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# Usability testing report – low fidelity prototypes

Human-Computer Interaction Project

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# Table of contents

# 1 Executive summary

The aim of SitDown is matching students and remote workers with their ideal working cafe. This means reliable search and reservation for customers, and new ways of monetization for cafe shop owners. In order to discover the ideal way this can be done, we conducted usability tests on two prototypes relating to two hypotheses we deduced from our prior research. One of our prototypes (Requirements-focused prototype) tested the hypothesis that discovering cafes is mainly a question of searching based on individual requirements. The other (Socially-focused prototype) investigated the hypothesis that customers want to discover places to work, based on the experiences of friends and their existing reviews.

Our two low-fidelity, paper-based prototypes were exposed to 4 remote workers and 4 students. We discovered that most participants preferred the map based approach of the first prototype over the social-network like representation of the second. They enjoyed the map view and simple design of the interface, but were confused by our concept of “offers" that popped up on the map. Their mental model induced that items on the map would be the establishments themself, and not individual offers they made for customers. While most participants reported that they got confused using the second prototype, because there was a lot of information presented, they preferred the more simplistic representation of cafe profiles and the simplified filter.

Our next step will be the implementation of a high-fidelity prototype based on the Requirements-focused prototype. However, we will integrate the filter and profile pages of the Socially-focused prototype to avoid the confusions users experienced in the Requirements-focused prototype. Further we will evolve our concept of offers to overcome the confusions it posed.

# 2 Goal of evaluation

Evaluate how the two designs fit the mental models of the participants. The evaluation has been made using the “thinking aloud” method. Evaluated attributes: efficiency, effectiveness, and user satisfaction.

# 3 Schedule update

*Table 1. Table with updates regarding the schedule*

| Deviation | Aspect | Explanation |
|---|---|---|
| 1 | Date | Due to the testers availability we had to change our time schedule according to their preferences. The actual plan is shown in chapter 4.1 |
| 2 | Place | Since the testers were not all from UPM, instead of meeting them at Imdea building, room 279 as planned, we agreed with them other places more |

| | | |
|---|---|---|
| | | reachable for them. We tested at Imdea building, room 279 only the ones we could reach there. So in the end we have 4 tests done at Imdea building and 4 tests done in other places. The actual plan is shown in chapter 4.1 |
| 3 | Participant number | In order to gather more exhaustive information about our prototypes we decided to increase the number of testers from 3 per personas to 4 per personas, so we decided to test 4 workers and 4 students, in total 8 testers. The actual plan is shown in chapter 4.1 |
| 4 | Prototype 2 minor changes | In order to respect the heuristic 4 which is about standard and consistency, we changed the book dropdown menu in the cafe's detail page into a "Book now" button. We attach the new screen in Annex B. |
| 5 | Prototype 1 minor changes | Some of the information on the offer pop-up was changed to match the task. The number of participants was changed from "1" to "2" |

# 4 Information about the performed usability testing

## 4.1 Dates and places

*Table 2. Data and places*

| Session | Date | Place | Participants |
|---|---|---|---|
| 1 | 04-04-2024 | Imdea building, room 279 | 1<br>Persona: Student (Jason) |
| 2 | 05-05-2024 | Colonia Jardín | 4<br>Persona: Remote Worker (Britney) |
| 3 | 09-05-2024 | Imdea building, room 279 | 1<br>Persona: Student (Jason) |
| 4 | 10-05-2024 | Imdea building, room 279 | 2<br>Persona: Student (Jason) |

## 4.2 Participant demographics

1. Demographics:
    - Age: Participants' age ranges from 20 to 25 years
    - Gender: 5 males, 3 females
    - Occupation: 4 students, 4 remote workers

