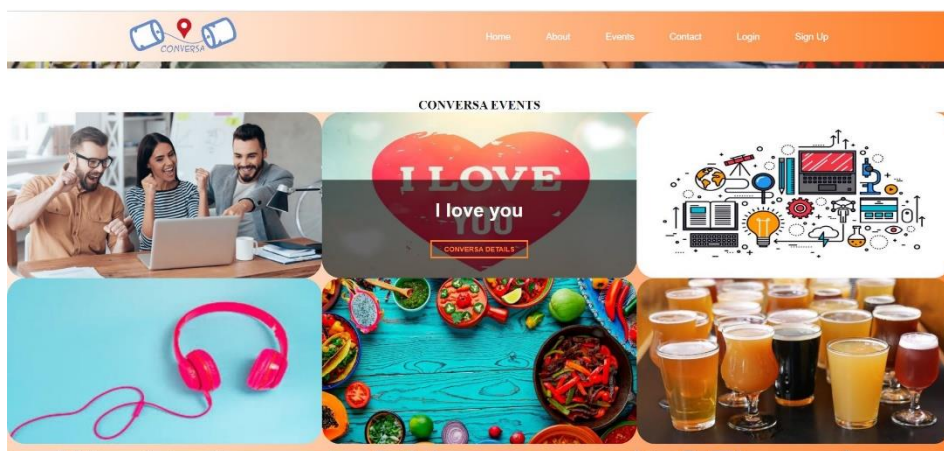
Figure 24: Picture of our home(focus on events, and hover functionality). Source: development process of our app.
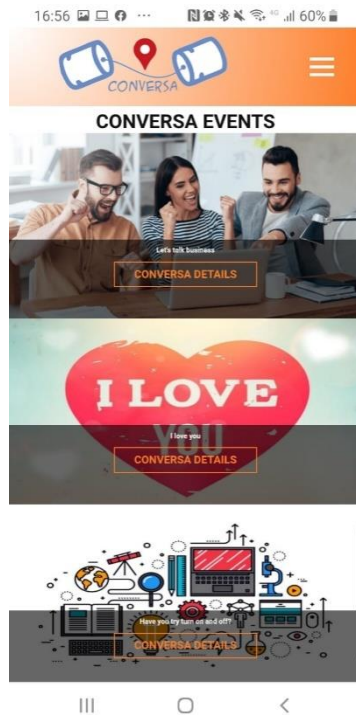
Figure 25: Picture of our home on a phone (focus on events, and hover functionality). Source: development process of our app.

This is our mobile version of the middle session that is designed to display the available *Conversas* we have. The same functionalities are available and the same visual identity as well. Note that details are displayed already, as users cannot hover over events.

Our navigation bar displayed on a cell phone screen or tablet. It has visually enhanced our website.
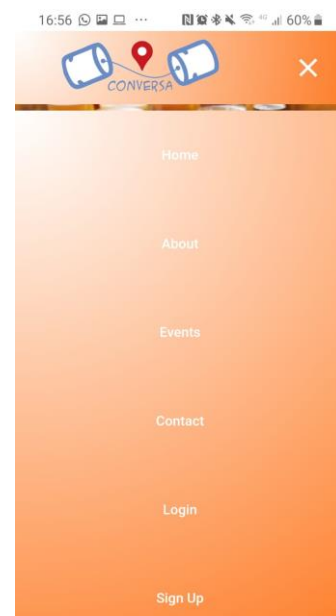
Figure 26: Burguerfuncionaity on a cellphone screen. Source: development process of our app.

Finally, we have the last logical div of our website. We then have a formal invitation for users to join *Conversa* again. At last, we have our footer that consists of three icons to the left, leading to our social fun pages on Facebook, Instagram, and Blogger. To the right, we have institutional details in the first column with About us, Contact, and Help. A second column gives the option to Find an event. Your account is the last column with Sign up and Login options.
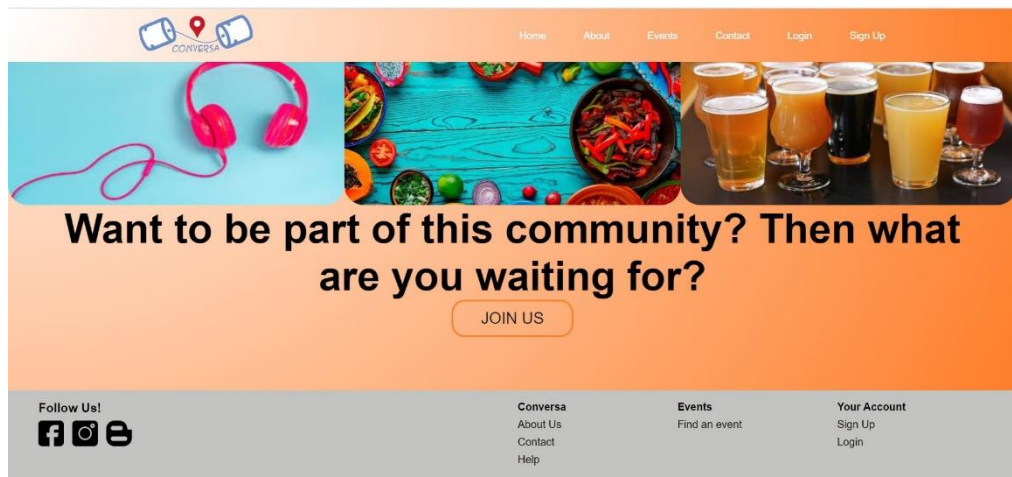
Figure 27: Home and footer displayed. Source: development process of our app.

Our display of the footer on portables. The navigation bar combined with the footer give our website a more professional look.
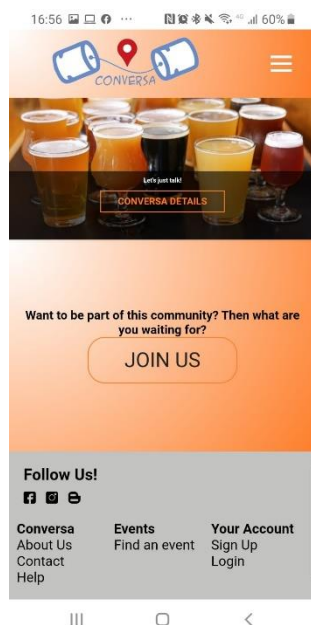
Figure 28: Home and footer displayed on a phone. Source: development process of our app.

17.2.   Sign up

Our signup session requires these fields from the user: Full name, Email, Password, and Student Number, as our prototype would be run among CCT alumni. It is an efficient way to control the pool of users with whom we are trying our website and a strategy to work with a certain level of authentication and control.

Figure 29: Registration form. Source: development process of our app.

Additionally, to the left of the screen, you can see the login button. The signup button has been hidden because the user is already interacting with the signup form, obviously, and this is a useful rationale that we created to make a more dynamic website. The footer and header are also there, and the form fields have an interaction resource that changes the color of the field as the user hovers over and select it, as you can see below.
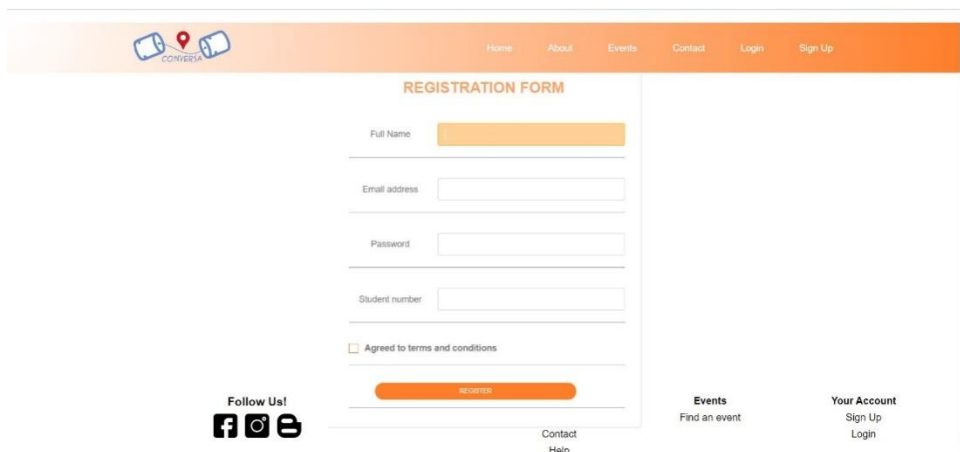

Figure 30: Registration form (field functionality). Source: development process of our app.

The register and home buttons also have this feature, discussed in the session intended to display our Home. Also, a checkbox can be found, ensuring that the user will comply with the terms and conditions.

This is our registration form on a cellphone or tablet. The fields displayed are the same and it follows the same rationale as our desktop version. The fields and buttons have the same color feature, keeping the same brand identity as the desktop version as well.

Figure 31Registration form on a phone. Source: development process of our app.

This is our registration form on a cell phone or tablet. The fields displayed are the same, and it follows the same rationale as our desktop version. The fields and buttons have the same color feature, keeping the same brand identity as the desktop version as well.

