

# Human Computer Interaction

A.Y. 2018/2019

*PintFunder*

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# How to reach the goal

To do so, the app provides a list of beers offered by each pub, describing them in a very detailed way, for example:

- description
- alcoholic percentage
- nationality
- history about the beer and the brewery
- price
- ...

# Objective

PintFinder wants to be an instrument for:

- *Old-school beer lovers* to find and enjoy their favourite beers
- *Newbies* to discover the incredible world behind the beer: new tastes and some history about them as well.
- *Pub Owners* to add their own activity and menu.

# User Profile: Expert

<b>Age:</b>	27+ years
<b>Gender:</b>	70% male
<b>Job Title / Education:</b>	Employee, Workman...
<b>Location:</b>	Anywhere in Italy
<b>Income:</b>	\$10,000+ /year
<b>Technology:</b>	Smartphone friendly
<b>Family:</b>	Single or married

# Persona: Georg



## Background

- 32, male
- Hamburg, Germany
- Bachelor Business
- Self-confident
- Religious

## Motivations

- Became Manager
- Have a big family
- Come back to Germany
- Get a Master in Business
- Learn how to make Pizza

## Frustrations

- Not very integrated in the community
- Too much time spent in the office
- Missing his family

## Lifestyle

Georg is an employee at CapGemini in Milan. His main task, as a counselor, is to take care of company customers by giving them the best advice to grow their business.

Since he was a child, one of his hobbies is practicing magic tricks. He found out it is a good way to make new friends as well.

As a German, he loves beer and he participated to many beer festivals all over Germany.

# Scenario

*It is Friday night, after a long shift of work, he just wants to have one of his favourite beers with his colleagues.*

*They don't care too much about beers, but Georg ,as a German beer lover, every time he steps into a Pub he struggles in finding what he was searching for: an American amber lager beer.*

*This time he decided to use PintFinder for checking in advance nearby Pubs with the beer he would like to drink.*

# User Profile: Newbie

<b>Age:</b>	16-26 years
<b>Gender:</b>	70% male
<b>Job Title / Education:</b>	Student (High School, University...)
<b>Location:</b>	Anywhere in Italy
<b>Income:</b>	\$0
<b>Technology:</b>	Smartphone friendly
<b>Family:</b>	Single



# Persona: Angelo

## Background

- 23, male
- Norma, Italy
- Computer Engineering Student
- Not very self-confident
- Responsible

## Motivations

- Empathic
- Up to date with the latest technologies
- Researching in IT field
- Hang out with friends
- Good relationship with parents

## Frustrations

- Stressful because of studying
- Reading books
- Spending a lot of time at home
- Sedentary life-style



## Lifestyle

Angelo is a student from Sapienza University of Rome. He is planning to work in Artificial Intelligence company in Google in California. He has a huge passion for soccer but he doesn't play.

He just loves watching matches on tv, especially for supporting A.S. Roma.

He is always up to date with computer and smartphone technologies. Angelo usually spends his time with friends going to pubs to watch mainly sports of any kind.

# Scenario

*It is Friday afternoon and Angelo with his colleagues have just completed the Algorithm Design lecture.*

*Since tonight his favourite team is going to play the Champions League final in Bruxelles, he wants to enjoy the match while drinking a good beer with his friends. He doesn't want to get too tipsy to not miss any details that is happening on the pitch.*

*Angelo runs PintFinder and searches for the closest pub with a wide range of light beers. At this point, he finds the Lancelot, a pub offering lots of Belgian beers and he decides to go there like lucky charm.*

# User Profile: Pub Owner

<b>Age:</b>	25+ years
<b>Gender:</b>	50% male
<b>Job Title / Education:</b>	Business Owner
<b>Location:</b>	Anywhere in Italy
<b>Income:</b>	\$0 - \$20,000/year
<b>Technology:</b>	Smartphone friendly
<b>Family:</b>	Single

# Persona: Maria

## Background

- 27, female
- Roma, Italy
- Accounting diploma
- Very self-confident
- Responsible
- Tattoo lover
- Geek

## Motivations

- Empathic
- Loves chatting with friends
- Expand customer base
- Make her own beer
- Very friendly

## Frustrations

- Stressful because of business income
- Hate some kind of customer
- Spending all day inside her pub

## Lifestyle

Maria is owner of PubAmo, a pub with a wide selection of beers. She loves watching movie and drinking beer, so she has just installed on her pub a 4kHD tv. She is a tattoo lover: she has about 20 tattoos all over her body and she is even planning to go for more.

She is planning to extend her customer base but she doesn't know how to do it. Maria knows everything about beers and she is planning to create her own brewery.

Maria has a lot of friends because she is very nice with everyone.



# Scenario


*It is Wednesday night and Maria is thinking about how to make the Pub more crowded during the week.*

*She would like to promote it in such a way that as many people as possible can be aware about the beers offered by the Pub.*

*Since she already tried using traditional methods as leaflets, without receiving the expected feedback, she decides to try a smarter approach.*

*So she runs PintFinder and, logging as a Pub Owner, she puts her Pub on the platform providing all the information about her beer menu.*

# Inspect and analyze competitors

	The Pub Finder	Pub Finder	Tipple	Pubster
<b>Unique Features</b>	Adding Pub mechanism left to the admin	Suggestion Mechanism	Gives directions for reaching a Pub	-Offers sale according to pub owners -Qr system implemented
<b>Strengths</b>	Quite intuitive	None	Good Review System	Minimal interface and interaction
<b>Weakness</b> 	Too simple interface (skinny)	-Too much outdated design -No feedback service	Very confusing interface (too many ambiguous buttons)	Closed Servers and no supported anymore
<b>Downloads</b>	1000+	10.000+	5000+	10.000+
<b>Satisfaction Score</b>	3 / 5	2.8 / 5	4.8 / 5	4 / 0
<b>Add new Pub</b>	Y	N	Y	N
<b>Directions for the Pub</b>	N	N	Y	Y
<b>Automatic closest Pub location</b>	N	Y	N	Y
<b>Favourite Pub list</b>	Y	N	Y	N

# Inspect and analyze competitors

All these Apps are not focused about the beers offered by the Pub but just on the Pub as a public place for enjoying free time. None of them is about giving to the user a beer prospective. Instead, our aim is to have a **beer-centered** service.

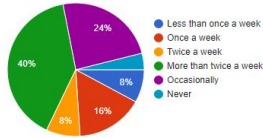


# Questionnaire analysis :

## User knowledge and preferences

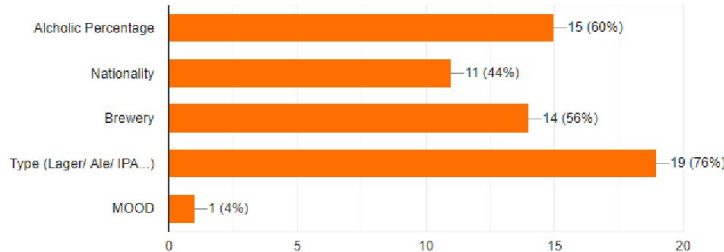
How often do you go in a Pub for a beer?

25 response



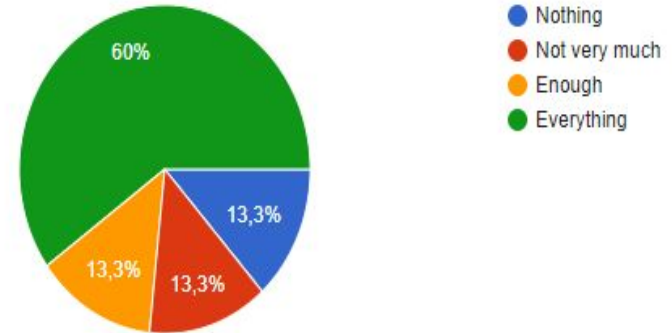
What factors do you consider when you choose a beer?

25 response



How much do you think to know about Beer?

15 response



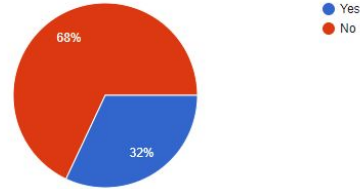


# Questionnaire analysis :

## Pub Owner questions

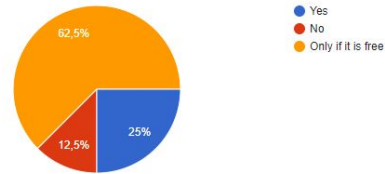
Are you a Pub owner?

25 risposte



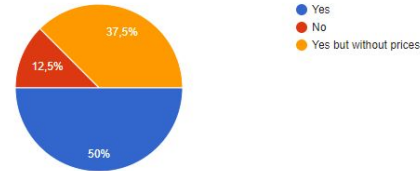
Would you like to have a platform for sponsoring your Pub?