2. Screen Time on Phone:

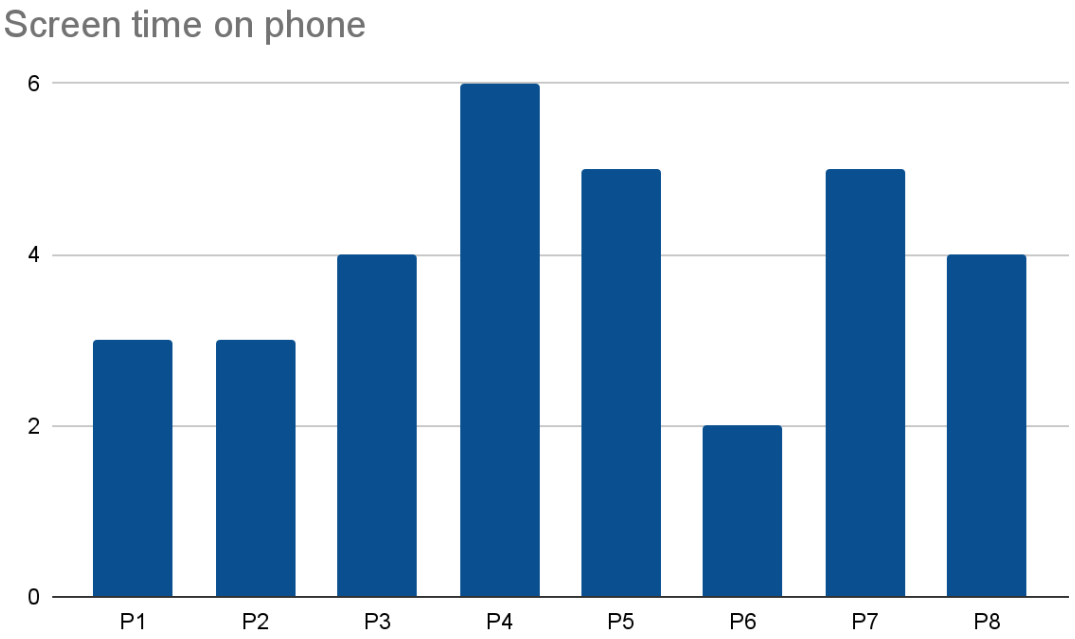



*Figure 1. Bar chart with screen time on phone of 8 participants.*

3. How much do you work in coffee shops per week?:

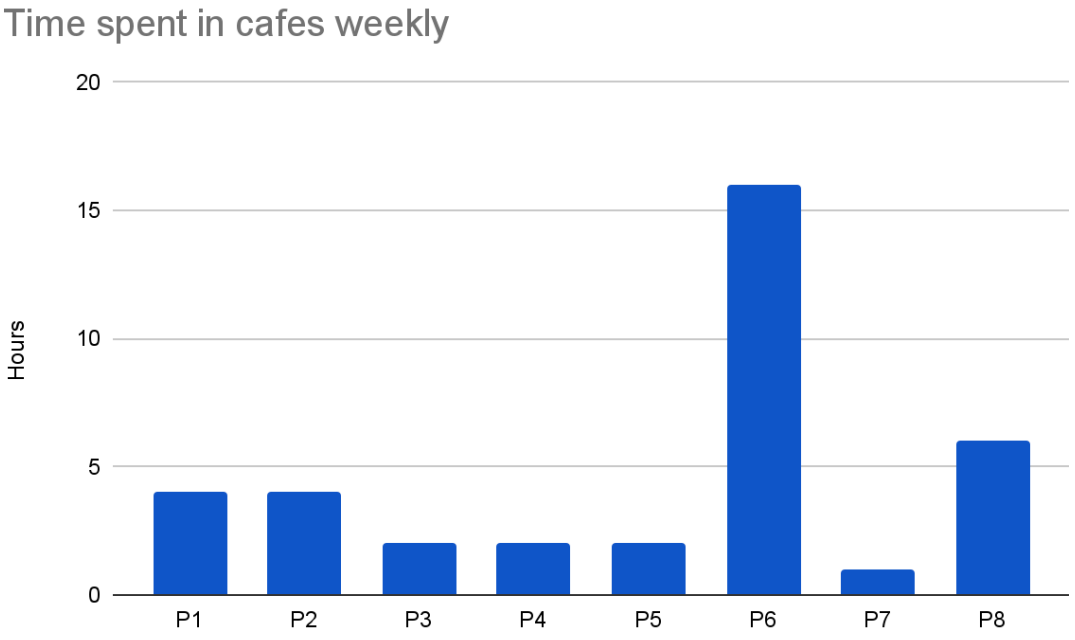



*Figure 2. Bar chart with time spent in cafes weekly of 8 participants.*

# 5 Effectiveness

## 5.1 Effectiveness of first design: Requirements-focused Prototype

*Table 3. Table with effectiveness information*

| | Mistakes (average) | Mistakes (std. dev.) | Success rate |
|---|---|---|---|
| Task 1 | 0,87 | 1,09 | 8/8 |
| Task 2 | 0,75 | 1,31 | 8/8 |
| Task 3 | 1,62 | 1,03 | 8/8 |