17.3.   Login

This is our member login page. There is basically an email field and a password to validate a user's session. They display our project colors and logo as a background as well. The option "Forget Password?" is also available, and they can Sign up if they aren't members yet.
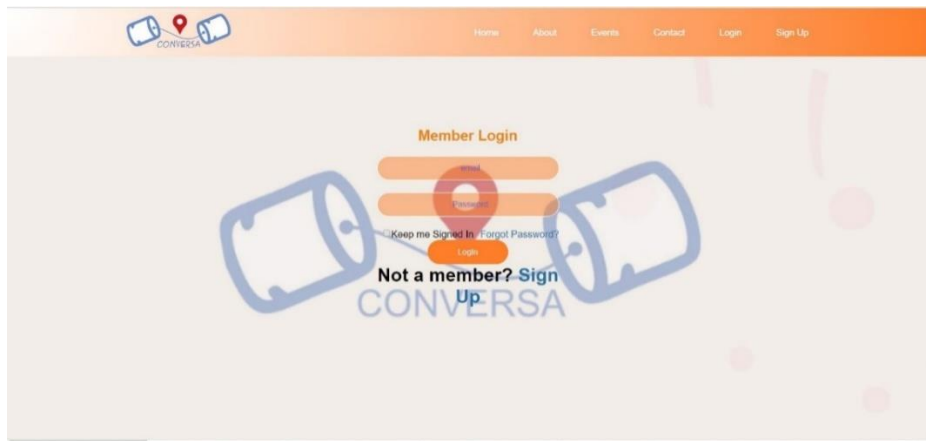
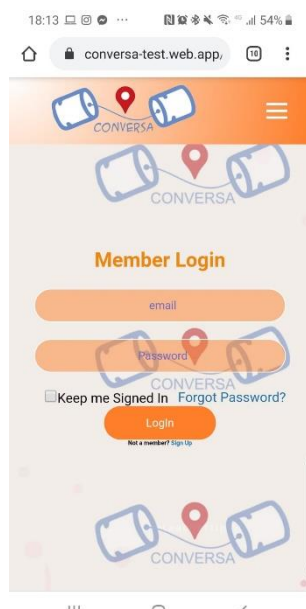*Figure 32: Login form. Source: development process of our app.*

This is our member login on a cell phone or tablet screen. The fields are the same, maintaining the identity and the looks of it as we have on the desktop version. Finally, there is the Sign in button and the option to go back to our Home.

Figure 33: Login form on a phone. Source: development process of our app.

17.4.   Our event: Conversa

Our website intends to gather people together to practice another language through a *Conversa*, a meeting of people that are interested in a certain subject or idea. Individuals get together to talk about this topic and create social networks. Below, you can see an example of a *Conversa.*
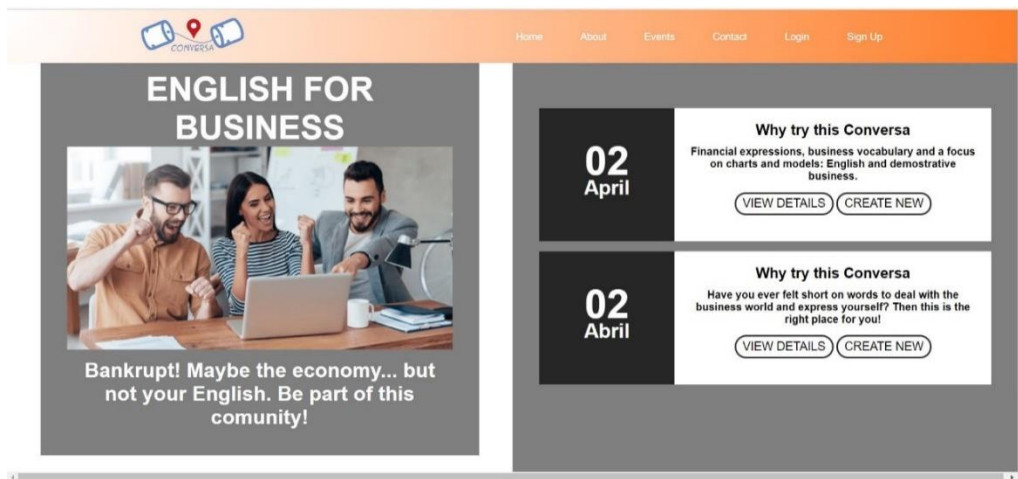
Figure 34: Example of a Conversa event. Source: development process of our app.

To the left of the display, we have the name of the topic of the *Conversa*, which is a general subject or theme. Below, there is a description of the topic, just as an introduction to the main idea of that event. On the right-hand side of the page, the user can find boxes of *Conversas* themselves: real events with a date displayed. There is also a more detailed explanation of that event specifically, with two buttons: one for more details, and another one to create a new event.

18. Troubleshooting

We have developed our idea for almost two semesters now, even though the majority of the programming and coding part was carried out more solidly in the past four months. So far, we have encountered many issues and knowledge gaps that we tried to show and discuss further in this documentation. However, we felt like we needed a session to discuss the main troubleshooting issues that we have been dealing with this project.

18.1.   Firebase

Creating a Firebase project

We created a new Google account so we could create a firebase project there and keep it accessible for all members of the group, as well as for a lecturer if they decide to take a closer look at the project or somehow help us.

When creating the Firebase project, we could use the Google Analytics feature, which provides free, great writing hundreds of unmistakable occasions. The SDK (Software development kit) consequently catches certain essential events and user properties, and we can characterize our custom occasions to gauge the things that remarkably matter to our application.

Some features Firebase analytics give us:

- Redesign mobile analytics
- User insights – from acquisition to app use
- Assignment to multiple sources
- Targeting and optimization in a dashboard
- Real-time analytics

The next step was to install the Firebase CLI (Command-line Interface) to have the firebase hosting. All the commands can be found in the Google Firebase documentation, which is very straight-forward, but we faced a few problems when running the commands.

We used the GitHub to host our application repository and GitPod to code. GitHub is a Git repository hosting service. There, users can share and publish their code. GitPod is an online IDE that can be used from a GitHub repository, so the user can code using GitPod and update the repository that has been hosted in GitHub (please refer to GitHub and GitPod sessions in this document for more details).

The first problem we came across was when we tried to open Firebase on GitPod. We tried to login into Firebase using Gitpod, but were getting an answer that said "localhost refused to connect". We did some research to solve the problem and one Forum for IT displays the message that Gitpod workspaces are transient; possessing no state and that could be the problem. Every time a user opens workspace, they would have to install Firebase tools, CLI again and even with that done, the window that Gitpod provides for the user to see the application would never open. After two days, we finally found the answer on this link https://github.com/gitpod-io/gitpod/issues/689. Please note that the references for the troubleshooting are also in the Bibliography References provided in this document.
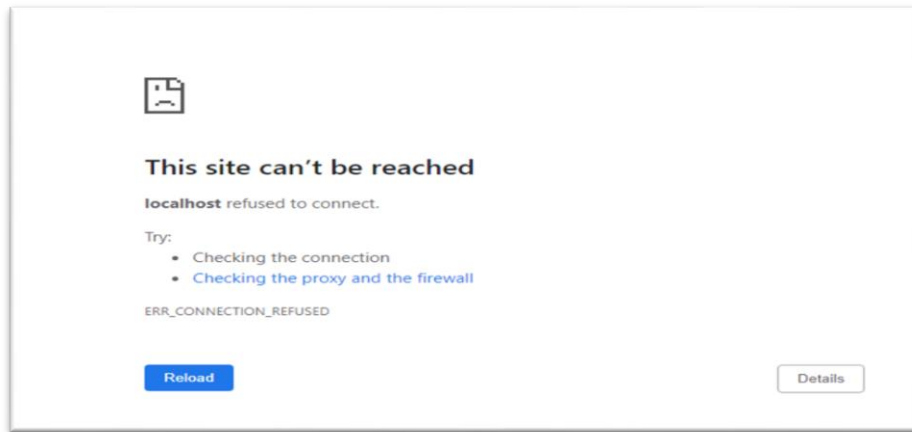
Figure 35: Firebase troubleshooting. Source: development process of our app.

This was the answer we were getting from the browser trying to login into Firebase on Gitpod.