8 risposte



Would you share your beer menù with all information (description, nationality, prices...)?

8 risposte



# Questionnaire analysis :

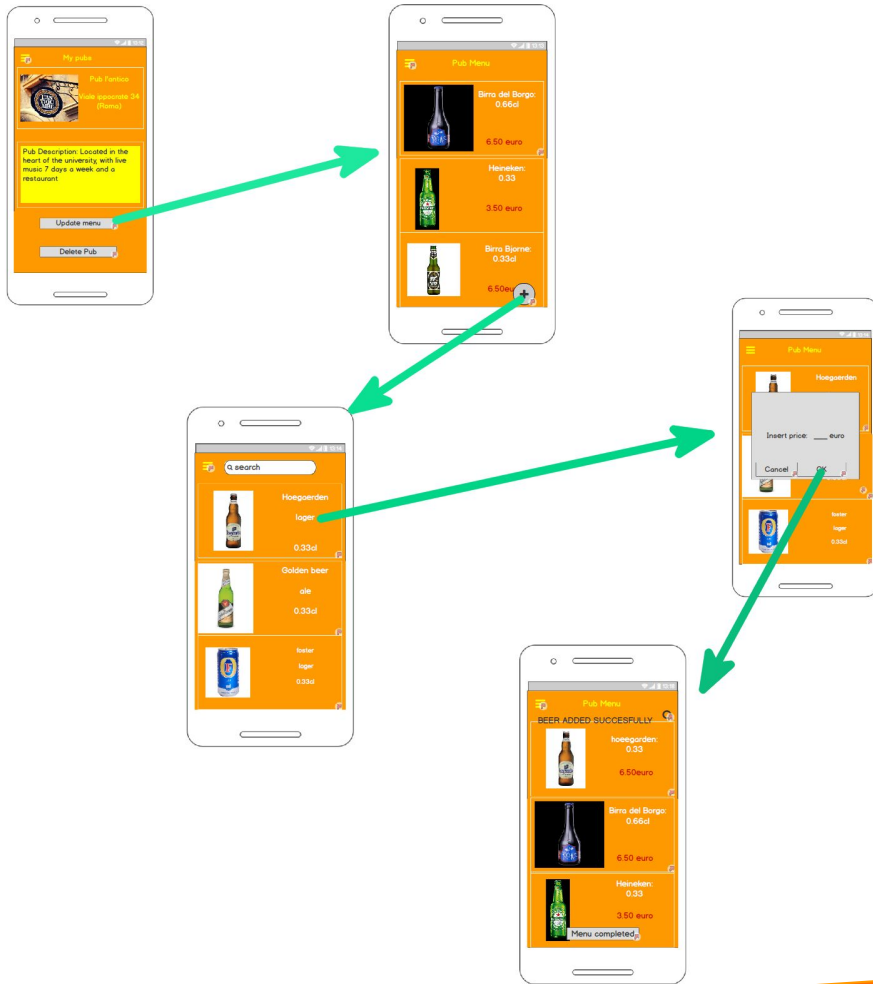
## Conclusions

From this questionnaire it emerged that:

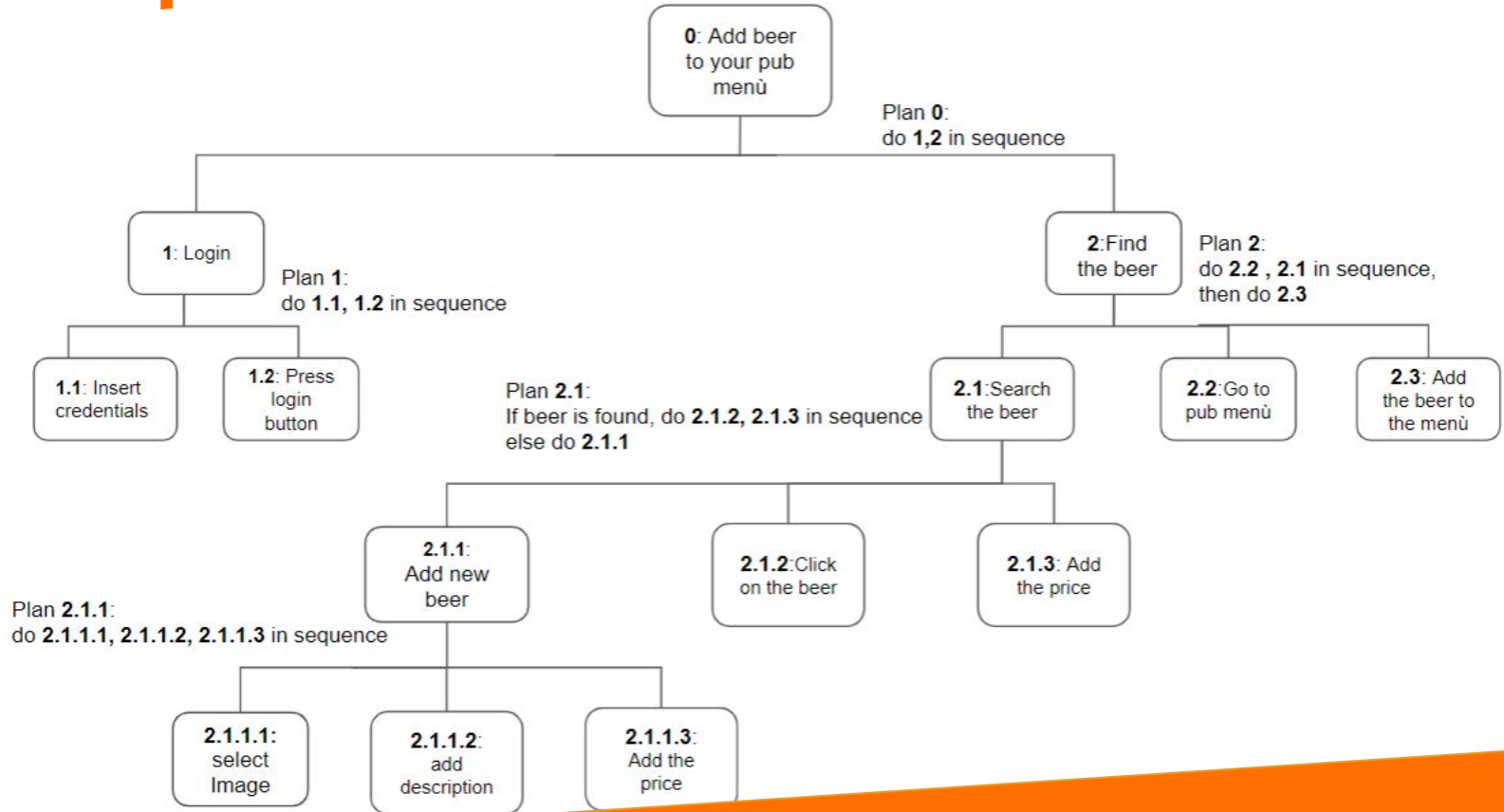
- Every user uses a different scale to choose the right beer.
- There is a real needs of an application beer-oriented.
- Not all those who call themselves experts actually are.
- the majority of pub owners wants a free application to share information about menù and beers