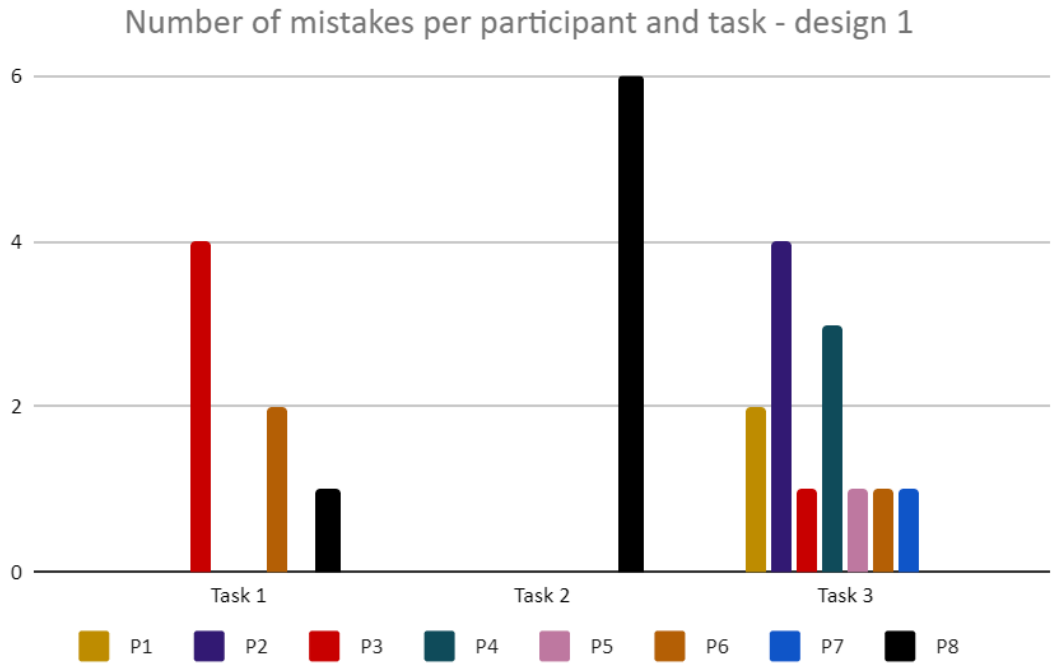



*Figure 3. Bar chart with the number of mistakes (8 participants, from P1 to P8; and three tasks, from T1 to T3)*

Effectiveness findings for first design:

- Finding 1: Despite mistakes being made, all participants could complete all of the given tasks.
- Finding 2: Common mistake for Task 1: 2/8 participants did not discover the filter option and just tried to click on all items to find the right place.
- Finding 3: Outlier in Task 2: Instead of going through friends to find a place recommended by a friend they searched for “halal” first. The profile section did not actually show the friend's review, which led to confusion.
- Finding 4: Common mistakes for Task 3: 3/8 participants tried to find Soukis cafe through the wishlist, or recent activities. We assumed they would use the search function. 2/8 participants tried to click the Star rating in the profile directly, assuming they could rate the cafe that way.

## 5.2 Effectiveness of second design:

*Table 4. Table with effectiveness information*

| | Mistakes (average) | Mistakes (std. dev.) | Success rate |
|---|---|---|---|
| Task 1 | 2,50 | 1,25 | 8/8 |
| Task 2 | 1,00 | 0,75 | 8/8 |
| Task 3 | 3,12 | 1,40 | 3/8 |

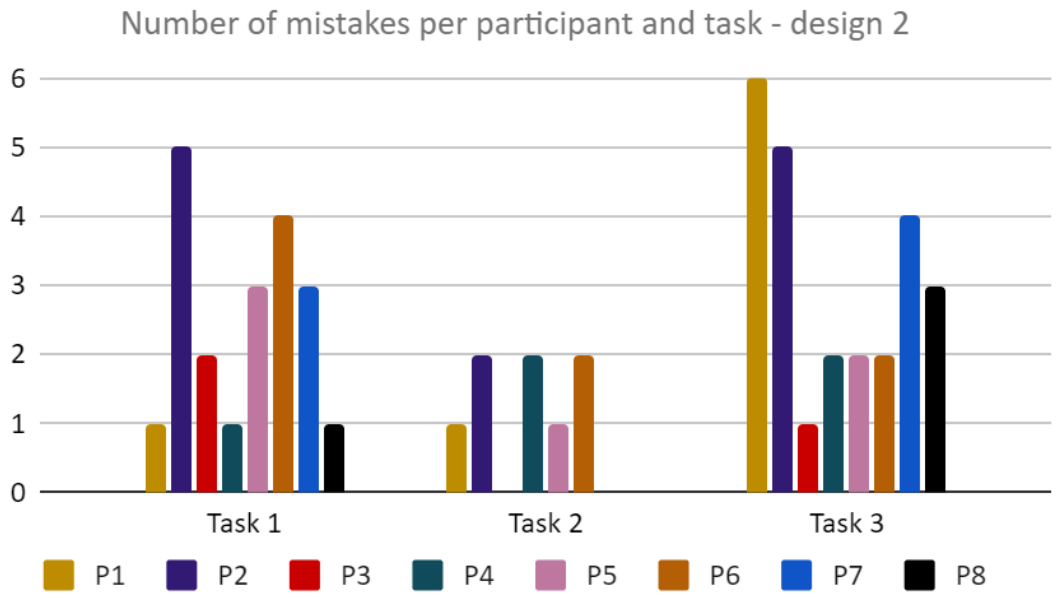



*Figure 4. Bar chart with the number of mistakes (8 participants, from P1 to P8; and three tasks, from T1 to T3)*

Effectiveness findings for second design:

- Finding 1: only 3 participants out of 8 managed to complete task 03. Such participants managed to reach the final result with one tip.
- Finding 2: 3 participants out of 8 managed to complete task 03 only after being given a tip, which was either that the place they needed to review had been booked through the app (P4,P6,P7), or that they should check their profile section (P2). Only one participant (P3) did not manage to complete the task after being given the tip to go through the profile section.
- Finding 3: When asked to write a review (task 03) all participants searched for the place to review via the search tab in the explore section. They always failed to complete the task because the detail inspection page is missing a “add a review” function, which is only accessible through the profile section. We wrongfully assumed that users would automatically explore their profile page to look for past activities. On the other hand, the task did not state that the place had been booked through the app: when we noticed participants were lost and decided to give them this tip, they all managed to flow to the right section in the navbar and to complete the task.
- Finding 4: In the difficulties of performing the third task, 6 users out of 8 thought that the recommend button could substitute the review. Although they didn’t expect to leave a review with that button, in the confusion they tried it.

