

# A3 - Storyboard and Lo-Fi Prototype

SPACECOM



**Politecnico  
di Torino**

# MEET THE TEAM

Who are we?



**SIMONE PANIATI**

## *COMPUTER NETWORKS AND CLOUD COMPUTING*

I am a 23 years old student from Chivasso, near Turin. I am passionate about computer networks and everything related to the internet.



**PETER ALHACHEM**

## *ARTIFICIAL INTELLIGENCE*

I am a 22 years old student from Beirut, Lebanon. I am passionate about mathematics and quantum physics. I hope to transmit my love for science through work and academics.



**GIUSEPPE LAZZARA**

## *SOFTWARE*

I am a 24 years old student from Catania. My greatest passions are computer engineering and music. I aim to transmit my musical creativity to the realm of computer science.



**FRANCESCO ROSATI**

## *SOFTWARE*

I am a 23 years old student from Latina, near Rome. I am passionate about programming and I hope I can make an impact on the world through it.


# SpaceCom - *“Where internationals become locals.”*

“SpaceCom” is a conjunctive abbreviation of the two words “**Space**” and “**Community**”. The team members have set on this particular name because it englobes two core principles of our devoted work. With “**Space**”, we intend to provide an area with all the necessary informations that will help our targeted party in their integration process. With “**Community**”, we plan on building a bridge between international students and their new societies in hopes of unifying the diversity present in a community.



# Addressing the problem

Throughout seven interviews conducted in our introductory study, the interviewees have expressed their concerns over several problems which, in their opinion, have held them back from a smoother and easier integration into their new place of living. The team has signalized a redundant pattern through all the targeted interviews within the subject of ambiguity over finding informations about topics that were specified by our interviewed audience. For this reason, the team members have decided to tackle the following problem: **The difficulty in collecting informations concerning local events, news and initiatives.**



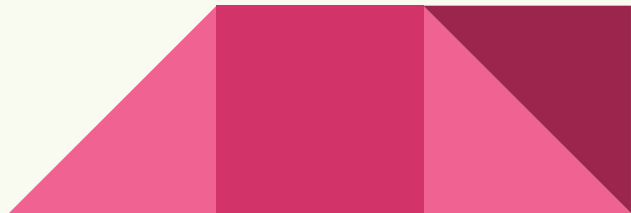
# Presenting the solution

Based on some thorough brainstorming demonstrated in our previous study, the team members have narrowed down a plethora of solutions to a single one which, from our standpoint, presents a concrete answer to the problem we have mentioned in a preceding point. The solution presents the following: **A category-based “Digital Wall”**; This platform will **centralize all needed information** into one place with a **personalized user experience** over preferences, likings and constraints.



# Establishing the tasks (I)

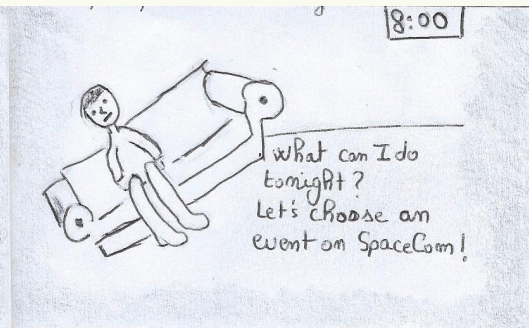
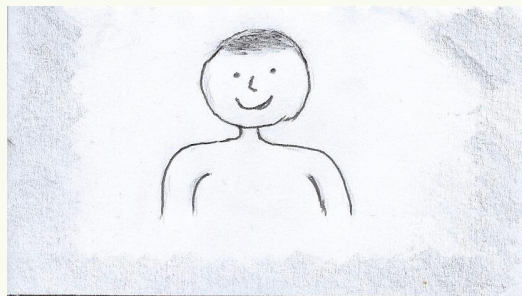
- **Browsing the digital wall to discover new events (Simple):** This task simply englobes scrolling the platform in the aim of finding appropriate information. During the performance, announcements in the form of images and / or texts will be displayed with their appropriate descriptions.
- **Filtering events based on specific characteristics (Moderate):** This task presents the access to narrow down informations based on even more specification. The filters could represent : recency (date selection), price, categorical (events, sports, study groups, offices...), etc..