By the time the answer was found, we had already come across a smart alternative, which was to install the CLI using our own machine CMD and also install the IDE visual studio code that runs firebase without presenting any problem. Visual Studio Code is a source code editor that runs on the desktop.
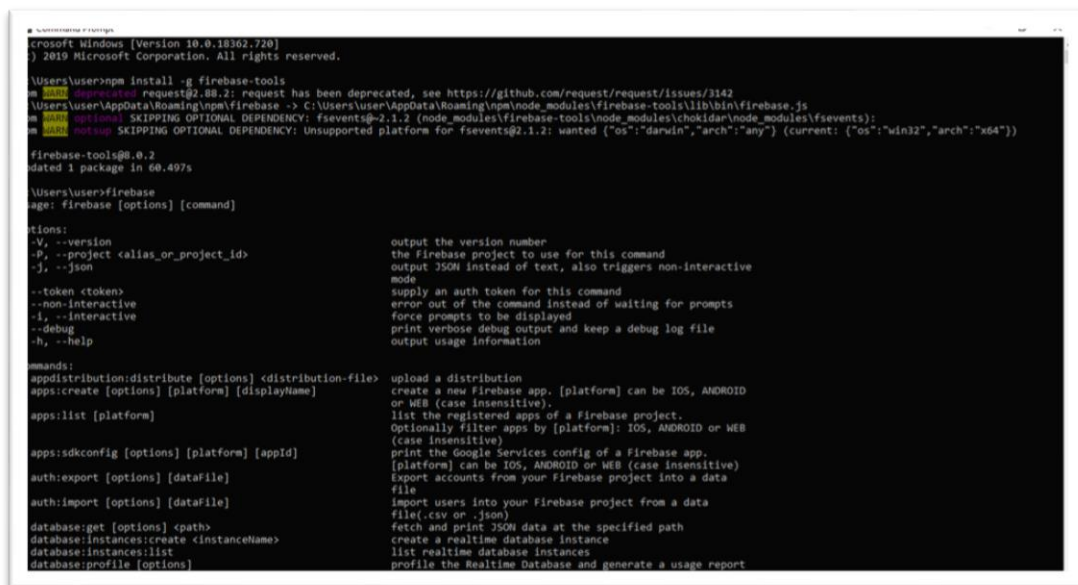

Figure 36: Warning message (Firebase). Source: development process of our app.

Installing firebase tools and CLI using CMD

After installing CLI Firebase tools in one of our machines, we tried to login into Firebase using Visual Studio Code, which is the program we downloaded to use and avoid the first problem we were facing. However, we realized that firebase could not be loaded due to running scripts being disabled in the machine we were using.

Figure 37: Trying to login into firebase using visual studio code. Source: development process of our app.

Security Error: Running scripts disabled on the system
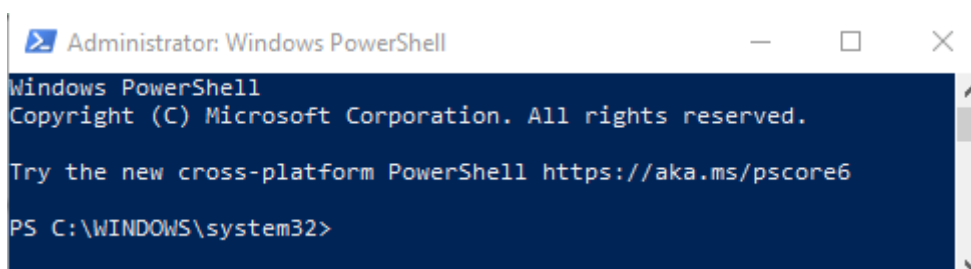
Execution Policies

Searching for a solution for this problem, we found a couple of ways that we could attempt, but most of them would require more downloads and such, so we decided to give it a try on running a command that we found on stackoverflow.com. The command was *Set-ExecutionPolicyRemoteSigned*, and we were advised to run the command using the power shell. After running this command, a group of options appeared so we could change the script execution policy and allow the scripts we need in our machine to load Firebase.

Research on Execution Policies

After running the script on Powershell that allowed us to use firebase tools, we wanted to make sure that the script would not harm our system. So, we researched it, and we discovered that By default, PowerShell is configured to run under the Restricted execution policy. We needed to change that policy to use firebase tools securely.

Change the execution policy

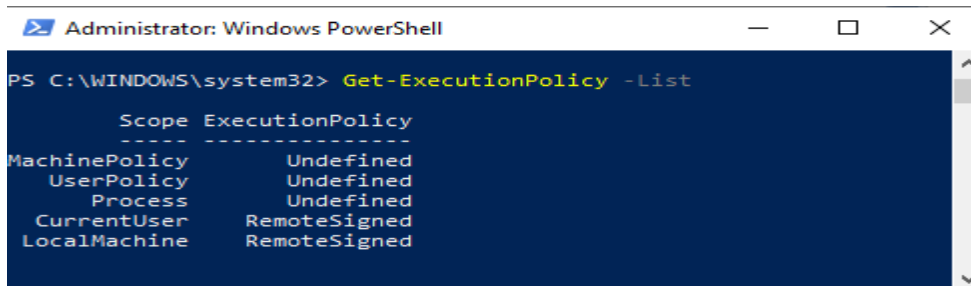First, we Have to start PowerShell with the Run as administrator option.

Figure 38: Execution Policy. Source: development process of our app.

Before changing any policy, we have to check the current policy status on the system by doing: *Get-ExecutionPolicy*.
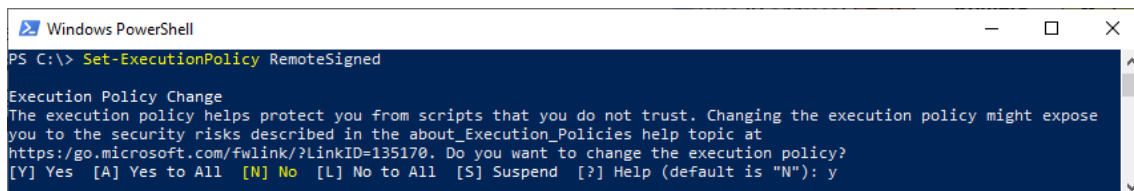
Figure 39: Get-Execution Policy. Source: development process of our app.

RemoteSigned

To change the PowerShell execution policy on our Windows computer, we used the *Set-ExecutionPolicy* Remote Signed .The Remote Signed execution policy is designed to prevent remote PowerShell scripts and configuration files that aren't digitally signed by a trusted publisher from running or loading automatically. Scripts and configuration files that are locally created can be loaded and run without being digitally signed.

Figure 40: RemoteSigned. Source: development process of our app.

After changing the policy, we finally could load Firebase on Visual Studio Code.

Figure 41: Firebase deployment. Source: development process of our app.

Figure 42: Firebase deployment 2. Source: development process of our app.

Firebase running

The step was to load our project and get it ready to use all the features that firebase provides. At this point, after many tries and errors and unable to see our project being uploaded, we realized that when our project was about to be uploaded, the firebase tool creates a public directory and a default index HTML file within it. So, we faced two situations: either change our files to the directory firebase provided us or use our directory containing all our main project structure. As a default, overriding their default index file and by doing that, we were able to see our files being successfully uploaded to Firebase.

Figure 43: Public Directory. Source: development process of our app.

Figure 44: Public Directory. Source: development process of our app.

Firebase Authentication

Previously:
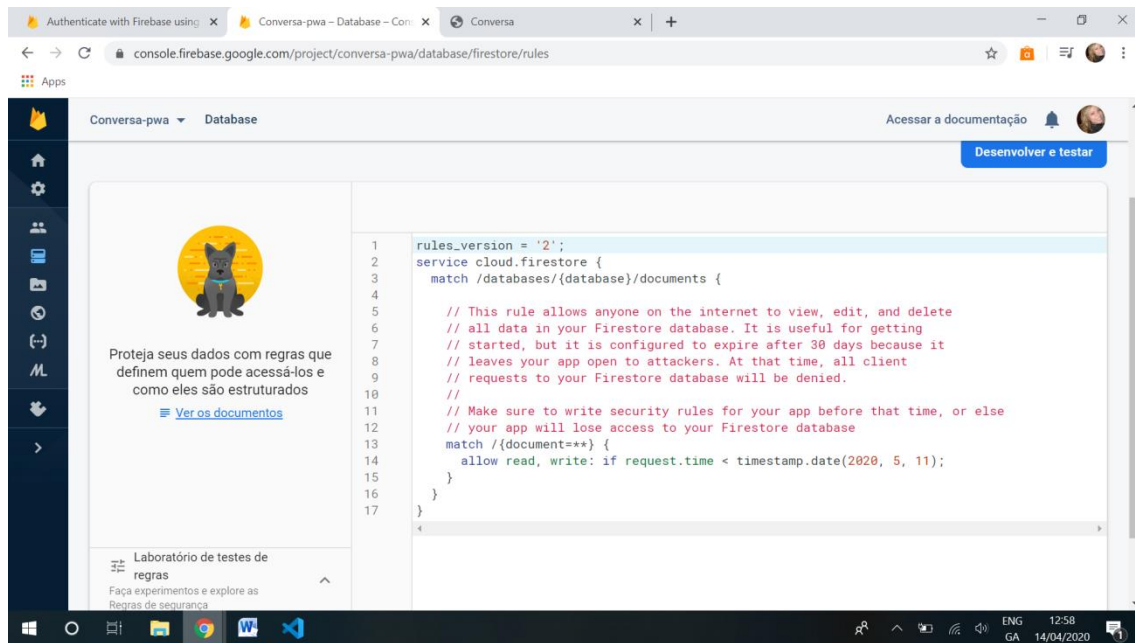
Figure 45: : Firebase Authentication. Source: development process of our app.