- Finding 5: In the explore section, 5 users out of 8 tried to filter with the options given by the “Based on your mood” section.

## 5.3 Effectiveness analysis.

*Table 5. Example of a table to compare mistakes.*

| | First design Requirements-focused prototype | | Second design Socially-focused prototype | |
|---|---|---|---|---|
| | **Mistakes (average)** | **Mistakes (std. dev.)** | **Mistakes (average)** | **Mistakes (std. dev.)** |
| Task 1 | 0,87 | 1,09 | 2,50 | 1,25 |
| Task 2 | 0,75 | 1,31 | 1,00 | 0,75 |
| Task 3 | 1,62 | 1,03 | 3,12 | 1,40 |

*Table 6. Example of a table to compare completion ratio.*

| | **First design % of success** | **Second design % of success** |
|---|---|---|
| Task 1 | 100% | 100% |
| Task 2 | 100% | 100% |
| Task 3 | 100% | 37,5% |

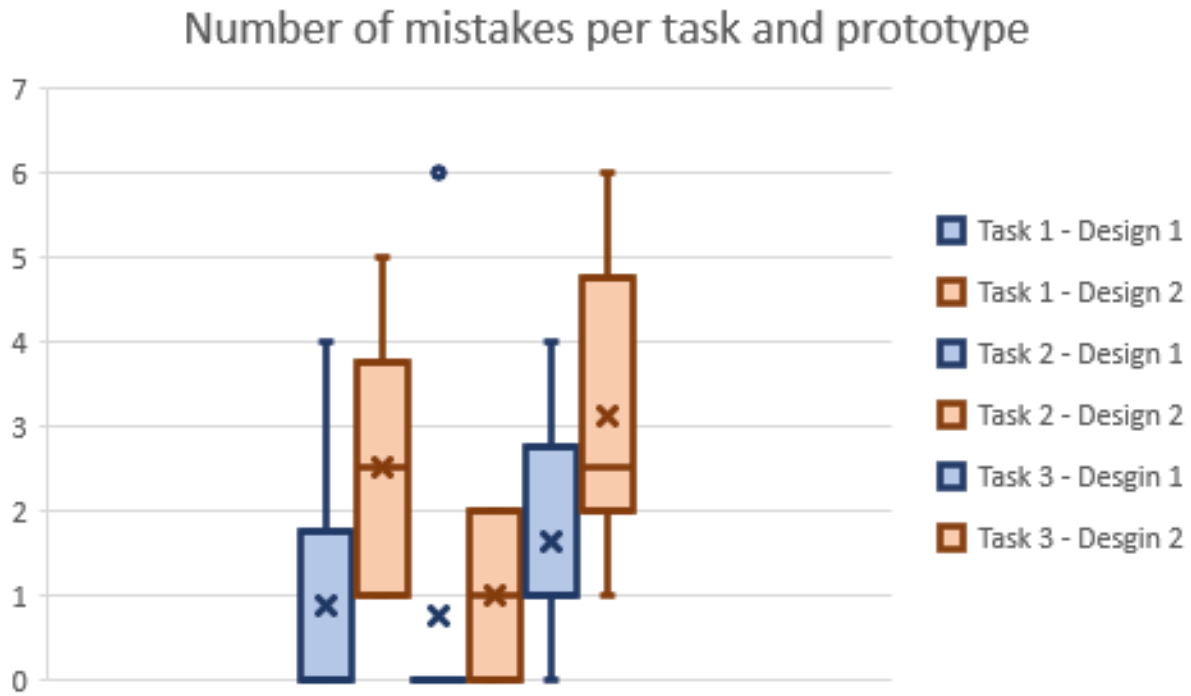



*Figure 5. Box and whiskers diagram comparing number of mistakes per task and design*

From the box and whiskers diagram it is very clear that the number of mistakes in the second design is higher in every task.

The first task was thought to be done more easily with the first design by putting the actions necessary to perform it in the foreground while in the second design these actions were placed in the second or third place. So, we expected that people would have done it more effectively with the first design. Considering the average of mistakes and the optimum actions for the two designs, the first one is better for effectiveness because 0.87, with 14 optimum actions (0.06 ratio of errors), is a better average than 2.5, with 17 optimum actions (0.14 ratio of errors).

The second task was thought to be done more easily with the second design by putting the actions necessary to perform it in the foreground while in the first design these actions were placed in the second or third place. So, we expected that people would have done it more effectively with the second design. Considering the average of mistakes and the optimum actions for the two designs, the second one is better for effectiveness because 1, with 6 optimum actions (0.167 ratio of errors) is a better average than 0.75, with 4 optimum actions (0.19 ratio of errors).

