U.PORTO

FEUP FACULDADE DE ENGENHARIA
UNIVERSIDADE DO PORTO

ORBIT

Social Interaction System

Authors: Group 7
Project Title: Project Report
Advisors: Prof. Carlos Oliveira & Prof. Eurico Carrapatoso
Date: January 7^{th} , 2020

Contents

Orbit is an online platform, like a social network, where users can connect with someone random in a personal way and visualize it. Our main target users are travellers, teenagers and young adults, who are trying to find someone to ask for advice or simply connect with a stranger around the world. The project aims to take you and these people and connect them in a positive and intimate way so they can help each other. They can send messages to a person, across the globe and ask them for advice, or simply send a positive message. These connections will be represented on a 3D globe.

1. Introduction

People have always seeked interactions with other human beings and to belong to a social network. With the introduction of the internet, those interactions were taken to a higher level of complexity and dimension. Nowadays, there are a handful of online platforms that offer a social network, mostly based on proximity.

An experiment that gathered tweets from people all over the world based on what they were feeling, inspired us, as we saw an opportunity to create a platform, that would function like a social network, but instead of connecting people that are close to you, the user can connect with people all over the world who share a similar story. Although we found this could be useful to many people with the single purpose of connecting with someone who could understand what they were going through emotionally, by assigning a story to a location we could easily connect people from different places and increment our target user segments to, for example, travellers.

Upon further research, we've found that music could trigger thirteen key emotions [I]. So, to emphasise the emotion associated with each story, there's a sound assigned to each one of them.

The core statement of Orbit is to connect people all over the world. So, choosing a navigable 3D globe as the centerpiece of the users interface was an effort to better their experience and to reinforce that statement.

In the next chapters we will describe in detail the different stages of development of Orbit, since the idealization to the final product.

2. Development

2.1. Goals

The project's main goal was to create a different type of social media able to connect people all over the world through emotions. Aimed at travellers who wish to share their travel experiences or just people who wish to connect with someone who has experienced the same emotion as they, but in a different situation. We have the desire to connect with others in some way, we can easily do that through empathy emotions felt when listening or sharing memories with someone. With the help of ORBIT's website people will be able to tell a story about a life event and then be able to see another random stranger's story who caused that person the same emotion. From there users will be able to surf the globe from connection to connection and from story to story.

2.2. Methodology (Double Diamond Process)

2.2.1. Discover

After coming up with several ideas, it was decided that the concept of this social interaction project should be about people sharing their emotions through personal stories. Those stories would be exposed for other people to see and take as inspiration to tell their own.

2.2.2. Define

There was a discussion on what would be the best approach on the project's main idea. Even though we initially intended to create a real mural where people would share their stories and emotions, We took the professors' advice and our main intentions into consideration and came to the conclusion that making an online platform like some type of social media would be a better idea.

2.2.3. Develop

With our goal well established, the group moved on to splitting the project into different steps and assigning tasks through all the group members.

Firstly we defined and implemented the database, then we started building our website by connecting the database with the FrontEnd and adding our sound and visual effects. With the prototype ready we made a video to promote this project.

2.2.4. Deliver

With the website prototype ready, we presented it in class to the other groups and course professors. With all the documentation and marketing finished, we published the remaining conclusions and results, as well as the promotional video, in the project documentation part of the website, which could have been published apart from the main website, but we decided to put everything together.

2.3. Spectrum of User Experience

2.3.1. The Product

2.3.2. The Interfaces

We have a single digital interface, since our project is fully digital, our website.

To interact with our project the user can simply access our website and use common website interaction (click, scroll, etc.). We applied as many usability principles as possible (immediate feedback, simplicity, least amount of words possible, etc.) so that the interaction with our interface was as simple as possible.

The sound component is activated every time the user clicks on a story to see it's individual data. Depending on the story's emotion a certain sound is played.

One interesting interactive component of our website is the globe, it is a 3D globe that the user can rotate with the mouse and click on the countries, it is a very intuitive way of navigating through the different countries where the stories come from.

Everything was created by us, the sound, the visuals and the logics, with sound editing and synthesis software, Adobe products and CSS and Laravel, respectively.