Now, users only will be able to alter and have access to date when they have their session initialized.
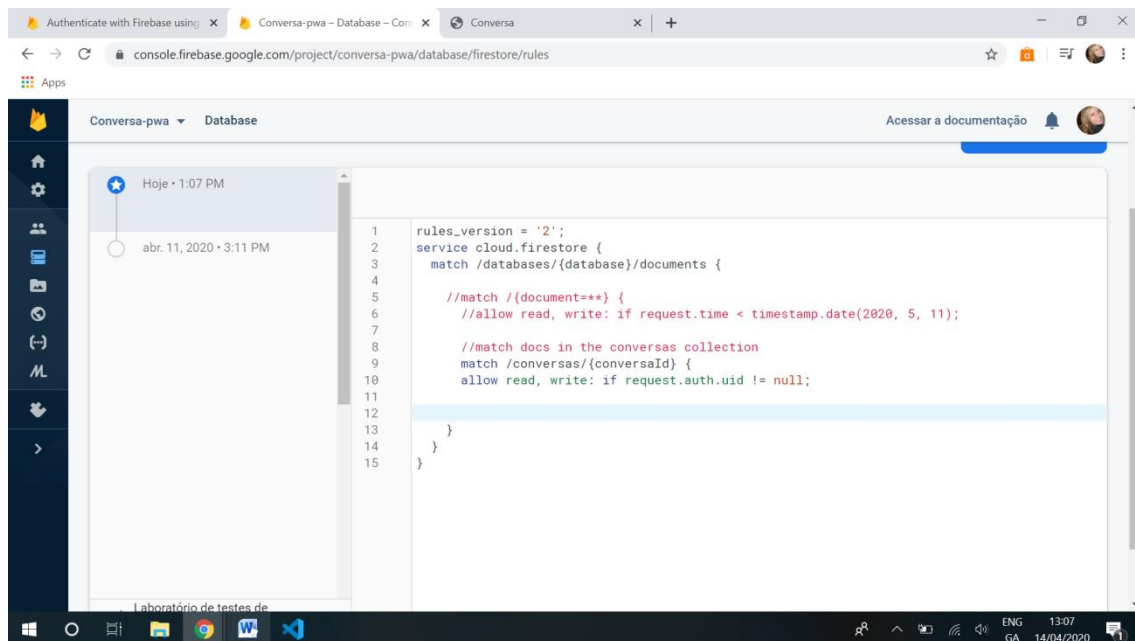
Figure 46: Firebase Authentication 2. Source: development process of our app.

The coming picture refers to an alteration that now allows users to create a short description (bio) for their account (id). They can only see and manage their account, and nobody else's.
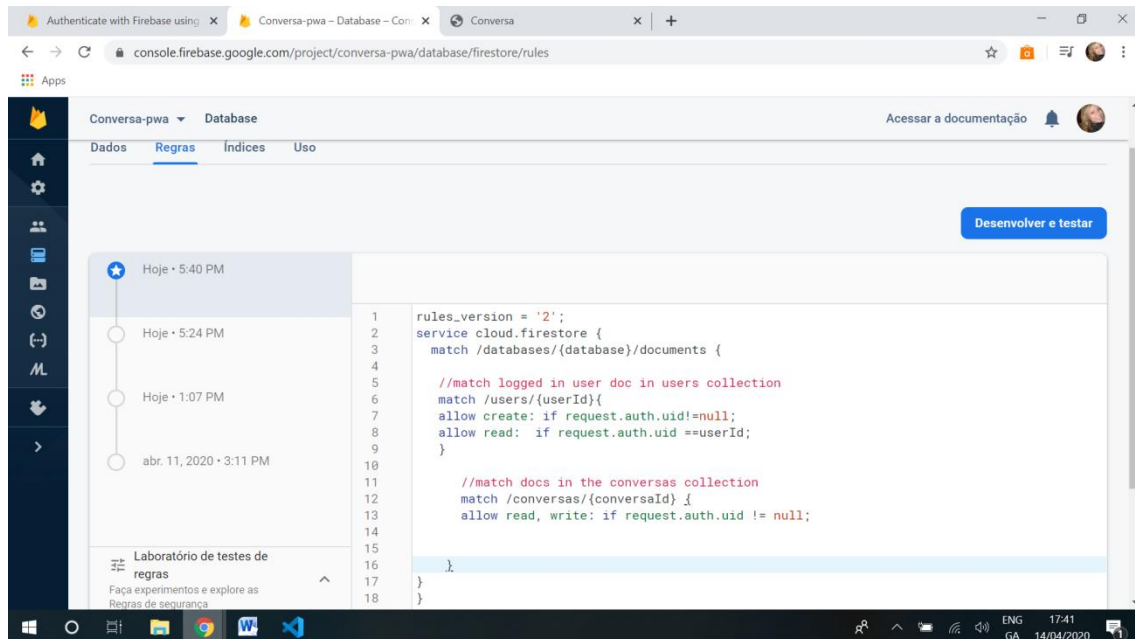
Figure 47:User's bio. Source: development process of our app.

18.2. Progressive Web App

So far, we have been using Firebase to help us with the back end of our application, and it proved itself efficient. We decided to go ahead and use PWA technology to make our application faster and to have more performance as well. PWA is a technology that brings a new approach to software development methodology. Progressive web apps are a hybrid of regular web pages (or website) and a mobile application.

"This new application model attempts to combine features offered by most modern browsers with the benefits of mobileexperience."

After some research, we found out that the most famous example of PWA is Twitter, which recently launched mobile twitter as a PWA built with React and Node.js.

PWA fuses the look and feel of an app with ease of programming of a website. It provides a higher quality experience and happier users. To convert the Website Conversa into PWA, we used the following components:

- Web app manifest**:** For expressing native-like features such as having an app icon on the home screen.
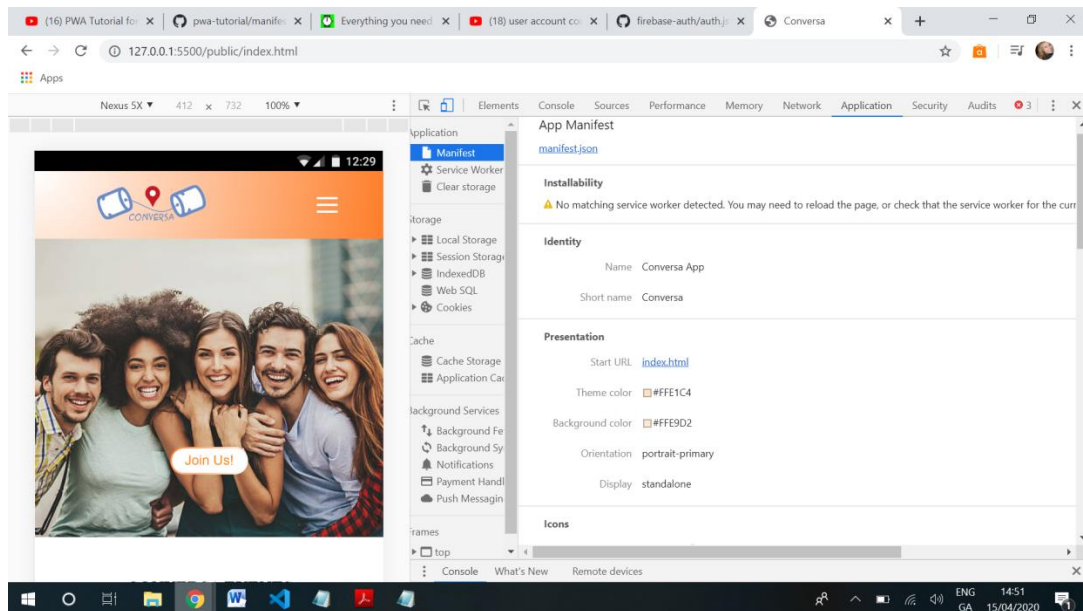
Figure 48: PWA 1. Source: development process of our app.