The third task was thought to see how the users approach to an important feature emerged in the interviews and observations process concerning the reviews. Considering the average of mistakes and the optimum actions for the two designs, the first one is better for effectiveness because 1.62, with 8 optimum actions (0.20 ratio of errors) is a better average than 3.12, with 9 optimum actions (0.35 ratio of errors). Considering that with the second design only 3 out of 8 testers managed to complete the task and everybody with a tip and also considering the feedback we received from the user themselves we can affirm that the first design is better than the second one. We noticed that this evaluation is influenced by the way we communicate the task. When we tipped the testers suggesting that they reserved with the app, they immediately would go to the right section and complete the task easily. Without this tip they couldn't complete the task. So we could say that if the place was not reserved by app, definitely the first design is better, otherwise we would need a second testing to define it.

To conclude this analysis, in ⅔ tasks the first design offers better performance than the second one in terms of effectiveness and in the one in which the second design is better there is a very small difference with the first one that we don’t consider strongly impacting.

So, overall, the first design offers better performance than the second one in terms of effectiveness.

# 6 Efficiency

## 6.1 Efficiency of first design: Requirements-focused Prototype

*Table 7. Table containing information about number of elemental actions per task.*

| | **Actions (avg.)** | **Actions (std. dev.)** | **Optimum number of actions** | **Ratio between average number of actions and optimum: (average number** |
|---|---|---|---|---|

| | | | | **of actions) / (optimum number of actions)** |
|---|---|---|---|---|
| Task 1 | 10,75 | 3,15 | 14 | 0,77 |
| Task 2 | 5,12 | 1,96 | 4 | 1,28 |
| Task 3 | 8,87 | 2,62 | 8 | 1,11 |

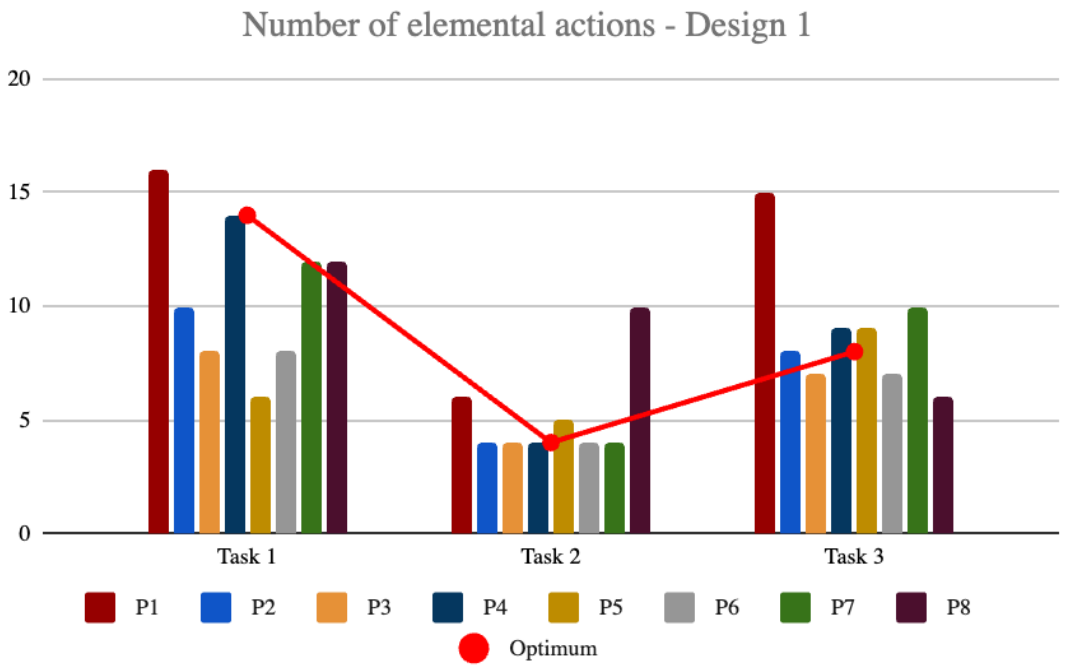



*Figure 6. Bar chart with the number of elemental actions to complete the task (8 participants, from P1 to P8; and three tasks, from T1 to T3). Optimum value represented as a line.*

Efficiency findings for first design:

- Finding 1: Even though we had outliers in each task, all of the users were able to finish the 3 tasks being close to the optimum amount of actions that was thought of by the designers.
- Finding 2: Some of the participants didn't use the "filters" section as planned by the designers, some of them didn't even mention it while they were describing the screen, and as a result never used it. This part is not as visible as expected, and this is why we can find differences in clicks between our participants. 5 out of 8 participants used the filters option.
- Finding 3: Some of the users expected to find the big things like wifi and laptop allowance icons, in the cards of the pop-ups or in the list of offers, this could have let them filter some options just from that action.
- Finding 4: The participants that had less actions in task 1 found another path or forgot to check some of the things described in the task and even though they successfully completed the task, checking the restrictions was an important step for the task.
- Finding 5: On the screen of the cafe profiles, some of the participants tried to click on not clickable items like the stars. Some of the participants also said that

they couldn't really differentiate between buttons and information chips, or the hierarchy of the chips shown throughout the description.