2.3.3. The Communication

In this project we included many communication elements. Starting with the obvious one, the website. We decided to join both the project information website with our project itself, this means that, in the globe page of the website is where the user's can interact and socialize, and then, if they want to know more about the project, they can just click on the about tab. This page includes all the information about, not only the project, but also about it's communication elements.

About the poster, and we are focusing particularly on the poster because it includes a surprise feature that makes the project more fun and interactive. Our poster's have Augmented Reality, if the user downloads the app Artivive, he can place the camera on the poster and it will move. This also occurs to any appearances of our logo, they all have augmented reality and show an animated version of the logo. We also made many mockups of our posters to show how we would share our project, and of course, if these mockups were real, whenever we would encounter an Orbit poster, we could open up Artivive and see the animated version.

Our promotional video shows the main functionalities of our website in an engaging way and is displayed on our website's about page. It would also be shared in all our social media to attract new users to our project.

We created a facebook page and an instagram account. Our social media are, probably, the platforms that would reach the biggest number of people and would have immediate results in bringing people to our project since it's only in the distance of the click of a link. We didn't create the actual accounts, just to avoid any complication, however, we created mockups of the social media we would have. The purpose of having these media would be to, of course, share that our project exists, all its components (other media, merch, publicity), it's goals and its eventual partners, but, in this particular case, we would also share stories that the user's had put on the website and that had made a lot of connections, showing people what they could expect when visiting our project.

Besides the poster, we also designed t-shirts and flyers that could be sold or spread, respectively. Both the t-shirts and the flyers could and would vary in colors, since we have a modular visual identity.

2.4. User Experience Map

2.4.1. Intended

2.4.2. Real

The user's experience starts with the user finding our project through friends or social media when he feels the need to talk with someone for somewhere else.

After finding our website, the user will explore it, more specifically, explore the globe and it's stories. The user will feel the need to join our community since he understands that this was more or less what he was looking for and/or he wants/needs access to the chat or to telling a story, so for this to happen the user will create an account.

When the user already has an account, he will share his/her story or stories and see who he/she connects with. After reading the connected stories, the user will contact the storyteller through the chat button and talk about whatever he wants or needs.

Our real user experience ended up being very similar to the intended one.

2.5. Project description

2.5.1. Contents

Our project is a social platform that connects people through their emotional stories, all over the world, therefore, the core of the project is fully digital and the only physical contents are the promotional contents, like the t-shirts, the flyers and the Augmented Reality Posters. Having this in consideration, our main content is our website, that includes both our platform and our project information page, our other digital contents are our social media pages.

Now, our main platform can be split into different types of content: the user's profile, the globe free interaction with the stories, the creation of a story and it's connections, the following of a story's connections and the chat.

2.5.2. Visual Designs

We wanted to create a modern visual identity that would appeal to our target demographic, that is precisely what we did. As always, a visual identity means that, even if the person doesn't see the name of the project still can recognize it, and is because in visual identities, and specifically in ours, we created a set of rules that are used throughout the entire project. Starting with the fonts:

MONUMENT EXTENDED REGULAR:
TITLES AND IMPORTANT TEXT

Helvetica Neue Std Light Extended:
Secondary titles and running text

Modern fonts that match each other and are used according to the text's importance. Then the colors:

RGB 255 255 255 HEX #ffffff	RGB 0 0 255 HEX #0000ff	RGB 0 0 0 HEX #000000	RGB 255 0 0 HEX #ff0000

Since we were working with a fully digital project, we decided to go with RGB color mode and the classic RGB colors (except the G). Now, for titles and subtitles we join the fonts and the colors:

All our colored text only has stroke, giving it a more modern and attractive look. The stroke can have any of the colors of the identity. Now, given all these rules we came up with our logo:

Our logo alludes to the idea of orbiting a planet, so the word ORBIT surrounds the planet and makes this shape. Just as most of the other elements, the logo can have all the colors of the identity. Also, this spherical 3D shape can be used for other important text that isn't the project's name. For the logo we also created an animation of it rotating as if it was orbiting the globe, that animation can be found both on our website or through our posters, by using the virtual reality component with the Artivive app. Finally, the text can also be used to express other things, in this shape:

This kind of text is often used in social media to show the emotion that is connected to a story or, sometimes, to say the name of the project.