# Task 1

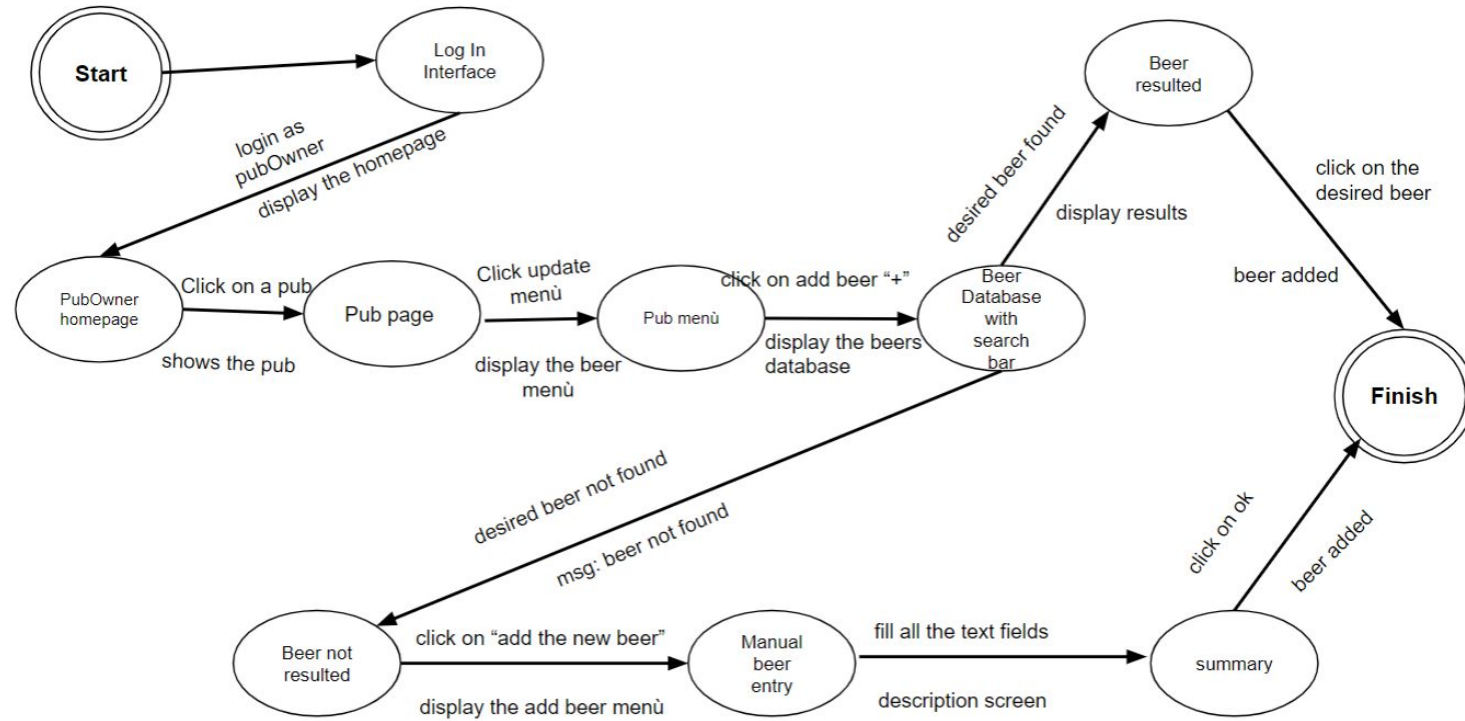
Steps to add a new beer in pub owner menu



# Task 1 : A pub owner adds a new beer to his menù

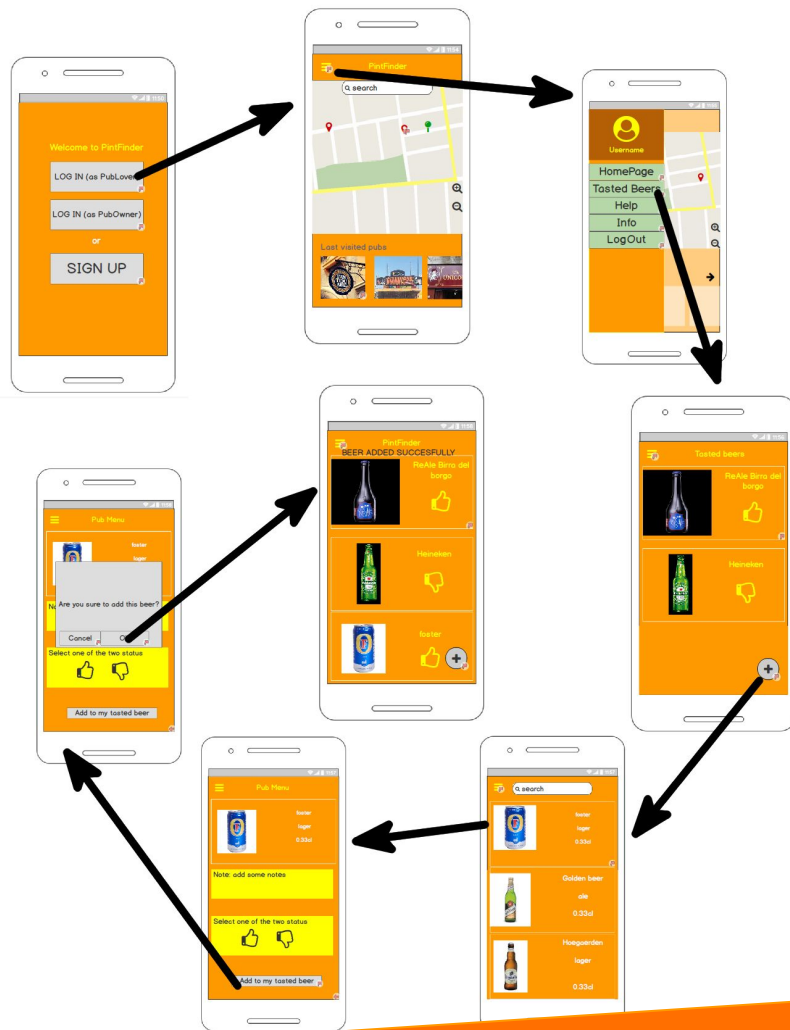


# Task 1 : A pub owner adds a new beer to his menù

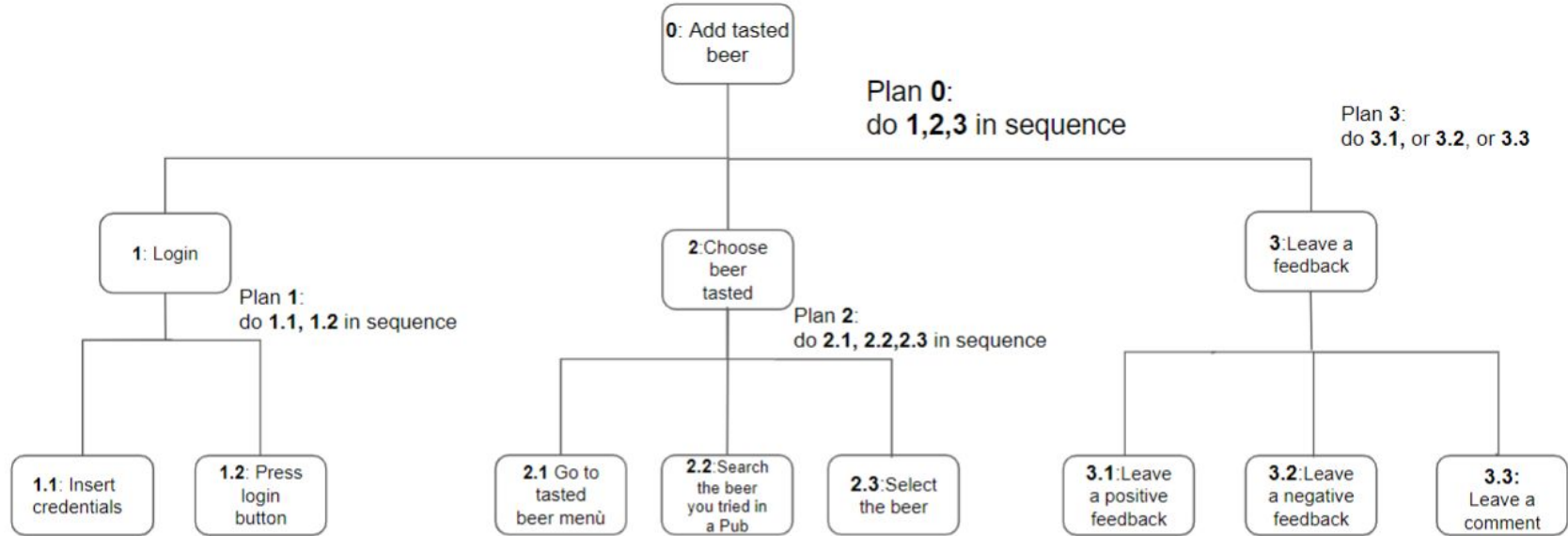


# Task 2

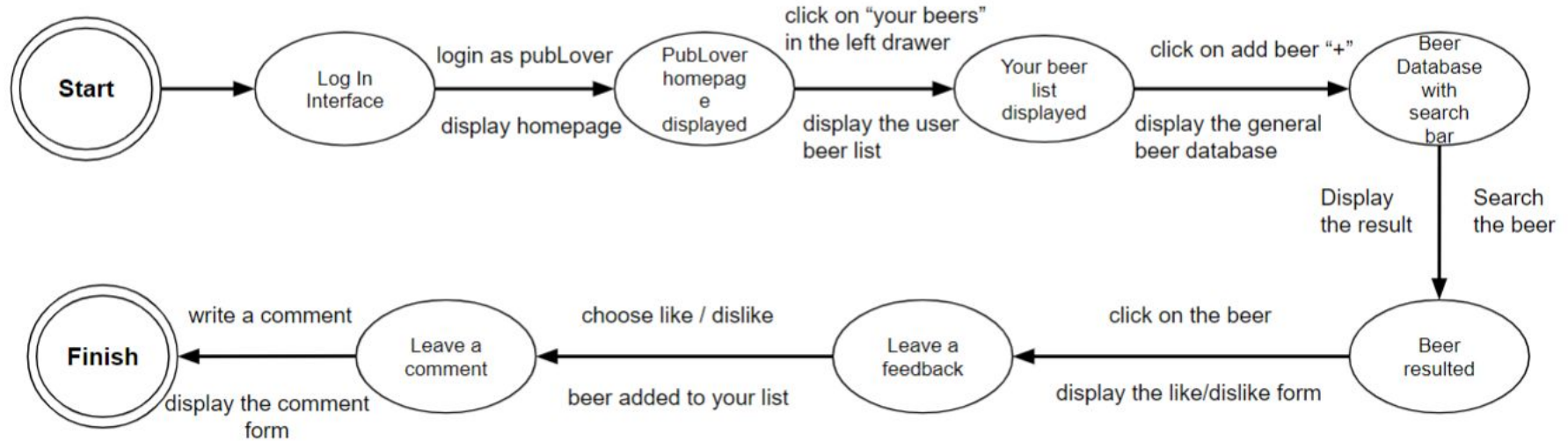
Steps to add a new  
beer in the *tasted*  
beer menu