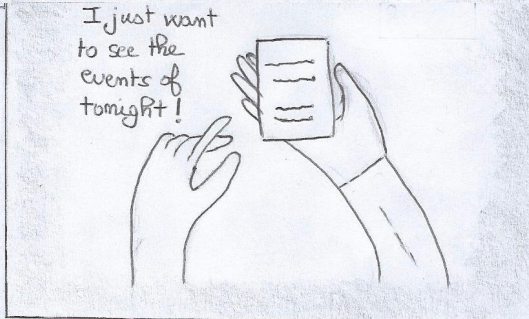
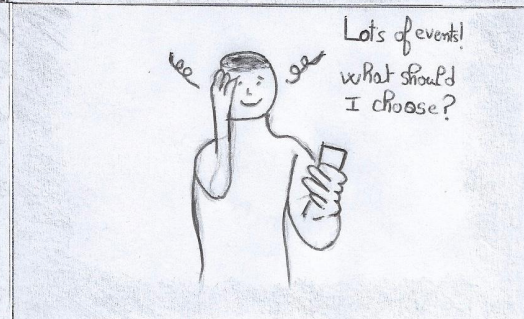
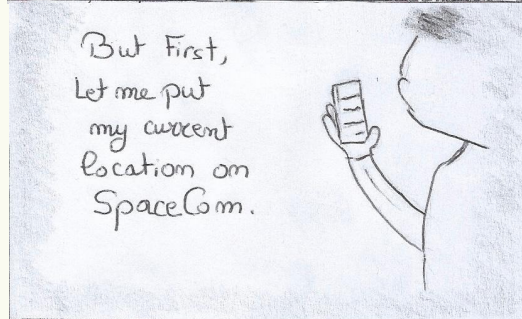
## Establishing the tasks (II)

- **Reset interests of the platform (Complex):** Since the platform will be referenced by a survey taken at the initial point of setting up the digital wall, the platform will display the information based on the interests of its user (country of origin, language of display, focused categories, unwanted posts...) and in order to change these preferences, a specific section should be accessed and confirmation of these changes should be needed.





Comor, 24, law student from Ireland





# Storyboard - Why?

In spite of the enhancement of the level of generalization and complexity in our study, the team members have opted to use a storyboard as a mean of clearness and simplification for an elaborated understanding of our solution. Through it, we aim to **represent a character** that describes our targeted audience as well as **proposing an illustrative solution** by the means of a centralized platform. We have also aimed to **state some of the featured actions** that will facilitate the understanding of the solution. By way of a story, we were able to answer few concerns on the process of integration, the main goal of this study.



# Storyboard - Strengths

With the implementation of our storyboard, the team was able to identify strong arguments that present an emphasis on the matter of the storyboard and provide further clarity to some ambiguity that might have been encountered in the past.

**The strengths** are presented as the followings:

- **Covering the designated tasks:** The storyboard clearly elaborates the tasks established previously and regardless of their complexity, each one was portrayed by a significant drawing which explains them with a clearer intention.



# Storyboard - Strengths

- **Identifying our targeted community:** In the first two sketches the team members have made sure to represent their targeted people through a brief introduction of the character and a further explanation of his purpose in the following sketch. This clarifies the representation of our study and the people it concerns.



# Storyboard - Weaknesses

On the other side, the storyboard implemented does not fully represent the complete detailed motivation behind our project but identifies an overview of what we intend the platform to include. Based on this analysis, the team has concluded some imperfections that we intend to ameliorate in the next process which includes prototyping. These **weaknesses** contain:

- **Specification of the story in the sketch:** In fact, the storyboard represents a very narrow situation in within many diverse scenarios, and due to the limitations and brevity of what a storyboard should accomplish we were unable to cover all the possibilities that might be also considered as important in our project.



# Storyboard - Weaknesses

- **Small Discontinuities in the story flow:** The flow of the story shows a bit of discontinuity when it comes to the actions represented, although the story is well organized and correctly structured, it is somewhat visible the gap passing from one sketch to another. This decision was taken based on a trade-off between visualizing all the tasks which we have considered critical to implement and having some discontinuity.

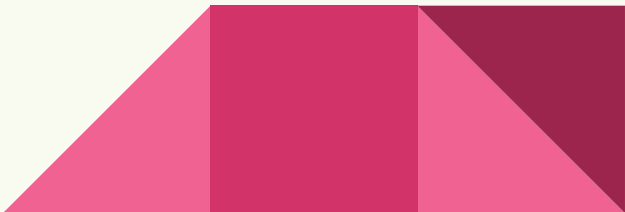


# Storyboard - Summary

The storyboard implemented, despite of some defects, **serves as a well-rounded representation of the tasks that are essential for the users** to catch an overview of our final solution.