Using these rules we created all the marketing contents explained above.

2.5.3. Sound Design

For the sound effects we found appropriate to associate each emotion to a specific pop up sound, in order to favour the user experience.

For this we used common Sound Design techniques, based on the superposition, or sum, of sounds and their subsequent manipulation and processing, if necessary to achieve the intended results.

We organized emotions into four main categories:

Happy:

- Joyful (Short Pop Up)
- Amusing (Short but Happier)
- Triumphant (Heavily Orchestrated) (Even Happier)
- Erotic (bubbles, Saxophone)

Sad:

- Sad - d minor chord progression
- Scary - heavy strings reference to horror movies

Stressful:

- Annoying - Short Stressful Synth
- Energizing - (Electric / empowering)
- Defiant - (orchestra toms)
- Anxious - heartbeat

Peaceful:

- Beautiful (wink)
- Dreamy (voices) (strings)
- Calm (reverb)

In short, the definition of Sound Design can be given by the use or use of sounds, with the purpose of processing them in order to reach new sounds.

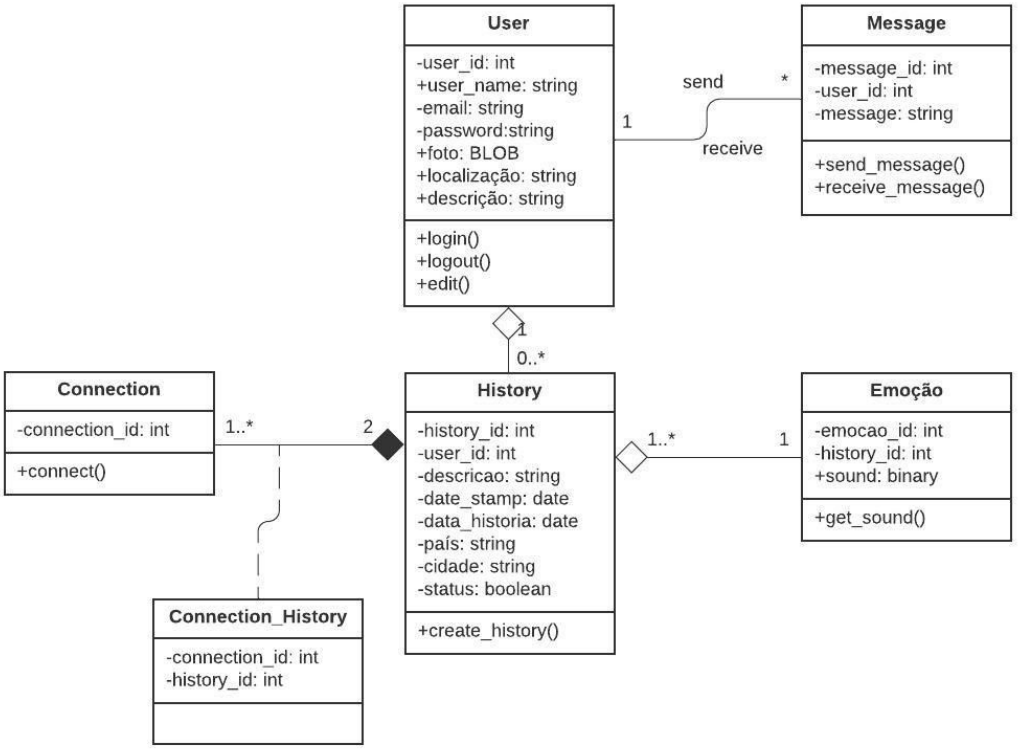
These were mainly created from scratch, through the use of sound synthesis techniques along with the use of public domain samples and also with MIDI instruments (Spitfire Audio - LABS), also in the public domain. Orchestration wise, it can be found some replicas of string quartets, synthesizers, piano, multiple percussion.

Since this is aimed to be developed for an App, we chose to make the sounds brief but attractive, for the user feel easily engaged with each emotion.

2.5.4. Technological Developments

In terms of technical development, we can divide our project into 3 parts: the database, the interface and the connections between the database and the interface.

This UML diagram describes in a broad way our website's main components and how it works, while also explaining our database components:



The Laravel framework was used, based on the PHP language, due to its robustness and completeness for the development of an application that involves a javascript front-end and stores data in a database.