- Finding 6: A lot of Participants overperformed in comparison to our optimum(mainly task 1, but also task 3), because they skipped steps, like applying certain filters, that we deemed to be in the optimum path. Additionally, they remembered where certain information was and didn't take the steps that were anticipated.(task 3)

## 6.2 Efficiency of second design: Socially-focused prototype

In this section we will provide one graph and one table for both the personas. This is because there is not a big difference in their behaviour so their results are merged in one table and one graph.

*Table 8. Table containing information about number of elemental actions.*

| | **Actions (avg.)** | **Actions (std. dev.)** | **Optimum number of actions** | **Ratio between average number of actions and optimum: (average number of actions) / (optimum number of actions)** |
|---|---|---|---|---|
| Task 1 | 17,25 | 1,75 | 17 | 1,01 |
| Task 2 | 6,75 | 1,83 | 6 | 1,13 |
| Task 3 | 15,33 | 2,89 | 9 | 1,70 |

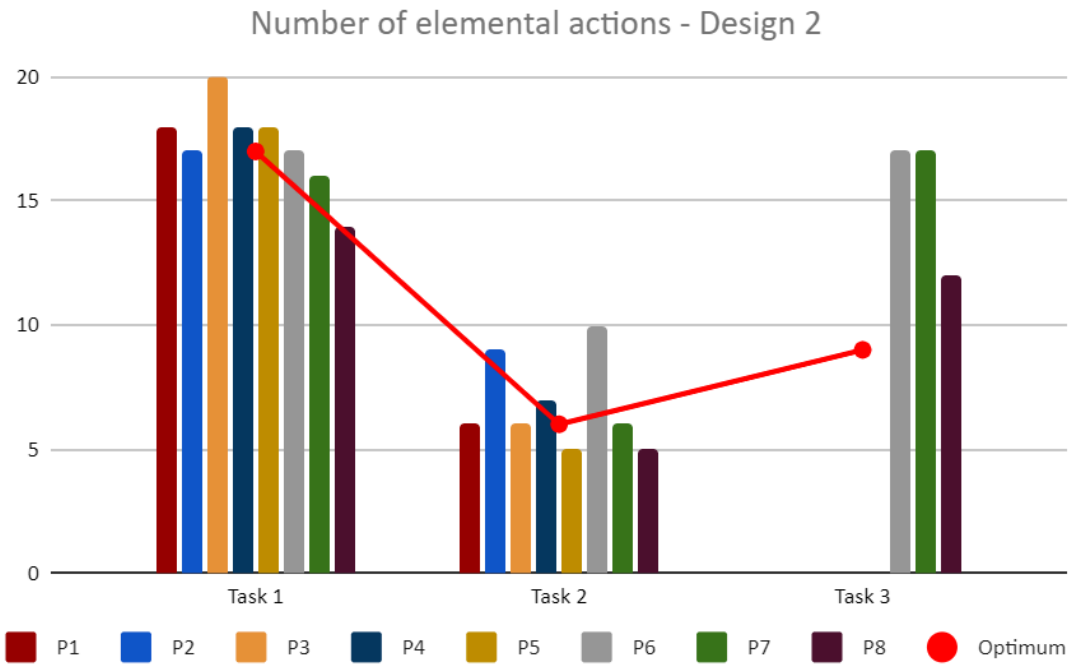



*Figure 7. Bar chart with the number of elemental actions to complete the task (8 participants, from P1 to P8; and three tasks, from T1 to T3). Optimum value represented as a line*

Before analysing the findings about the efficiency of this second design, we must say that the cases where testers made less actions than the optimum number is because of the content we choose to show in the paper prototype. For example, sometimes users were able to find a specific cafè just because we put it on the screens but not because they searched for it.

Furthermore, we noticed that the way we implemented task 3 was very challenging for the testers and different from their mental models, as a matter of fact only three of them were able to complete it with the facilitator tips and the others couldn't complete it at all. For the first 5 testers we consider the tip as a failure of the task because we told them exactly which section to go to, for the last 3 we consider the tip as non-invalidant because we told them that they booked the place with the app and they were able to find the section to leave the review by themselves.

In the following, we will state all the findings that affect efficiency. To establish what is an efficiency finding we considered anything that makes the users do a click that leads them in other directions.

Efficiency findings for second design:

- Finding 1: Although we taught that users will search immediately for filters considering the nature of the first task, we found out that the search screen has too much content that distracts the users in the filter selection and deviates them from their goals. This makes them click on another section of the screen "hiding" the filter option from their sight. Only 2 out of 8 went directly for filters in the search screen.
- Finding 2: Following the finding 1, we found that in general, for the users it is very important to find immediately the information they are looking for, with no need of putting extra content around it. In fact, 8/8 users were overwhelmed by the quantity of information presented.
- Finding 3: The importance of the standards using icons. In particular, in the second task, we used the "save" button to add to the wishlist instead of the standard heart. This caused some confusion to every tester, but with no other actions they managed to complete the task. Also because the context suggested to them that hearts were used for other purposes.
- Finding 4: To leave a review, 8/8 users tried to go to the cafè detail page and looked for that feature. This is why no tester made it to complete the task in less than 12 actions and no one was able to do it with no tip.
- Finding 5: The way we presented the tabs (e.g. "My feed" and "Discovery") are confusing for users. Actually we obtain the opposite effect, they think they are on the other page. Only 2 users out of 8 understood the section they were on.
- Finding 6: The filters for the search are one click too far from the users' mental models. Only 2 of them used the filters right away, the other 6 performed other actions to restrict the results of what they were searching.
- Finding 7: 5 out of 8 users used the search bar and the keyboard directly to search for halal places. The other 3 went through the expected path. This tells us that there is a little preference to search directly from the search bar when it is about filtering for one requirement.