- Service worker(s): For background tasks and offline support. Application shell architecture: For rapid loading with service workers.
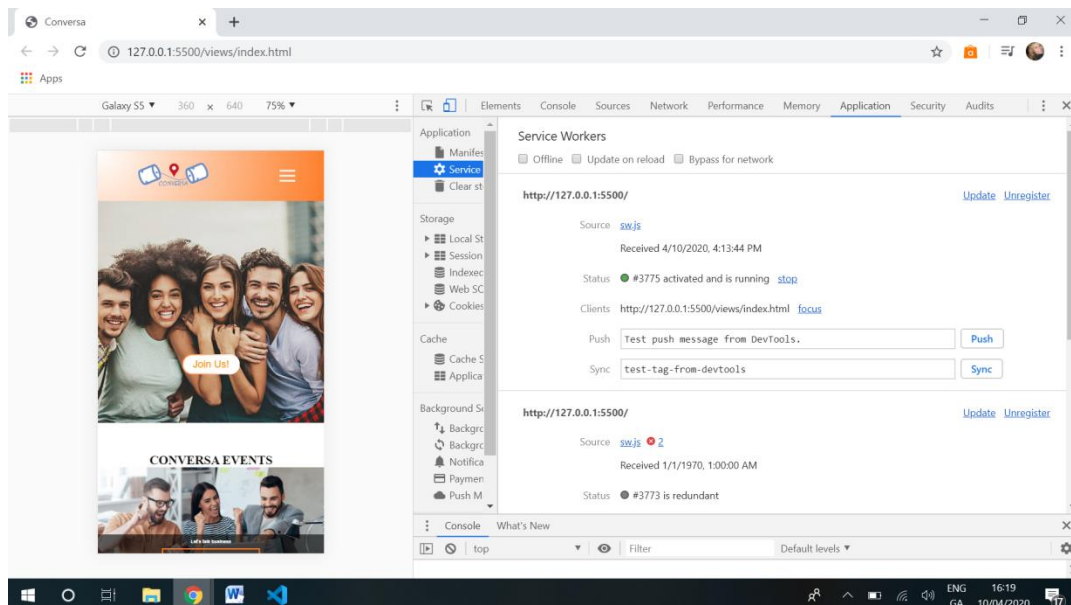
Figure 49: PWA 2. Source: development process of our app.
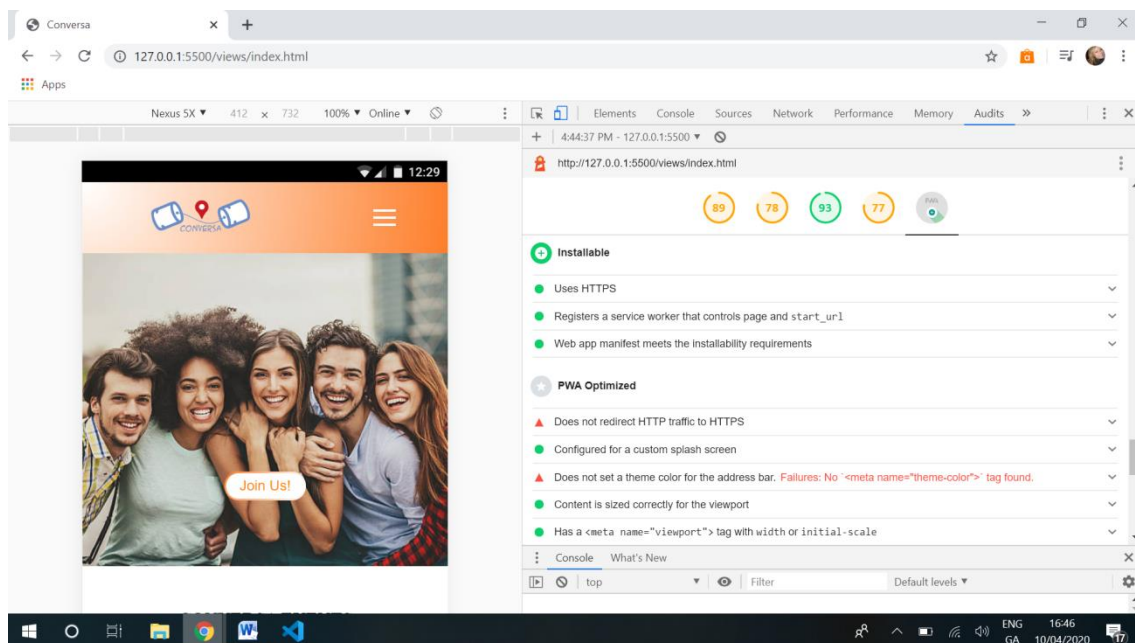
Figure 50: PWA 3. Source: development process of our app.

We understood that PWA is a web application, which can be installed in the user system. It works offline when there is no internet connection, leveraging data cached during the last interaction with the app.

19. Upcoming Features

19.1.   Introduction

Conversa was project planned to be finished by the middle of May so that the prototype would be tested and delivered. However, the program faced time constraints. Even though the group attempted to work with time management tools, the clash between the main project and other subjects Ca's was also crucial in regard to increasing the difficulties faced to get all the functionalities of the PWA up and running.

Notwithstanding, this piece of the document exists as proof of concepts. It displays the previous idea of scope for this project and sets a plan to conclude the prototype, highlighting what is still possible to implement, what thoughts were changed, and will not be in the final

version. Therefore, stating what could not be included due to technical issues, lack of technologies, time, or knowledge.

19.2. The Previous Scope

When first accessing the website, there will be a welcoming page with all the information about the system and options to login or to sign up. If the user chooses to sign up, they can create a profile with all their information and then select the language(s) that they want to practice along with the level that they feel comfortable. If they don't know their level, there will be an optional online proficiency test. Users must be at least 18 years old to be able to sign up.

After the profile is done, users will be able to see near "Conversas" based on their location, and options such as creating a new Conversa, inviting friends to join the community or managing their account. There will also be an option to chat and interact with other users.

To help people improve on the language, there will be an option to have a "mentor" at a Conversa, which is someone who has preferably a higher level of English than the people who will be at the meeting. For example, when creating a meeting of beginners, someone who has an intermediary level of English could be the mentor of that specific Conversa, to supervise the practitioners. The creator of that Conversa can choose to be the mentor, or they can leave this role open for someone who would like to volunteer.''

(*5 Project scope, 5.4 How it will be done, Conversa project proposal).

19.3. Multiple Languages

One of the features that was in the project scope and that we are still considering implementing is the multiple languages option. The lack of time to research tools, which would help us to construct this idea, led the team to agree that we should focus more in implementing more substantial features before getting multiple languages to work. Common sense was that once the PWA is fully launched in English, we can step it up with more languages, so users will be able to select what languages they want to have in their Conversa group. Multiple languages will be researched and developed within the next months.

19.4. Language Levels

Similarly to Multiple languages, the language level was between the first features to be implemented when the Conversa idea came up. Within the user page, when signing up to the application, the user would be able to describe them, filling up a form that would contain the field language level. That would be in their user page and track suggestions of *Conversas* and language tips related to that level, so as same-level users, and displayed on this user page when logged in. The *Conversa* team understands that this is one of the main features to have in the application and that it must be discussed.

19.5. Language Level Test

Intricately connected to the Language level feature is the language level test. That is going to be a way to separate the community into groups and make it easier for users to create *Conversas* events and invite same level users to attend it. In the same way, ain case of a user searching for a specific *Conversa*, if the level of all participants is visibly available, this user will be able to decide whether to participate or not.

The test tool is still not available, because the *Conversa* team did not touch the technology necessary to create it. There are several ways to add this functionality to the prototype, and some of these ways were researched by our team. However, it is a complex tool. The implementation will take time and will deserve enough testing before being executed. As we all know, this project has been delayed due to COVID-19. Because of that, our team was also impacted, and so was our time. Those situations resulted in not getting together to discuss how to overcome technical issues and lack of knowledge and having less time to expend on researching forms to develop the tool as well. Nevertheless, the team will discuss a plan to introduce the language test into the prototype.

19.6. Grammar Corrector

The idea of having this tool was to supply other features, such as the language test level and the upcoming chat. However, these extra functionalities are still not up and running on the PWA, so we decided to prioritize other components since quality in the design of each page to guarantee a better user experience was needed, as well as the time and effort spent over the production of the documentation. The grammar corrector could be added to the other functionalities with the help of an external library or API, for instance, https://webspellchecker.com/, which is a public API that we could use in the future.

19.7.   Search Function

Following the same idea, a search function can be added to the *Conversa* progressive web application by using an external public API, such as https://www.addsearch.com/. There are many other public free APIs that we could use, and this would perhaps be the more straight-forward way, considering the quality standard of the application, so as user experience and functionalities. However, there was not sufficient time to be allocated to implement this feature; therefore, the team opted for postponing it until we are more comfortable in regards to the time-frame.

19.8.   Settings Page to Manage User Account Full CRUD

Perhaps, the most critical functionality that *Conversa* does not have working yet is full *CRUD*. Through this page, a user should be able to have access to all their information, as well as updating any possible profile detail errors or maybe only applying changes as they please. The user should also be able to delete the account by accessing this page. Unfortunately, there was no time left to implement this, which we believe to be one of the most complex pages in a website, application, or PWA. There is a lot involved, such as getting all the information from the database and displaying it to the user, so they can perform full CRUD operations. The team is ready to build this feature. Nonetheless, more time must be allocated since reliable testing is crucially necessary.

19.9.   User Page with a Form

In the same way, there should be a form within the user page, so the user enters with their information and profile details such as: full name, the name they want to appear in their profile, their language level (once it is implemented), their interests and so. This form will be stored in the database within the user page, so the next time this user logs in, the application pulls out the corresponding form. The user will then be able to perform full CRUD, and the administrators will have better control since they have more information about users.

The fact that the setting's page does not exist, impacts directly in not having this user form done yet. The page and the form would communicate with each other because they are correlated and dependent on each other. Secondly, due to the lack of time, the team had to set apart the tasks that should be done first based on priorities. This user page with a form will

be done next, together with the settings page since the *Conversa* team understands the importance of these features to improve user experience and the quality of the PWA.

19.10. Exit a group

The function to exit a group should not be difficult to implement and will possibly be implemented next. The only concern that obstructed the team to get it done was the fact that the creation of the interactions between front-end and backend was concluded with a small delay, and the CRUD operations happen in the database. The delay occurred because many subjects' Ca's clashed together, and COVID-19 came to picture, which slowed down our activities and narrowed down our possibilities to ask our classmates and lecturers for help. We could still do it online, but internet connections were also a problem. We aim to carry on with the implementation of this feature once the settings page and user forms are done.

19.11. Video

The home page of the PWA is a colourful welcome to the users. There is a massive picture of a group of people in it, but the first idea was to have a video running on a loop on that page. The video would be recorded by a friend of one of the team members, and the people on the video would be the creators of the *Conversa* PWA. We believe that a video attracts more attention than a static picture; however, because the world is suffering from COVID-19, we could not get together to produce the video. Perhaps, after the pandemic, when the world is back to normal, we will be able to update the home page, uploading an exciting *Conversa* video there.