For the interface, our interface is a website, therefore it is fully digital, so our main concern was to make it usable, without, of course, going away from our visual identity. It was a bit of a challenge actually, because the way our website works is a bit complex so we had to find a way to help the user understand what is happening. To explain better how we did this we present this scheme:

HAPPENING IN THE GLOBE	HAPPENING WITH THE USER	HAPPENING IN THE LIST
Connections of all the stories of that country	Had a country selected (by default or because clicked on that country)	List of all stories in that country
Connections of all filtered stories of that country	↓ Selects an emotion filter	List of all filtered stories in that country
Connections of all the stories of that country	↓ Clicks reset	List of all stories in that country
Shows the country of the selected/submited story with the story's connections.	Submits a new story or opens a story from the list and clicks on 'See Connections'	Shows the focus story and all it's connected stories.
Switches to that country and shows the connections of the connected stories in that country	↓ Clicks on a country with a connection	Shows all the connected stories on the newly selected country and the primary focus story
Connections of all the stories of the last selected country	↓ Clicks on a country without a connection, receives a warning of reset and accepts or the reset button	List of all stories in that country
Resets	Opens any story that is not from himself from the list and click on 'Chat'	Resets
----------	↓ A chat with the user that told the story in automatically opened	----------

← Loop to follow a sequence of connected stories

*All this can happen to any user, logged in or not, EXCEPT the submission of a story and the chat

So, this graph explains exactly what the user sees when they interact with the website. Other than what is shown on the scheme is a basic user profile with possibility to edit the profile and to see the list of all the stories that the user has submitted and respective data; also, we built the 'about' page that has all the project information.

The front-end was built with a Laravel engine called Blade, which generates HTML, CSS and JavaScript documents in a more dynamic syntax and is able to inject variables into the pages to be delivered, such as values in form fields. We used a lot of bootstrap components and personalized them to fit our website (with CSS for example).

Laravel uses a standard MVC (Model-View-Controller), in which HTTP/HTTPS requests are obtained through a route/endpoint and redirected by a controller (Controller), responsible for obtaining and performing all operations on Databases and manipulable as entities (Model) and ready for data delivery (View) in JSON format, whether it is a RESTful API route or an HTML page.

The interaction with a database is optimized with the use of a Laravel ORM (Relational Object Mapping), Eloquent, which allows to obtain, create, edit, edit and many other operations with the data in the databases in a way that optimizes the interaction between entities and their attributes. In this way, Eloquent abstracts the specifics of the database and allows the programmer to use the standard commands in the application's drivers to manipulate their data.

Likewise, the construction of the database is performed by Laravel himself, which allows us to describe it as tables and their attributes, mapping as entities, through its component called Migrations.

3. Future Improvements

As future improvements we would like to fix some issues we had with the website. Some are very simple things such as: in the user profile being able to review some of our stories and see their connections; some usability aspects; more control of the sound components; fix some responsiveness issues and correct some minor bugs.

For more complex correction: we would like to add more filters and, consequently, more data to each story; having the possibility of adding more than one user to a story; text and fix any scalability problems (like showing too many storys or too many connections); enhancing accessibility, making it more international; etc.

Overall we would like to make our website more scalable and stable so it could handle the quantity of people we think it would attract.

4. Conclusions

In conclusion, in this project, despite the ambitious ideas that existed initially, we can say that the website presents itself in a functional way and can be used by those who are interested and want to tell their story to the world, thus connecting those who need opinions from others.

As we said before this was not an easy task to uphold, the amount of technical difficulties this project presented and the limitations we had show us in the end the amount of effort needed to make a website like this.

References

I. News, Berkeley. *Ooh là là! Music evokes at least 13 emotions. Scientists have mapped them*. (January 6, 2020). URL: https://news.berkeley.edu/2020/01/06/music-evokes-13-emotions/#:~:text=The%20subjective%20experience%20of%20music,defiance%2C%20and%20feeling%20pumped%20up

II. Otwell, Taylor. *Laravel*. (January 11, 2021). URL: https://laravel.com/

III. *Artivive*. (January 11, 2021). URL: https://artivive.com/

IV. *Dia Studio*. (January 11, 2021). URL: https://dia.tv/