- Finding 8: In the third task, when giving the tip that they went to the cafè using the app, we have a rate of 100% of them completing the task. We gave this tip only to three of the users, and to the others we told them which section to go to.

## 6.3 Efficiency analysis

*Table 9. Table to compare efficiency.*

| | First design : Requirements-focused prototype | | | Second design: Socially-focused Prototype | | |
|---|---|---|---|---|---|---|
| | **Actions (average)** | **Actions (std. dev.)** | **Actions (ratio over optimum)** | **Actions (average)** | **Actions (std. dev.)** | **Actions (ratio over optimum)** |
| Task 1 | 10,75 | 3,15 | 0,77 | 17,25 | 1,75 | 1,01 |
| Task 2 | 5,12 | 1,96 | 1,28 | 6,75 | 1,83 | 1,13 |
| Task 3 | 8,87 | 2,62 | 1,11 | 15,33 | 2,89 | 1,70 |

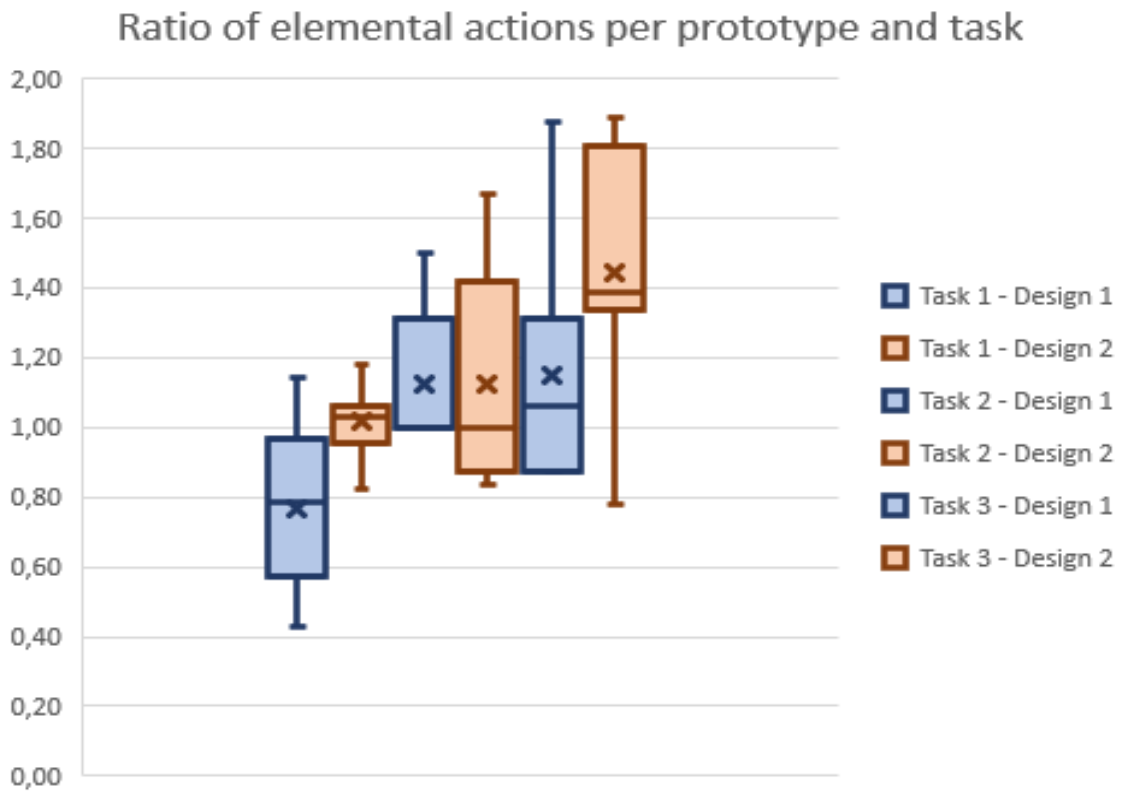



*Figure 8. Box and whiskers chart to compare number of actions per prototype and task.*

After analysing the data of the results for efficiency of each prototype there are some important things to highlight for each task.

In the first task, the optimum way to complete the task checking every requirement is to apply the filters. We found in both prototypes that some of the users didn't follow the expected path which had an impact on the efficiency of the task, however in the end prototype 1 had a ratio of 0,77 over optimum 14 and prototype 2 had a ratio of 1,01 over optimum 17.

In the second task, we expected to have better efficiency for prototype 2 because including the social part in prototype 1 was a second priority. In this case the prototype 1 ratio is 1,28 over optimum 4 and prototype 2 has a ratio of 1,13 over optimum 6, this indicates that there is a difference in the efficiency between the 2 prototypes and even though the users did make mistakes, the important findings here are that the purpose of this task was fulfilled, and in both designs there could be some improvements for the task design to be closer to the optimum ratio.