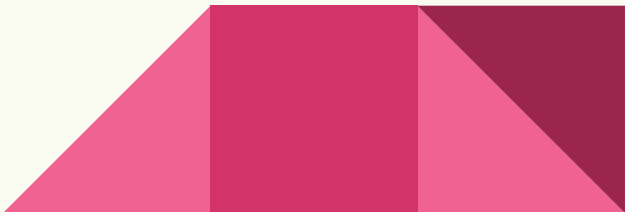
As a matter of fact, the storyboard **presents an easy way to comprehend the intentions behind our centralized platform** and it typically serves as a representation of a **solution to critical user needs concerning the diversity in finding information and the ambiguity in its communication.**

By materializing this solution into a story, we were able to **implicitly represent a way to solve the problem of the integration process.**



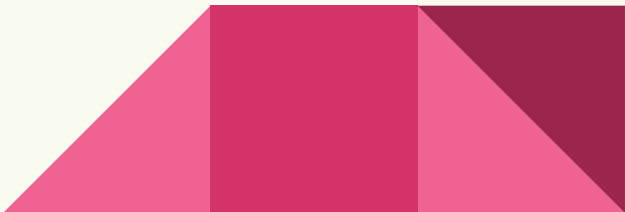
# Modalities - Overview

In our transition from a theoretical perspective to a more practical one, the team members have decided to explore some modalities that will render all our explanations a concrete meaning. The modalities considered include the possibility of **Artificial Intelligence** implementation and this motive was crucial for their examinations. The modalities that have been included are four: **Mobile-based application, Speech-based chatting bot, Interactive SmartWatch, Web-based application.**



# Modalities - Selected

After a thorough investigation, the team members have settled on the implementation of two prototypes based on **Speech-based chat bot and Mobile-based application**.

- **Mobile-based application:** The team were ultimately challenged to choose between a mobile or web based application but based upon the community we desire to target and deducting from the interviews conducted in previous studies, people are more likely to use a mobile-based application rather than a web one, which coincides with our goal to reach the most people possible.
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# Modalities - Selected


- **Speech based Chatting bot:** Through speech recognition, we aim to provide diversity in the approach of our topic. With using the speech feature in the prototype, we are able to include a considerable amount of people who identify through this mode of functionality that, from their reflection, is easier to interpret and better to use. Without neglecting the fact that through this modality we showcase a very popular and important feature of Artificial Intelligence and its interaction with humans.



# Prototype #1 - SpeechBot (I)

The motion of our main character in the storyboard showcase a **direct connection to this prototype**. As a matter of fact, the **dialogue that is introduced in our storyboard** explains the possible presence of a prototype that is speech based and that interacts with our determined user.

**The tasks**, on the other hand, are partially **represented through the crucial ones that are cited previously** through a contextual prototype that invokes a chat as a mean to present them. However, the team members have find it somewhat **complex to represent the tasks on a speech based platform** that requires **infinite possibilities and scenarios**.