# Task 2 : A pub lover updates his *tasted beers* list



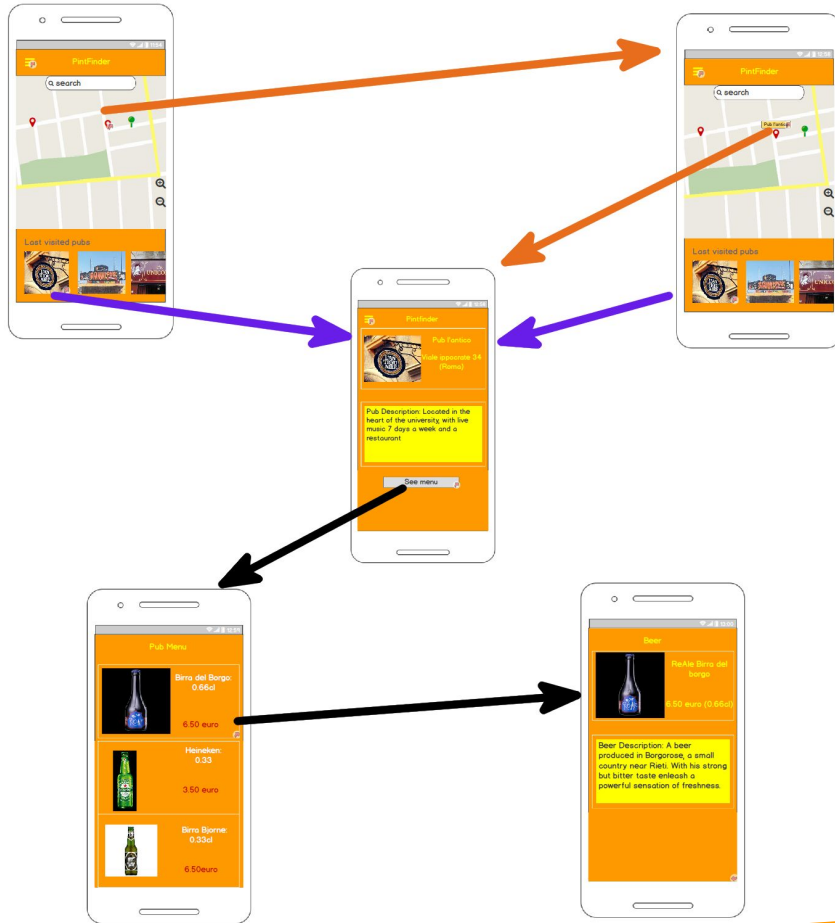
# Task 2 : A pub lover updates his *tasted beers* list



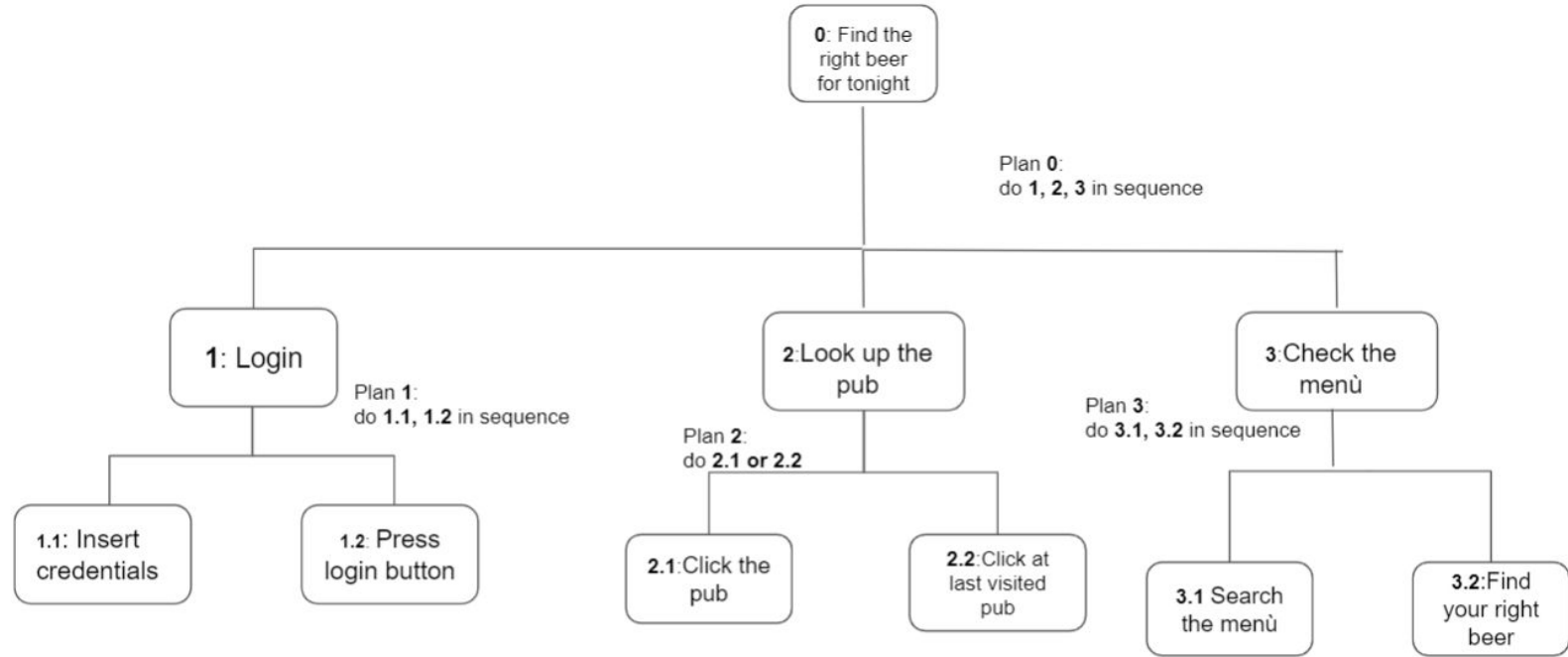


# Task3:

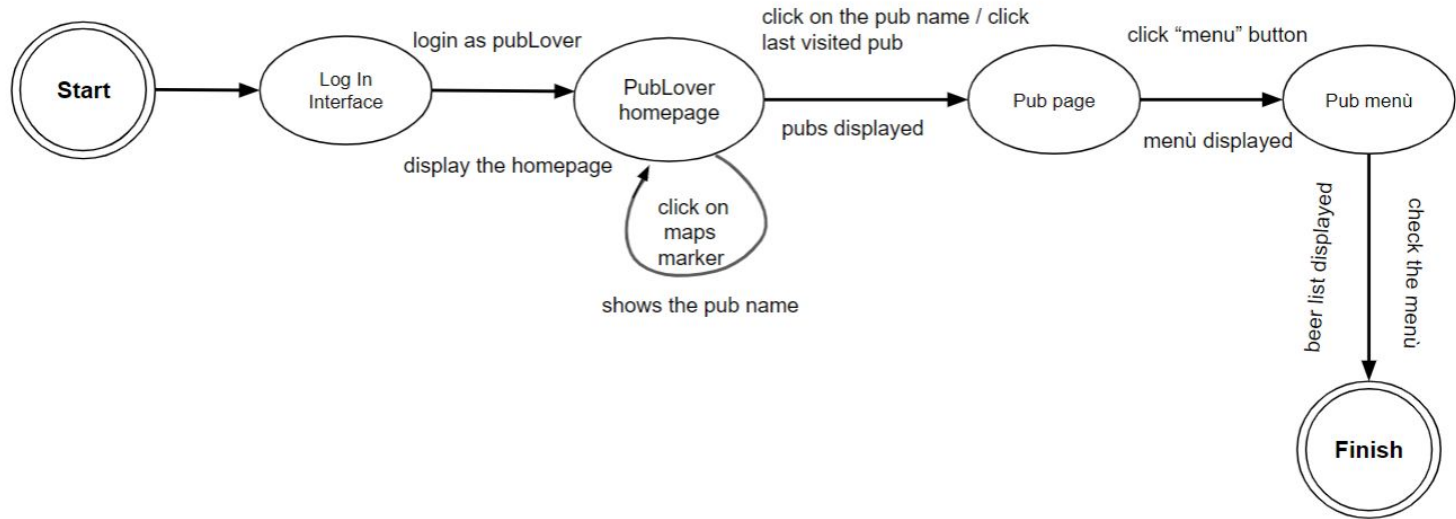
Steps to check a particular beer of a certain pub