20. Final Conversa PWA

So far, we have explored a range of functionalities of our web app, discussed the issues that we have encountered in this stage of development. This session aims to present the few final changes to our web app, putting everything presented in this document into place.

Our app started as a prototype that we created seven months ago. The initial idea was to have a short video in the index page, a button with a link for the user to join the website, and a simple footer, as follows:
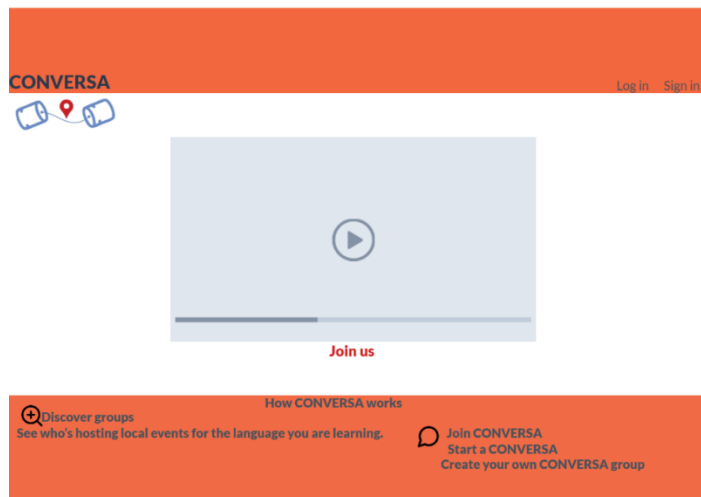
Figure 51: Prototype idea. Source: development process of our app.

At first, we did not have a solid idea about the app looks or development process. Later on, we managed to evolve to this as pictured in the session *Our Website:*
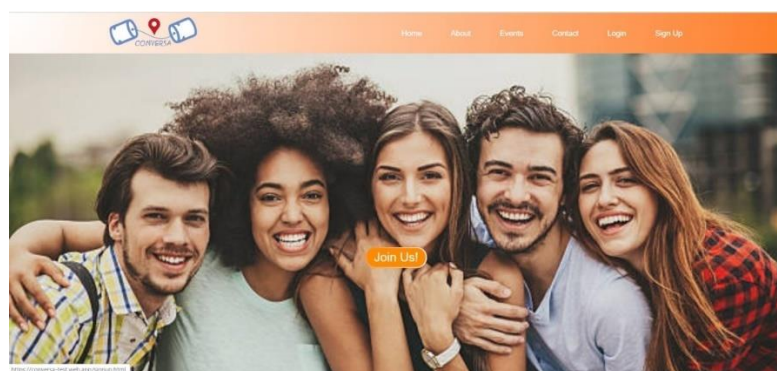
Figure 52: Old home page. Source: development process of our app.

After COVID-19, the idea of making a video was set aside, because the group members could not gather together for any development aspects. We had to turn the feature into a simple picture that displays a group of people as above, even though this is not our final look. It is essential to highlight that the risk of a natural disaster was taken into consideration in the "Risk Analysis" session, showing that de document has been based on professional documentation standards.

The second stage of our web app incorporated the PWA functionalities. The logo was reshaped into a better icon, we introduced a navbar with more options for the user, and the colors are more vibrant, with a young vibe approach. The button is a round format, with an orange feature when the user hovers over it, as demonstrated in the user experience research.
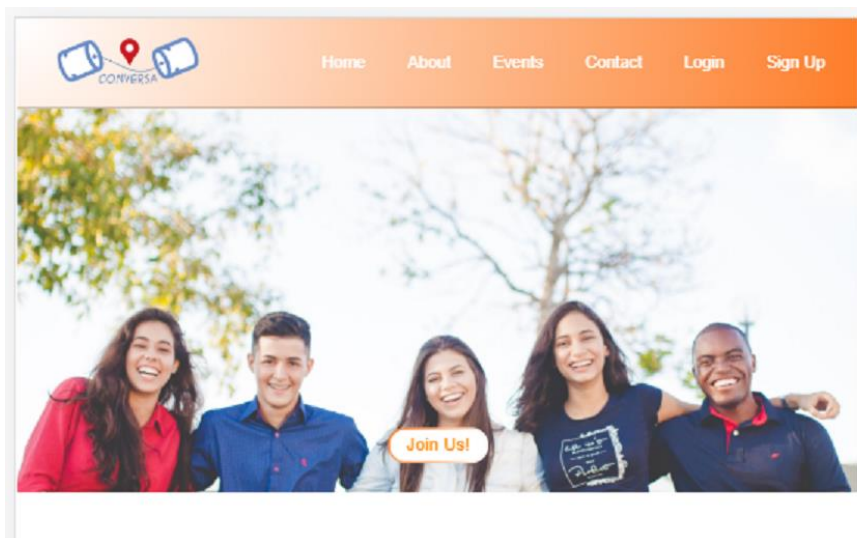
Figure 53:Actual home page. Source: development process of our app.

The picture behind the button was changed to a better quality one, and it now gets orange when clicked. When accessed on a cell phone, the navbar has a burger functionality with options that open as the user clicks it.
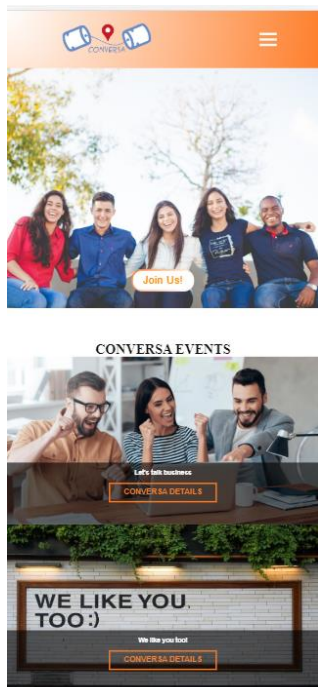
This is an illustration of *Conversa* looks on a cell phone or tablet.

Figure   54:   Home   page   on   a   cellphone. Source: development process of our app.

Also, there was some substantial change in the prototype of our Sign up form. The picture that follows is an example of our first design thoughts:

Figure 55: Signup form prototype. Source: development process of our app.

Which later evolved to this:

Figure 56:First official signup form. Source: development process of our app.

And finally this:

Figure 57: Final Signup form. Source: development process of our app.

Our flow was also changed from our previous prototype and it is now as follows:
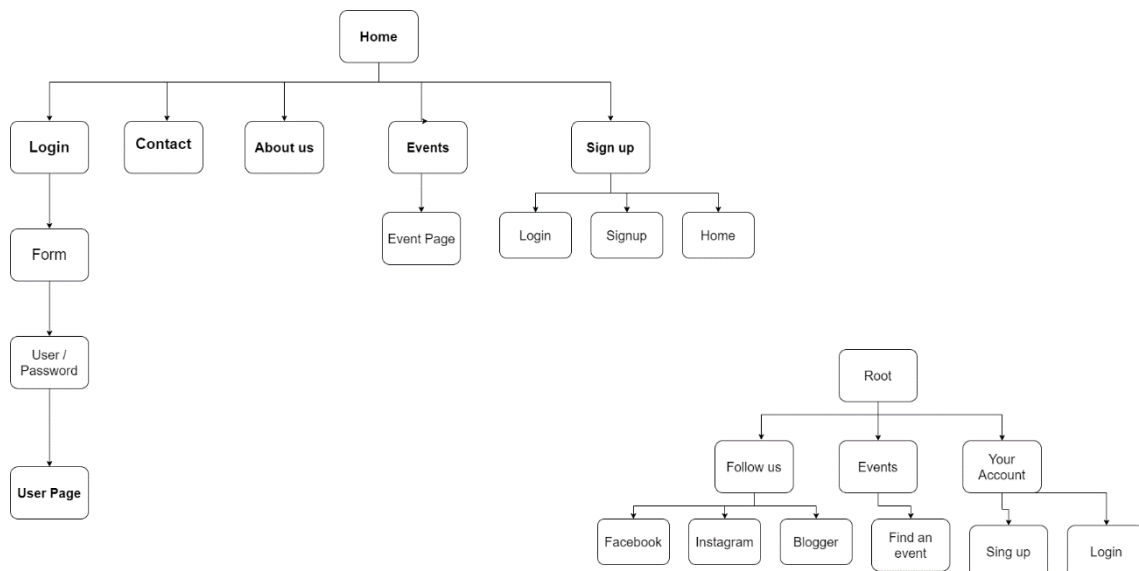
21. Conclusion

Conversa was an idea at first. As international students, we understand the effort that studying a new language abroad can demand. As IT international students, we thought about developing a tool that could help people around us practice the English language, at the same time as they build a community around them.

The whole concretization of this project was due to the commitment and planning that were early adopted as essential tools. We have extensively researched many fields and new technologies we were not familiar with, trying to document as much as we could since day one. The main backbone of the internet –CSS, HTML, and JavaScript, were languages that we had to develop since the start as well, and the progression of web-development-related subjects in the semester also aided us with the overall project.