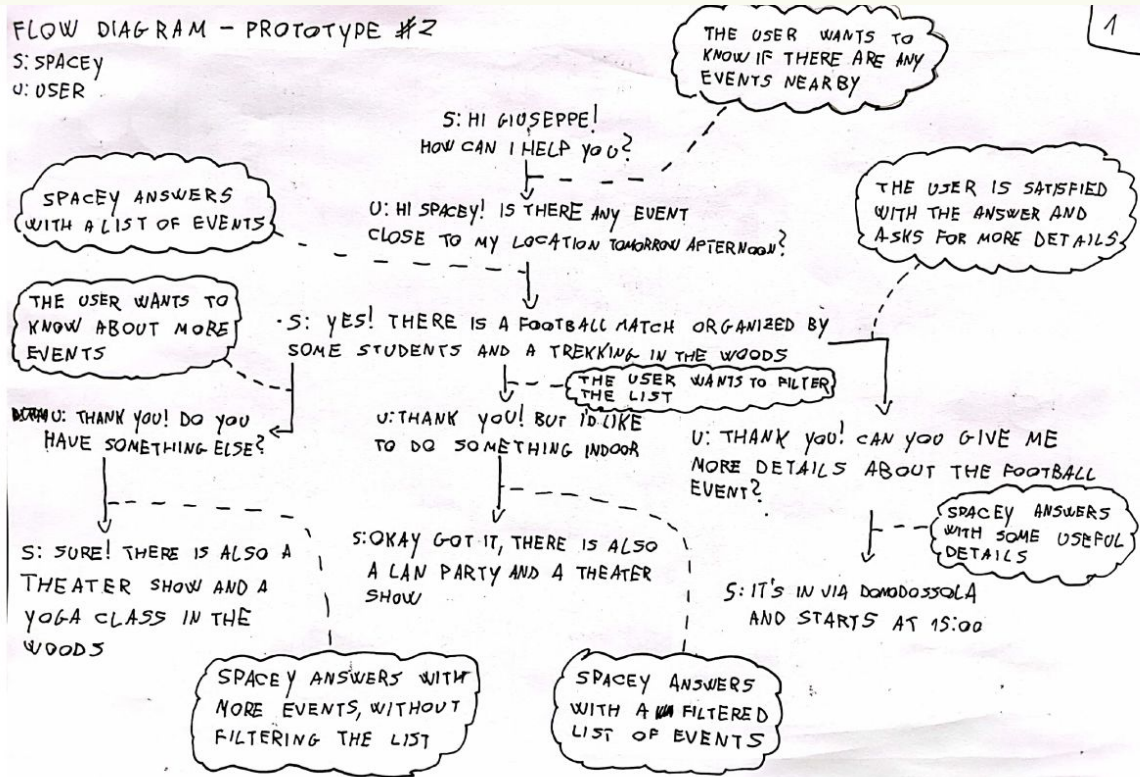


# Prototype #1 - SpeechBot (I)

## FLOW DIAGRAM - PROTOTYPE #2

S: SPACEY


U: USER



# Prototype #1 - Pros & Cons (I)

After a deepen analysis of our prototype's features and functionalities, based on simulated trials and performed through the "Wizard of Oz" prototype techniques, the team members were able to come up with the following advantages and disadvantages.

The team members were able to reflect on the promising aspect **speech recognition is linked to artificial intelligence**. As a matter of fact, SpeechBot represents **a simpler interaction from a user point of view** with **less learning expectancy** with respect to other applications that might require extensive training.