# Task 3 : A pub lover check a particular beer of a certain pub



# Task 3 : A pub lover check a particular beer of a certain pub

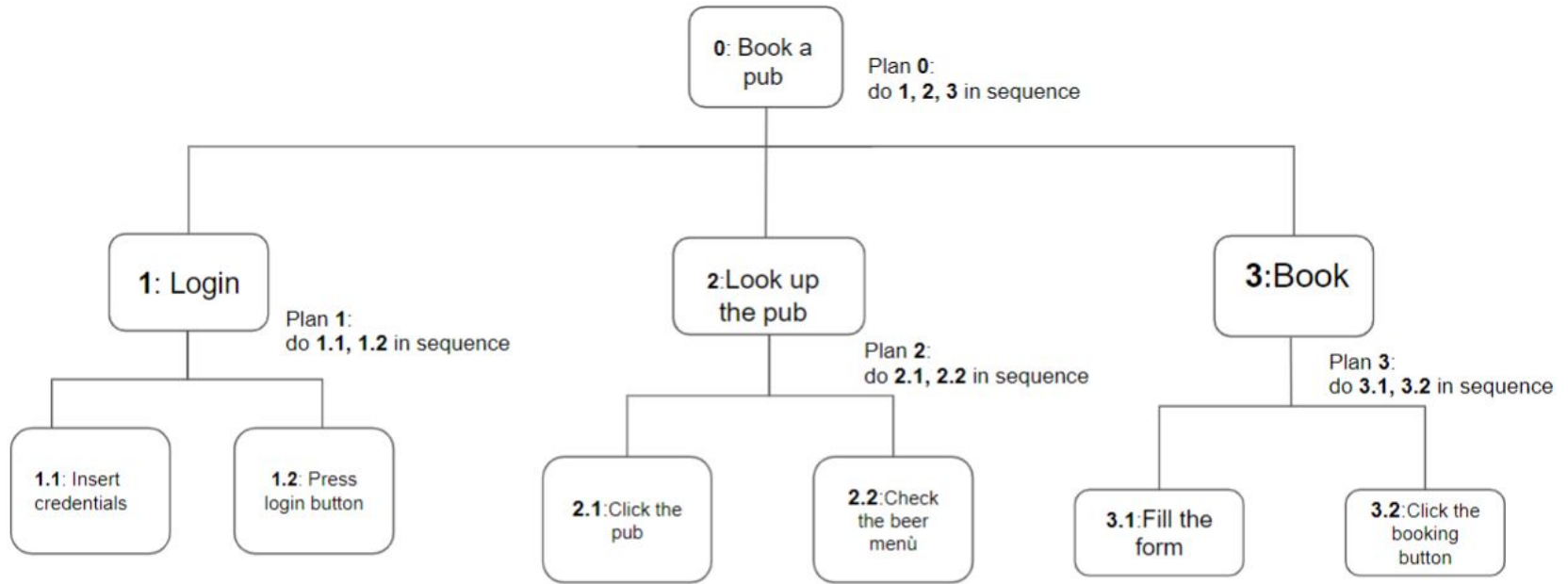


# First Prototype

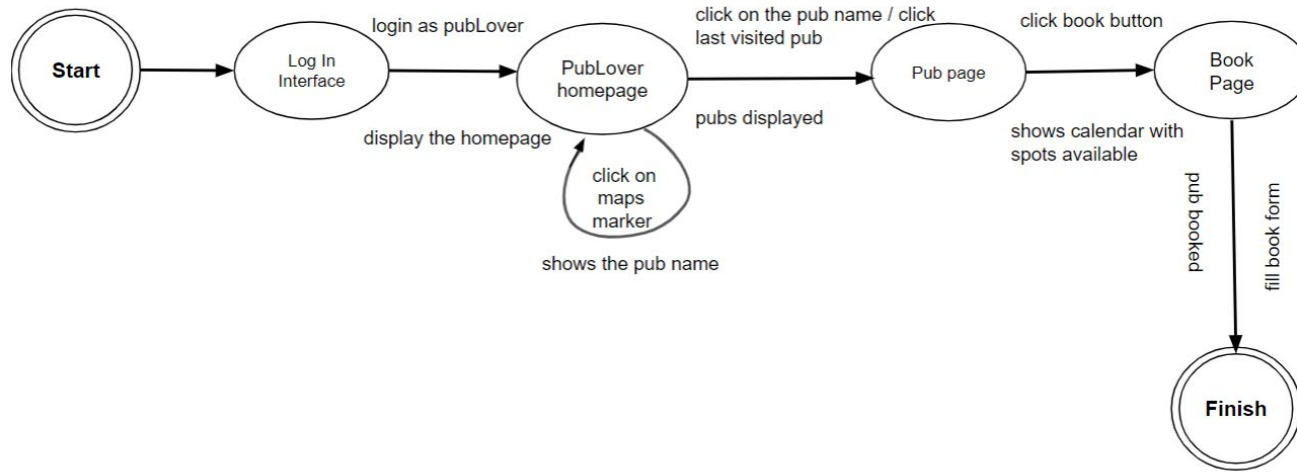
In this development phase we added several features:

- A PubLover can book a pub spot available.
- A PubOwner can make offers on his beers menu`.
- Adding the admin persona