Sequentially, other development challenges came into the picture: back-end development and deployment. We understand that the key to acquiring new skills was researching deeply and sharing tasks amongst us as much as possible. Communication was also paramount; otherwise, we would never have reached a substantial result with our project against the last developments.

It took us a lot of time, management, research, and effort to get to this stage of development. We had a schedule to follow since the planning phase, and we have stuck to the majority of our goals during that stage. It is consistent to state that planning was one of the core reasons that enabled this project completion. However, we as a group feel like we could have planned more in advance because the stage to run and test features took us more than expected. Therefore, we could have spent longer on it if we had allocated more time for it.

Another essential capability was the support of our supervisor, who always had the commitment and constructive criticism regarding our learning process. Throughout all of this, we could see our improvement as IT students and professionals, which was truly rewarding.

This project has ultimately strengthened our IT skills. It has brought us more experience in many specific fields: web-development from a frontend and backend perspectives, ability to research and acquire new skills, ability to work in a group, under pressure and supervision, and finally, create a robust documented development process.

We are glad to have attempted to bring people together to practice and develop English, which is a reality we relate to and have experienced as well. Supporting them with an

IT solution to showcase our practical skills is a deed that can undoubtedly build a stronger community during ordinary times, let alone in the new uncharted field that is to follow.

Here are some comments from people that have tried our app:

```
"The app looks really good,I like the visual. I would join and
be part of a group." -  Davi Crisostomo
```


```
" You guys did a good job! Conversa looks a professional app, I
like the fact that I don't need to download it."- Bruno Silva
```


```
"Well done guys! The interaction is nice.When will this be a
real thing? I want to join it!" – Niall Curley
```


We are proud of our work, and we would like to thank CCT Dublin for all the support, available tools, and infrastructure that led us here.

Go. Meet. Talk. This is *Conversa:* the community tool to practice English.

22. Individual Contribution Reports – Semester 2

Leandro Silveira

My first words could not be different then thanks a million to each one of my team members. This was, without question the most significant academic challenge I have ever faced. Working with a group of people who think completely different than me helped to develop various skills such as, conflict management, time managing, decision-making and problem solving. I also had to become more organized with my ideas and better plan how to execute them, so as how to clearer communicate with my pears when bringing up distinct solutions or feedbacks.

-The Idea. I came to Ireland to learn English and as many other language students, I struggled with talking to people to practice speaking. I had always thought of making it easier to new learners in the country to face this issue and now I had the opportunity to give this option to my group as the group project. There were two other interesting proposals, so we voted and the language app idea was the one chosen.

-First Document. In this first project proposal that the group produced, I was in charge of researching and writing what the problem area was, so as the innovation and the solution to this problem. Those two pieces of documents were a mix between researches and a lot of I had in mind from my experience as a language learner. This research is in **Chapter 1 items 2 and 3**.

-Web dev. This was really a team work to build and put all the web pages together. Patricia created a GitHub repository and added each one member as a contributor, so we started right away to create the html / css pages. There whole team was commit to work, but it made sense three of us to be responsible for coding (Richard, Patricia and I), while William concentrated in the Firebase and Lucas in the huge amount of documentation. In the end, I realized that I can add a lot in regards to contributing developing front-end. I cannot leave it without thanking Richard for the uncountable times he helped me to debug.

Individual commits   group commits
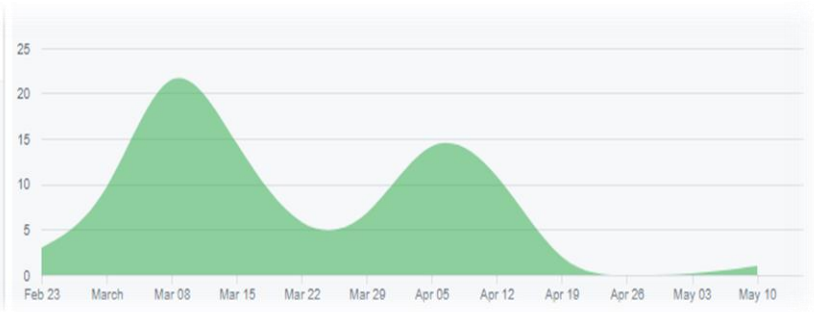
GitHub https://github.com/patifc/conversa/graphs/contributors visited 15-05-2020

-Social Media. In the same way as creating web pages from scratch, I also created two pages on social media to be added as an extra feature for our application. I believe that the functionalities and features of our app are comparable with websites, which are today in the market. It is a common strategy to combine social media with websites and that was the reason why I decided to create them.

-Researches. This project required extra knowledge from each member of the group. A large number of pieces of technologies, which were unknown by the members of the group were used to build this project, so it was crucial for all of us to perform various researches. These researches assisted us to base our decisions in regards to use a particular piece of technology or to go through a different path, so as to explain the reason for certain choices. I ran the following researches: Cloud Computing, html, Facebook fan page, Instagram Fan page, Firebase troubleshooting and Upcoming Features. Those can all be found within this document.

-Questionnaire. This was again a perfect team work example. William had just built the very first idea of homepage for our application. Patricia drew a website prototype based on this page and on suggestions given by the other group members. After a meeting that we had, I decided to write a questionnaire about the prototype and pass it on to our class mates, so we could have a feedback that would serve as a guide.

-Gathering Information. I would like to thank a good friend of mine Thomas Mcdonnell, who kindly dispose of his time to give me precious help with choosing a specific path. Was Thomas who firstly spoke to me about PWAs, explaining what it was and how to implement it. When Patricia was facing problems with implementing Android Studio, I could suggest switching to PWA, which was a suitable solution.

-Back-end – William was the one responsible to connect our webpage to Firebase technology and also to mongodb database. However, I also participated on this, together with the other members of the group. We got together using Google hangouts to discuss how to use this tool, researched together and used Cas from other subjects to help us connecting the technologies.

-Conclusion. Apart from lines of codes, researches, implementations of new frameworks and connections to Firebase and databases, I would like to thank each one of team members. We all worked very hard. I also would like to thank our supervisor Mark for guiding us to this point.

Lucas Freire

This is my individual contribution report.

I start saying that this project was only possible through the efforts and commitment of all the members that faced a specific challenge to complete it.

The first part of this project was carried out in the second semester of 2019, and therefore has a specific contribution report regarding that. There is also a table on the second page of this document that generally points out what points were carried out by each of the group members. This is a specific list that aims to point out the main aspects of my work concerning the second part of this project:

1. **Research.**

Through this document, I have researched a variety of topics. More specifically, I have actively worked on the following research topics listed below:

    1.1.   <u>Questionnaire</u> – Helped develop the main aspects to be researched with potential users of our website. As I Had worked before in the google form, we could combine experiences and develop ideas together for the prototype questionnaire.

    1.2.   <u>15. Database and Serverless Architecture</u> – researched this entire infrastructure to aid the development of our project. Facilitated the technical development with research into the topic, so we could understand clearly the objectives we had to cover and solve with this type of development strategy.

1.3. <u>17. Our Website</u> – Organized a series that would display to our reader the main aspects of our website as we developed it. Research display methods, architectures so that we could have a session that showed what we concretely had.

1.4. <u>Website Flow Schema Update</u> – Updated the schema regarding our new website flow.

These were the sections that were mainly created by my research and development, although all the members worked together more or less in all sessions of this document. However, I designed and edited this document from start to finish as I am the documentation manager of this project, which is going to be discussed in the next topic.

2. Documentation Manager.

I was the sole responsible for the creation, edition, correction, proofreading and all the aspects that comprehend the development of this documentation. I extensively worked on document identity, by putting all this content together. All piece of research that I was handled by any of the members was put to edition, correction, and cohesion, so that it could make sense in a broad sense when the examiners at CCT could look at it as a single project that would be solid and robust.

I made sure that all the pictures were properly formatted and had the right structure such as explanation and caption. I used editing software such as Grammarly to help improve the document writing and continuity. All the text presented here has been edited by me, except for the individual reports that were solely created by their given group member. All diagrams, schemas, tables created, design, document structure

3. Code (Front-end)

As the document manager, I only worked with more specific pieces of code for our project. I researched how to develop a modal for a website and developed it, so we could show the user an option to log in or sign up, and it was really enriching. I have worked on its CSS format, and deployment. I was able to take part in the front-end development with HTML and CSS mainly, regarding the code aspect of our project. Even though my focus with this project was the documentation development, I made sure I was aware of the code development process of our project.

4. Screencast

In this project I was also responsible to record a screen cast presenting the main technical aspects of our app. We have developed a script about the main technical details of our project, so I could record a video that would comprehensively present our code and functionalities to our viewer. I had to research and learn how to work with OBS Video Recorder, learn how to properly record videos and audio and learn how to build and develop a script even before I got down to recording it.

5. Conclusion

As the project's documentation manager, I focused on building a solid and professional document. However, I felt like in these challenging times we face, the completion of this project was mainly due to two aspects: our planning since day one, and above all our teamwork skills. We were able to share tasks and keep a focus on our specific objectives, without leaving others alone while developing their part. I would like to thank Patricia Correia for her management and efforts always present, working on the code and development with Firebase, and Database; Leandro for his help in all the research we had to carry out throughout this project, working on HTML development. Richard, for his coding skills that sure facilitated the whole process with frontend development. And Willian, for his solid help while developing parts of the structure of our app and aiding with research. I genuinely believe we worked as a team and that is how we managed to deliver this project. Final thanks to CCT Dublin and our supervisor, Mark Morrissey, who always supported our project by giving us constructive feedback and being always accessible.