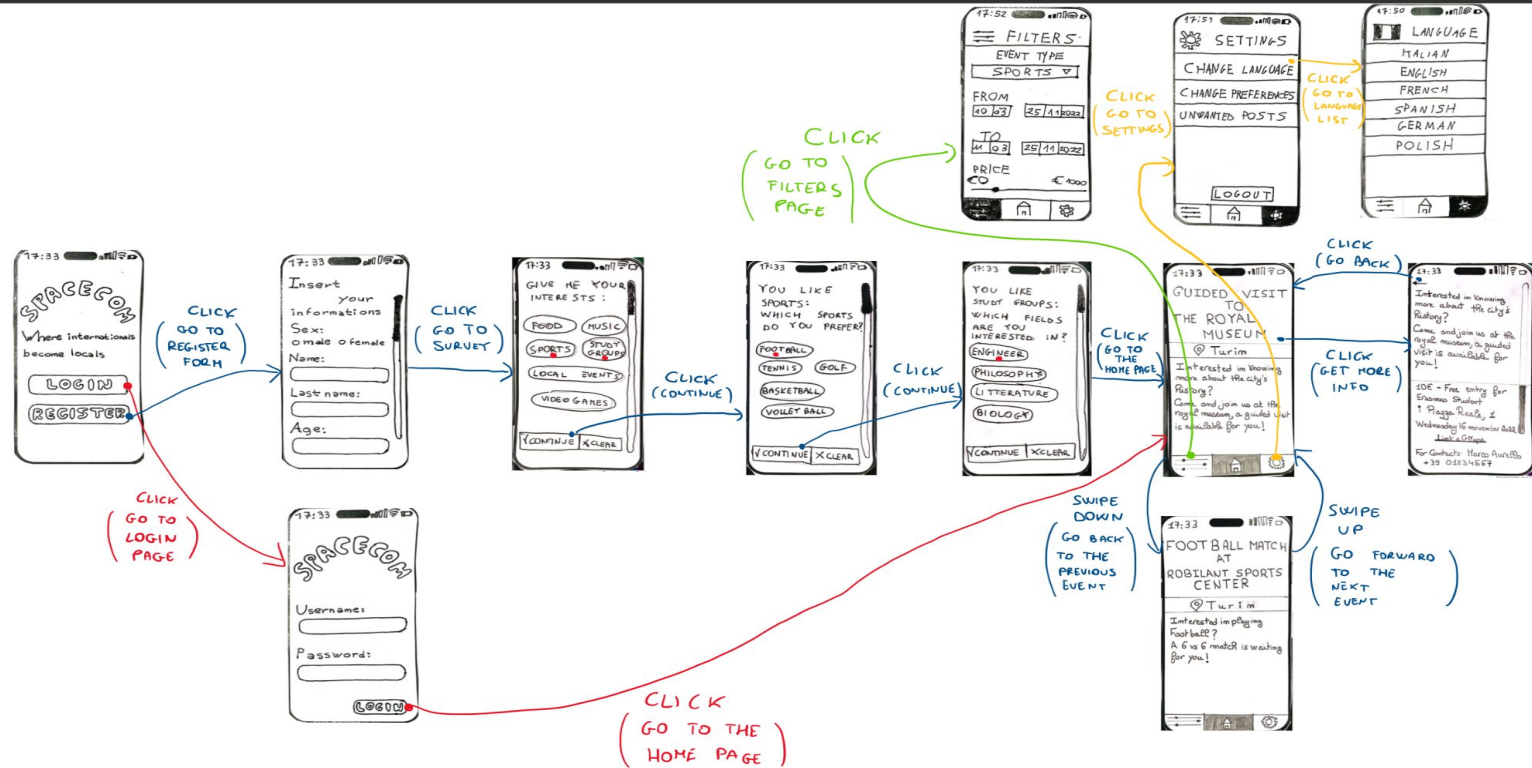


# Prototype #1 - Pros & Cons (II)

On the other hand, SpeechBot requires a **critical implementation with respect to the keywords needed and their appropriate responses** which complexify the process of deployment. And in terms of performance, SpeechBot is instructed to **display one event with each speech iteration** and thus **slow down the process of finding the optimal response** for the users, presenting a boring experience for them. Adding to that, **the prototype is unable to handle tasks that necessitate the intervention of other senses** such as the change of users with the SpeechBot.




# Prototype #2 - Mobile App (I)



## Prototype #2 - Mobile App (II)

The prototype visualized in the slides above portrays in a **direct way the flow of action explained inside the storyboard**. In fact, the pictures drawn in the storyboard represented a **preliminary idea on what we wanted to convey through our mobile application**.

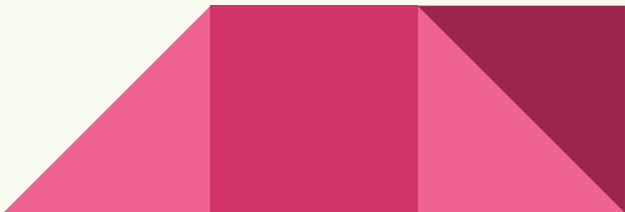
In terms of tasks, the team members find it **crucial to include the features that were stated in a previous slide** regarding their importance but also **focalized on implementing diverse ones** to englobe all possible scenarios our targeted people might find useful, and **easy to access through perceptual and haptic means**.



## Prototype #2 - Pros & Cons (I)

After further experimentation of our prototype's functionalities and services, the team members were able to conclude the following advantages and disadvantages.

The team has focused on the importance to **parallelize the tasks that the application can handle to provide the user a better experience** and a more detailed mode to access its features. In Addition, the mobile app provides a **faster and simpler way to access the information** rather than waiting for a SpeechBot's response.





## Prototype #2 - Pros & Cons (II)

On the other hand, users might find the **process of interacting with the application a bit challenging**, especially within the first attempts, which may require some period to understand its full functionalities. It is important to annotate that **the team members have not found other crucial holdbacks** that might interfere with the experience of our targeted users.



# Choosing a Prototype (I)

Based on the previous analysis of the advantages and disadvantages of both prototypes, the team members have reflected on the **overlying complexity** that a SpeechBot can have, especially when it comes to **dealing with speech recognition** and the environment it surrounds. Although the first prototype presents a clearer mode to exploit the artificial intelligence side, the team members have opted to **develop the second prototype related to mobile application and its services.**



## Choosing a Prototype (II)

Concerning the **inclusion of features from SpeechBot to the mobile app**, the team members have settled on the option of **portraying a speech based interaction** that will render the user capable of substituting touch screening interaction with a voice one. However, **this feature**, in our opinion, **does not match any crucial user need** that was found in the needfinding phase and keeping it **will not affect the integrity of our prototype**.