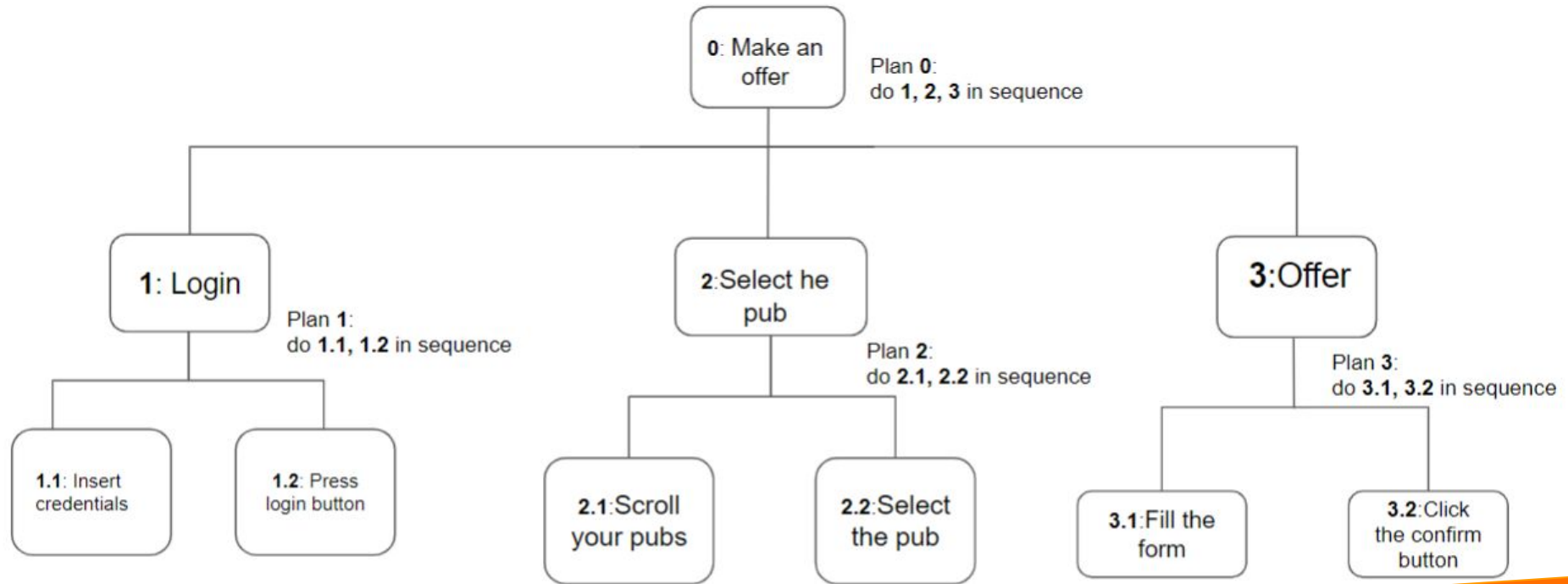
# The booking feature



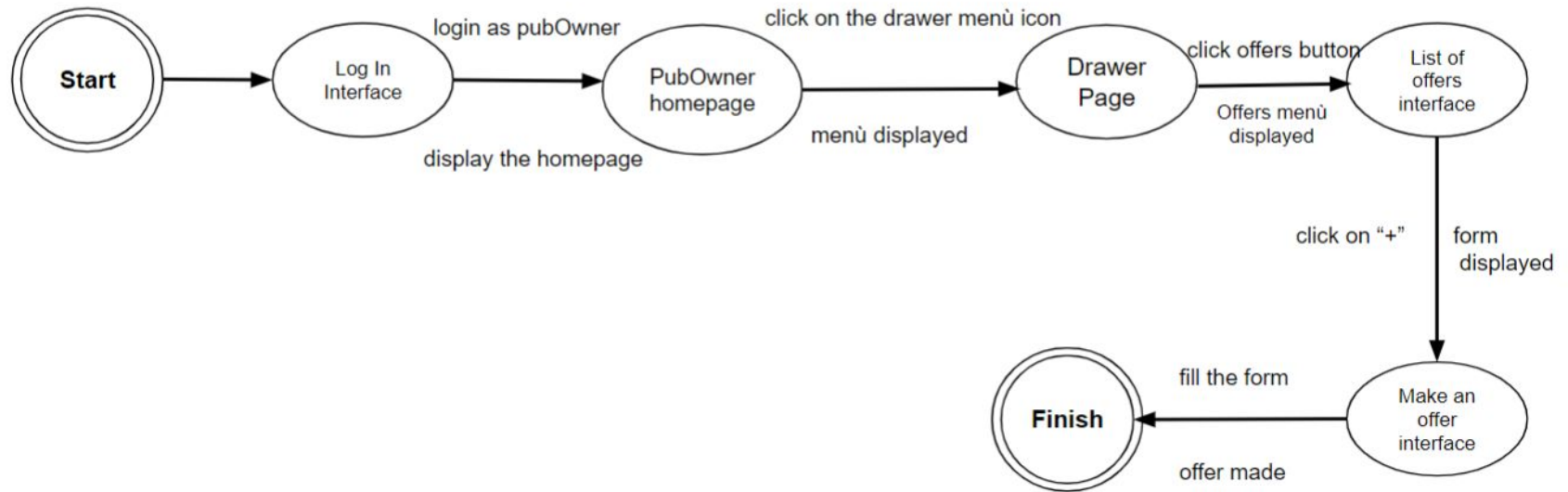
# The booking feature



# The offers feature



# The offers feature





# User Profile: Admin

<b>Age:</b>	19+ years
<b>Gender:</b>	50% male
<b>Job Title / Education:</b>	-
<b>Location:</b>	Anywhere in Italy
<b>Income:</b>	\$0 - \$10.000/year
<b>Technology:</b>	Smartphone friendly
<b>Family:</b>	Single

Note: The implementation is part of “Future Work”

# Persona: Marco

## Background

- 21, Male
- Naples, Italy
- Accounting diploma
- Timid
- Responsible
- Videogames lover
- Movie fan

## Frustrations

- Mocked due to his passions
- Has old videogames console
- Spending all money to the dentist



## Lifestyle

Marco is a student from Federico II University of Naples. He is planning to work as manager to Amazon Warehouses. He has a huge passion for videogames and sometimes wins in official tournaments.

He loves watching movies on tv, especially teen dramas.

He is always up to date with computer and smartphone technologies.

## Motivations

- Unselfish
- Loves using techs
- Want to make experiences
- Managing
- Very friendly

Note: The implementation is part of “Future Work”