Patricia Correia

To start I would like to say that this project was a huge learning journey for me, and I could see how much I change as a student, and how much I learned to work with a group.

From the beginning the group chose me as the Project Manager and I accept this task. I had no idea how much work would be involved in being a Project Manager:

1. **Create a plan**. The first challenge was to understand the end goal and create a plan where each contributor would make the effort for our desired end result.

For this to happen I research what would be the best plan for our team and you can find the results of this research in item **7.1 Project Approach pg12** of this document.

2. **The Risk Analysis** for our project was essential, because if something unexpected happens this would change the whole plan, and we actually changed it, because of the pandemic Covid-19.

    I research how the team could identify potential risks, and so we created a list of every possible risk and opportunity we could think of.

    In my research I determine the probability of this happen, and what would be the odds of a certain risk to occur and them the results.

    You can find the results of this research in the **item 7.2-7.5 pg12-15** of this document.

3. **Keep the group members motivated to work together and keep the communication.**

    During the final phase of our project we were at home because of the pandemic, and the team felt that we needed more meetings, so we could keep each other motivated, and keep our minds focus on our project.

    So one of my tasks, was to always check with the group when would be a good time for our online meetings with the group and with our supervisor.

    In order to keep the organization of the meetings, the team always work to present something new in the next week to our supervisor, so we keep the rhythm of the process.

    You can find more about the results of my search in the item **7.8-7.9 pg17** of this document.

4. **Share tasks.**

    This wasn't that difficult, the team was always engaged to each other contribute to our goal. My strategy to distribute the tasks was to ask for suggestions, in who would like to do what, and this was very efficient in our case.

    Every week each member had two tasks, and who finished first, would help the member that was struggling.

    You can find more about the results of my search in the item **7.6-7.7 pag15-16** of this document.

5.   Research.

We had a lot to research, this project was the first time that we were crossing platforms to build an app, we didn't know anything about PWA, Firebase, No-SQL database, so we research about everything, and talk about in our meetings to see if, every member of the group understand about the subject, and making sure that we were all at the same page**.**

Every research was edited by Lucas, he has really good English and his writing is excellent, so he helped the whole team to put the ideas together.

You can check more of the researches I participate in items **10. Brand Guideline and Website Development, 16.1 Firebase, 16.2.Progressive Web App, 18.Final Conversa PWA, 19.Conclusion.**

6.   Coding front-end and back-end.

This was a big surprise for me because my idea to help the team was to do the researches and maybe contribute with a bit of the design in the front-end of our product.

In the end my contributions were more than just a bit.

Github Insights

During the phase of creation Richard, Leandro, William, and I were spending lots of hours doing our best for the code, and I am very proud that I was able to learn and help with coding as well. The total amount of commits was 107 and I contributed with 41 of this, a part of the time I code in Visual Studio when building the PWA, and deploy on Firebase.

The code part was when the team really worked together, William would create a button Richard would fix the CSS of this button, and I would create the function for the button. Leandro would document the creation of the button, and Lucas would edit the document. Definitely teamwork!

7. Script for Lucas.

Because I was the member that worked more hours in the process of our site became a PWA, I wrote a script for Lucas to follow, during the screen cast, explaining the technical part of PWA and Firebase.

To conclude I just would like to say thank you to the team and our supervisor Mark who was always there to support us and help with any question we had.

Richard Welbert Silva Biagi

To begin, I would like to thank all my colleagues, members of my team who were really helpful throughout the development of this project. This was an incredible learning process and working with other four people was not easy, but it was essential. None of us would get where we got if we were alone.

Since the beginning of the project the group was engaged, committed, and worked together as a team. We discussed and chose the idea for the project, as well as the name and the logo. Patricia, our project manager, delegated our tasks and was always pushing us to deliver things on time and promoting meetings so the team could make decisions not only between us but also with our supervisor Mark, who was always prompt to help and to give us guidance in everything we needed.

During the first period of the development process of this project, I researched and developed the **project scope**, which can be found in the **Chapter 1, Part 5** of this document. There, I talked

about the importance of the English Language and some difficulties that people usually find during the learning process. I also researched about a platform that we found available on the
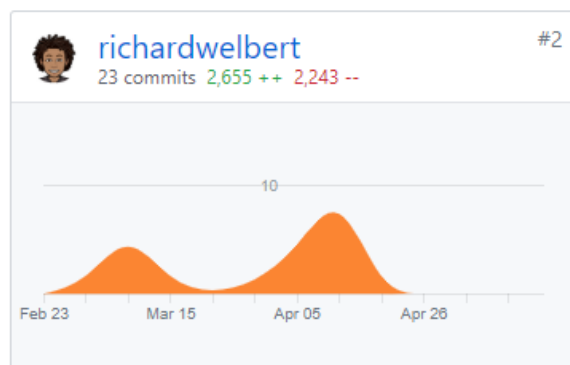
internet which similar to our idea, called *Meetup,* and explained how our project would be done. I have also described the **resources** we would be using to develop our application (found in the **Chapter 1, Part 6**).

On the second period of the development process, we started coding our website and I was more engaged with the code. As I feel more comfortable with coding than researching, I took care of the front-end development together with Patricia and Leandro. Patricia created a GitHub repository so everyone from the team could have access to it. Then we used Gitpod to write the code and save everything we were doing in the repository. Initially I was building and testing pages in my local drive before putting it into the code that was online, but then I have found it easier to develop straight into Gitpod and kept working on it.

I specially thank Leandro and Patricia who were always in touch and helping me when I struggled just like I helped them whenever they needed. Later on, while William, Patricia and *Number of GitHub commits*
Leandro were busy deploying our website into Firebase server, I was still fixing errors on the front end like a button that should be somewhere else or some content that should be responsive to other screen sizes. As none of us were experts in either HTML, CSS, JavaScript, Firebase or MongoDB, it was a big challenge to make everything work and look nice.

On **Chapter 2, Part 12.2** I researched about JavaScript in order to describe it and explain why we were using it in our application. I briefly talked about scripting languages and the functionalities it can provide to a web page, not only on the client-side but also on the server-side.

In the middle of the second semester of this academic year, I had to come to Brazil for a short period of time due to personal reasons and I would not imagine that we would face a pandemic disease outbreak that would keep me locked in Brazil more than previously planned or even think about finishing this semester over here, which I will be forced to do. But even being in a four hour difference time zone, I attended every meeting we had with the group - with and without our supervisor - and collaborated with the progress of this project.

Finally, I would like to thank Lucas for taking care of this document, formatting, correcting our spelling mistakes and putting everything together. I would also thank our Project Supervisor Mark Morrissey who was always guiding, helping, advising, pushing and pointing us to the right direction to make sure we were doing things right. Thank you to each

member of the group once again, we all worked very hard and did our best to make this happen.

Willian Antunes de Sousa

This Project was just possible thanks to the effort of Leandro Silveira, Lucas Freire, Richard Biagi and Patricia Correia that put the best of their knowledge, time, effort and commitment to this idea.

The Conversa Project came up from a initial brainstorming in which participated Leandro, Lucas Patricia, Richard and myself.
As soon as the project was chosen we set up a meeting to decide the best approach and steps that would be taken to achieve our goal and also to choose who would be in charge of delivering tasks and acting as a team leader, from a voting process Patricia was chosen and she effectively and efficiently carried out this duty over the past year.

Our Project manager was chosen and we scheduled our first meeting with him and for that meeting the group decided that we wanted to have something to show him and the task of making that first website page prototype was assigned to me and from there we started.

I then using HTML and CSS built a login and register page which would be the prototype page that we were going to present to our Project Manager
I did some research on colour and used it on the prototype page button and that colour gradient would later on be used as a base colour for our website and with the help of Richard ,Leandro and Patricia that prototype was upgraded as the project progressed.

The group decided to have a logo that represented the idea of the project and it would also be displayed on our application web pages and the word conversa beneath it I then presented some ideas for the letter fonts that would be used for giving style to the word conversa

On the documentation part I contributed by adding the Objectives and Project goals of the Project researching websites vulnerabilities and also documenting the first steps taken when our app was deployed from our local machine to firebase hosting server and I also helped Lucas on formatting the last bit of our first project proposal document Lucas who also among other tasks played an important role in applying consistent formatting to our documentation .

Leandro, Richard, Patricia were also responsible for creating and upgrading our front end application and from the moment we had our basic webs pages ready the next step was to deploy them to firebase server .

Reading and following the steps showed on firebase documentation section of Firebase application I then proceeded with the deployment of our web pages from my local machine to firebase hosting server.

And for the final task I am responsible for preparing the presentation in which we are going to demonstrate our finished project.

To conclude I would like to thank each member of the group for staying together and helping each other during this difficult phase we have been through.

I would also like to give special thank to our Project Manager Mark Morrissey for helping us to get through the challenges we faced along the way.

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