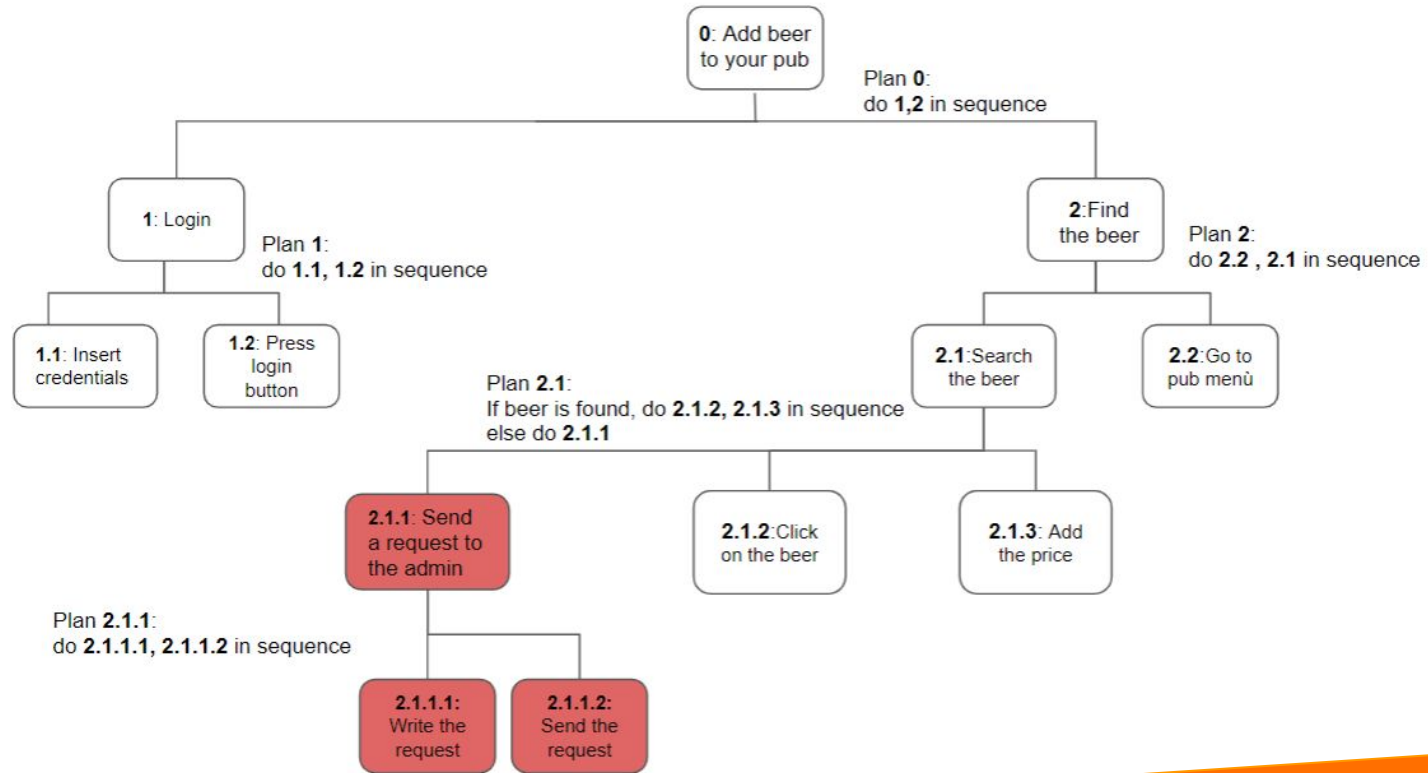
**First Prototype**

# Scenario

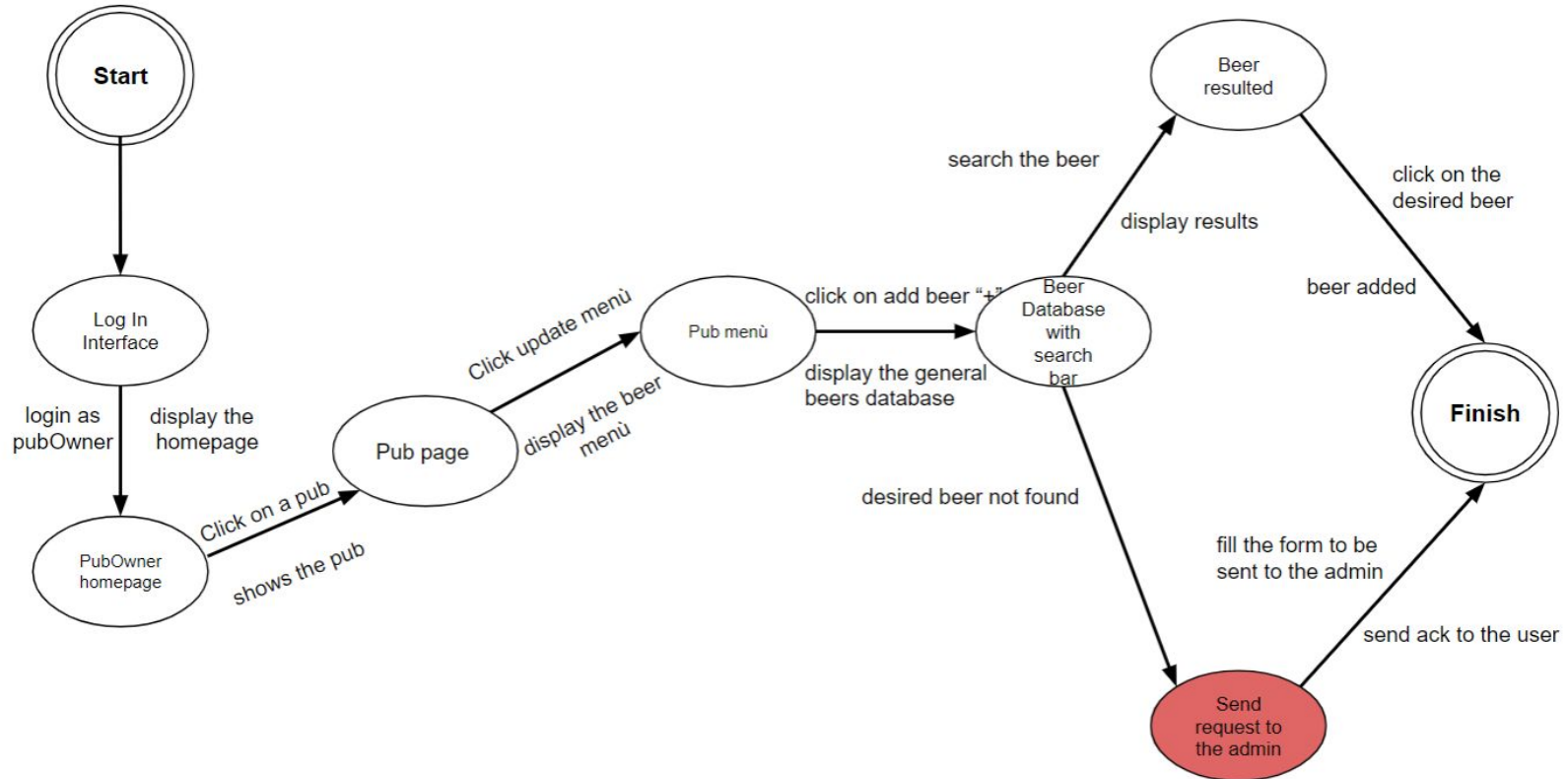
*It is Friday, Marco is playing with his smartphone and suddenly arrives a notification from PintFinder: A pub owner requested the add of a very specific beer made in a small town near Innsbruck. Marco, as admin, as the purpose to add new beers and is the only one who can apply edits to the global list of the beers. So, he access the list and adds the Innsbruck beer.*

Note: The implementation is part of “Future Work”

# Modified HTA for adding beer to pub menu



# Modified STN for adding beer to pub menu



## Heuristic Evaluation

Date: 26.05.2019

Evaluator: Valeria Mirabella

Prototype: PintFinder

Frame	Heuristic violated	Severity	Description / Comment
All	User control and freedom	3	Allow user to recover from error if he choose by mistake the wrong action putting a back button. Remember you should be consistent in every page.
Search	Flexibility and efficiency of use	2	Allow favorite searches for experienced users
Home	Visibility of the system status	3	Keep user informed about the profile he used for login and if logged or not (if applicable)
Home page new pub lover	Recognition rather than recall	2	Add some details on last visited pubs adding for example the data, notes of rating left
Tasted beer	Match between the system and the real world	3	User could be interested in the availability of the tasted beer in the pubs
Add beer as pun lover	Flexibility and efficiency of use	3	Supply search engine and accelerators
Lovers see pub menu beer	Recognition rather than recall	3	Help user is remember if he already tasted the beer and give the information available in tasted beer section
Lovers see pub menu beer	User control and freedom	4	Impossible to exit the page
All	Help and documentation	2	Provide help and documentation
Help	Recognition rather than recall	3	Usually personal information are not in help section. It will be not easily retrievable. Moreover help is missing
Create menu	Flexibility and efficiency of use	3	Supply search engine and accelerators

We used the **Molich and Nielsen's** Heuristics as kind of heuristic evaluations

Level of severity:

0 No usability problem

1 Cosmetic problem only

2 Minor usability problem

3 Major usability problem

4 Usability catastrophe

## Second Prototype

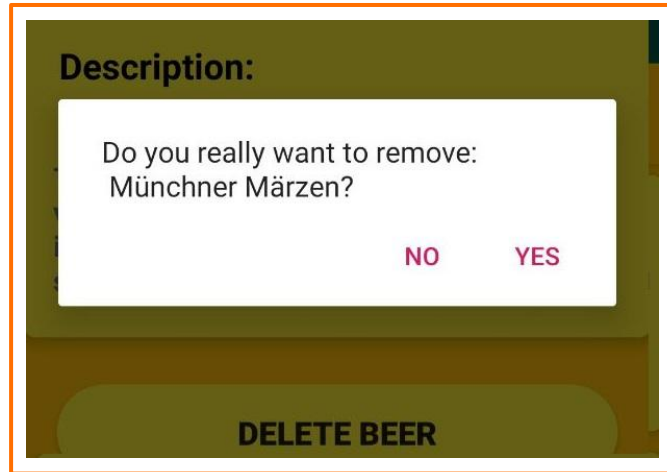
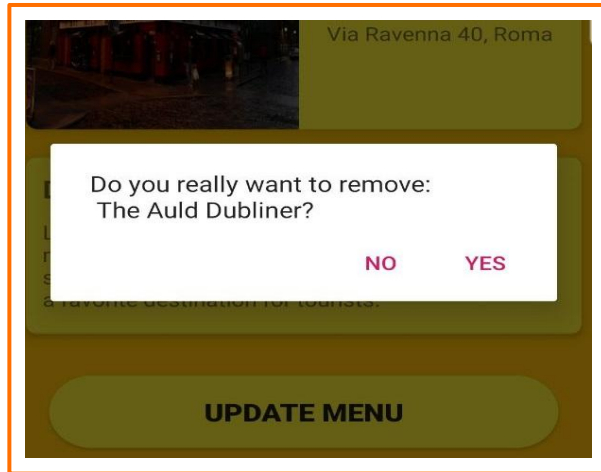
After the expert evaluation report, we tried to solve the most serious problem. The highest severity problem (level 4) was: *Impossible to exit the page.*

This was a problem strictly bounded to the mockups. In fact the back button in android is implemented and through Balsamiq we don't knew how to implement the possibility to go back except doing that in the presentation mode. However, we added an home button to return to the homepage. So, during the implementation of the app this problem **was fully resolved.**

## Other major problems

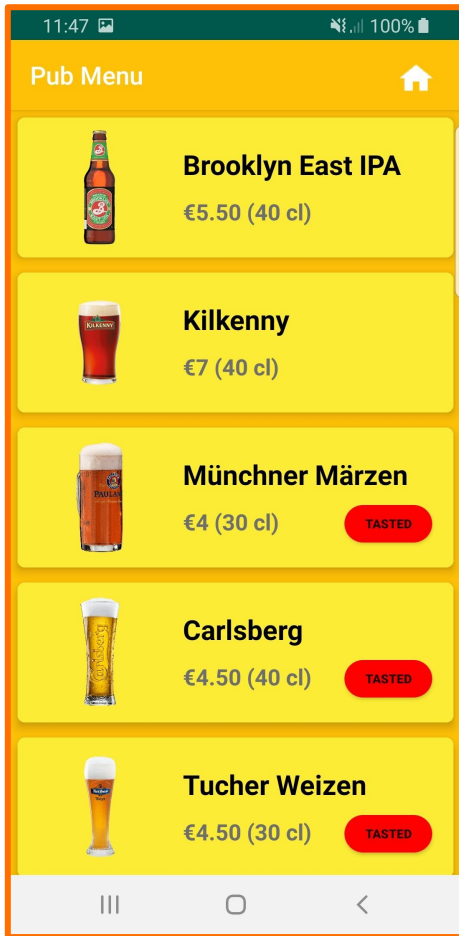
- Allow user to recover from error if he choose by mistake the wrong action.
- Severity : 3.

Solved with confirmation pop-ups and the back button.





## Other major problems



*-Help user in remember if he already tasted the beer and give the information available in tasted beer section.*

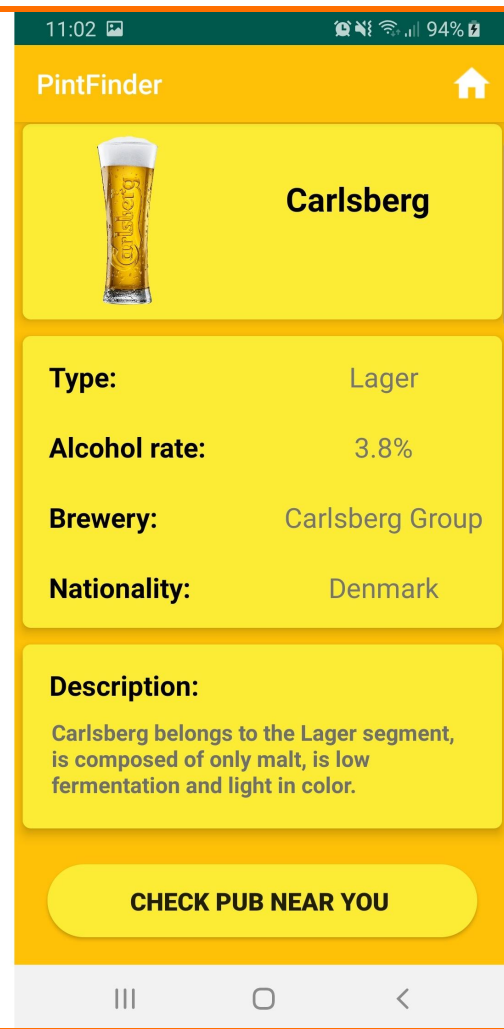
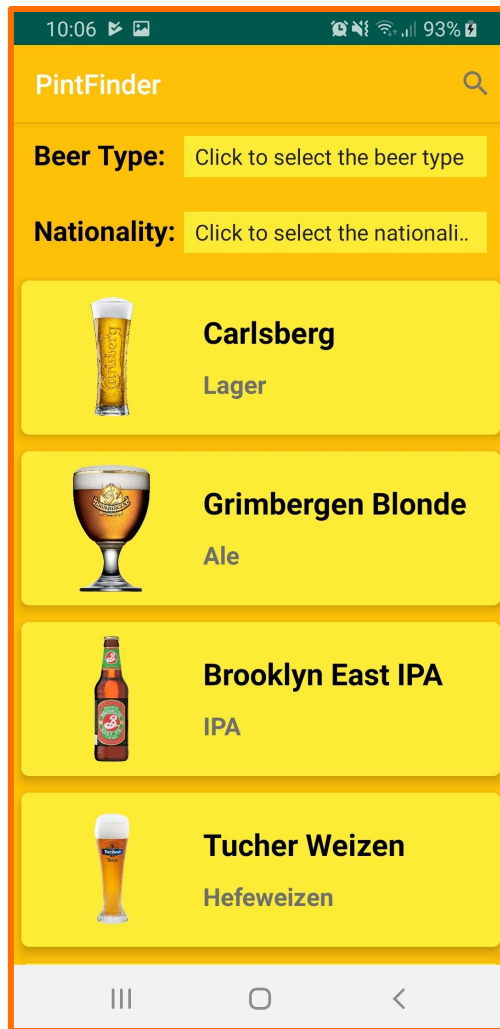
- Severity : 3.

Solved adding a “*tasted*” wording to the side of a beer in a menù, if it is inside the tasted beers menu

## Other major problems

- *Allow favourite searches for experienced users*
- Severity : 2.

We solved adding an **advanced search** feature. With this feature the expert user can choose the right beer and clicking on the "check pub near you" button can find all the pubs in the neighborhood with that beer. This button has been added even in the tasted beer list



# Think Aloud

- **Group:** 10 people
- **Task:** Create a pub.
- **Protocol Analysis:** paper and pencil

## **Why this task?**

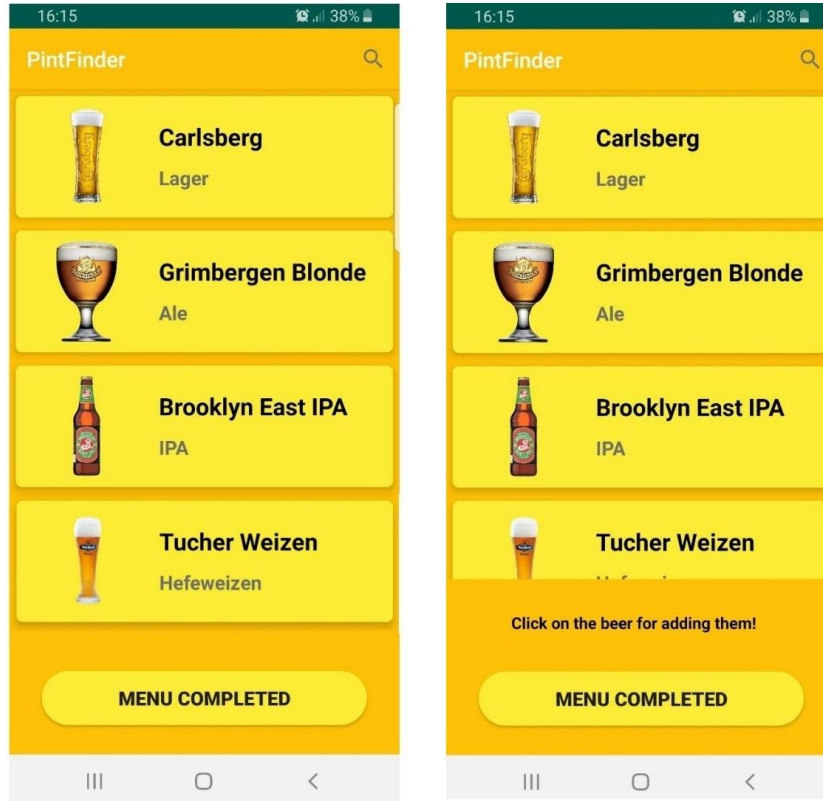
Because of the questionnaire analysis

# Incident report

Priority of the incident	Description of the incident	How the incident was found	Potential solution
2	User created a Pub without adding any beer in the menu	User in the menu creation page directly clicked to "menu completed" because was unclear that the beers displayed must be clicked to be added	Add a textual panel in which you advise the user to click on the beer for adding it

Think aloud

# Implemented solution



Think aloud

# Controlled experiment: ANOVA

**The task:** *delete a beer from tasted beer menu of a PubLover.*

## **The variables:**

- A group of 10 people.
- Interface n1 and Interface n2 as independent variables.
- The task start from the logging-in.
- The time to execute the task as dependent variables.
- Within groups approach

## **The hypothesis:**

- Null Hypothesis: there is no difference between using the application with interface n1 or interface n2.
- Our Hypothesis: users will take less time to perform the task using the application with interface n2 than with interface n1

# Controlled experiment



Interface n°1



Interface n°2



# Controlled experiment: results

Interface	
n1	n2
14	11
18	10
12,5	7,5
17	15
20	15,5
11	8,5
10	6
16,5	15
11,5	9
13	8

Analisi varianza: ad un fattore

RIEPILOGO

Gruppi	Conteggio	Somma	Media	Varianza
Colonna 1	10	143,5	14,35	11,16944
Colonna 2	10	105,5	10,55	11,96944

ANALISI VARIANZA

Origine della variazione	SQ	gdl	MQ	F	Valore di significatività	F crit
Tra gruppi	72,2	1	72,2	6,240576	0,022395611	4,413873
In gruppi	208,25	18	11,56944			
Totale	280,45	19				

## Controlled experiment: conclusions

As we see from the Excel table our results are positive, because we know that if  $F > F_{crit}$ , we can reject the null hypothesis.

So, in this case we reject the hypothesis that there is no difference between using the application with interface n1 or interface n2.

Moreover, a lot of users found some trouble finding the red cross because they thought that it was just a part of the image.

As conclusion, **the null hypothesis is rejected**. Moreover, the mean of the execution time of n1 is greater than n2 , so as conclusion **our hypothesis is true**.

# Conclusions

From this experience we learned that is not simple see an application as user. We started the idea from our point of view and modified the project through the questionnaire and improvements thanks to the expert-based evaluation and the think aloud experiment.

Our next goals are:

- Put the app to the Play Store.
- Implement the Admin persona.
- Produce an iOS Systems porting.