In the third task, we wanted to test an important feature for the users which is the reviews, as found in the interviews iteration people almost always check the reviews of a place to confirm it is good. For the task we wanted to test the one with more steps, in terms of efficiency, prototype 1 had a ratio of 1,11 over optimum and prototype 2 had a ratio of 1,70 over optimum. It is important to mention that not all participants completed the task in prototype 2. The findings here are that the design of prototype 1 can be improved so that in terms of efficiency the users can see the optimum path quicker. On the other hand, for prototype 2 this is the task with less efficiency as it took the users a lot more than expected to complete the task, and they made a lot of unnecessary actions in order to find the optimal path.

In conclusion, prototype 1 is the one that has better efficiency overall. Although prototype 1 didn't achieve optimal efficiency in all 3 tasks, it has a more consistent performance and it is not far from the optimum actions required for the tasks. Prototype 2 varies much more and in the majority of cases it requires more actions than optimal.

# 7 User satisfaction: SUS questionnaire

## 7.1 SUS for first design: Requirements-focused Prototype

SUS score: **84,1**

*Table 10. Results of the SUS questionnaire for Prototype 1.*

| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|---|---|---|---|---|---|
| 1 | 1 | 0 | 2 | 4 | 1 |
| 2 | 7 | 1 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 3 | 5 |
| 4 | 8 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 5 | 3 |
| 6 | 5 | 2 | 0 | 0 | 1 |
| 7 | 1 | 0 | 0 | 2 | 5 |
| 8 | 5 | 2 | 0 | 1 | 0 |
| 9 | 1 | 0 | 1 | 2 | 4 |
| 10 | 6 | 1 | 0 | 0 | 1 |

SUS findings for first design:

- Finding 1: When asked if this is a system that participants would use frequently, 3 of the replies were neutral and one disagreed, this can be related to the time our participants usually spend in cafes, because if they don't go that often then the system, in general, doesn't add so much value in the day to day life.

- Finding 2: When asked if the participants felt confident using this system, one of the participants disagreed and one stayed neutral. The goal is to make the interface as friendly and intuitive as we can so the design itself could have been a factor for this and we can take into account the comments for future iterations.

- Finding 3: When asked if the participants needed to learn a lot of things to use the system, there was an outlier that said that yes, so it can be because of the task itself that was provided or again something in the design itself.

## 7.2 SUS for second design: Socially-focused Prototype

SUS score: **58,1**

*Table 11. Results of the SUS questionnaire for Prototype 2.*

| Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|---|---|---|---|---|
| 1 | 0 | 6 | 0 | 1 |
| 1 | 2 | 0 | 4 | 1 |
| 0 | 3 | 2 | 2 | 1 |
| 3 | 3 | 2 | 0 | 0 |
| 0 | 0 | 4 | 4 | 0 |
| 3 | 2 | 0 | 2 | 1 |
| 0 | 1 | 2 | 3 | 2 |
| 1 | 3 | 1 | 3 | 0 |
| 1 | 1 | 3 | 2 | 1 |
| 2 | 1 | 3 | 0 | 2 |

- Finding 1: 2 participants out of 8 found the interface overwhelming due to excessive information, stating "I didn't like it. It was cluttered and difficult to use" and "It was cluttered. A lot of information on screen". The issue can be attributed to the excessive amount of information and elements displayed on every screen, resulting in the increase of users' disengagement

- Finding 2: 2 participants out of 8 highlighted how they found the app confusing and not behaving as expected. Such feeling ("very confusing, sometimes didn't

behave as the expectation he had") is mainly due to the fact that the app was meant to allow users to fulfil searching and booking needs while emphasising its social component: merging these elements may cause new adopters to feel lost, as one person admitted: "I feel like this prototype is kind of counterintuitive and works more as a social app than a coffee shop finder"

- Finding 3: "I struggle to find how to leave a review on the location" and "the review: why can't he review it from the site instead of having to go to the profile ?" are comments which depict how 2 participants out of 8 manifested issues with the review system. Users expected to search for a specific place and be able to leave a review through the detail inspection page: the path intended to be followed was more misleading, forcing participants to go through the profile section without them being able to understand it.

## 7.3 Analysis of user satisfaction (SUS questionnaire)

*Table 12. SUS scores of both prototype*

*s*

| | First design | Second design |
|---|---|---|
| SUS Score | 84,1 | 58,1 |

*Table 13. Comparison of the replies to the SUS sentences (10 tables)*

| I think that I would like to use this system frequently | | | | | |
|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| **First design** | 1 | 0 | 2 | 4 | 1 |
| **Second design** | 1 | 0 | 6 | 0 | 1 |

| I found the system unnecessarily complex | | | | | |
|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| **First design** | 7 | 1 | 0 | 0 | 0 |
| **Second design** | 1 | 2 | 0 | 4 | 1 |

| I thought the system was easy to use | | | | | |
|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| **First design** | 0 | 0 | 0 | 3 | 5 |
| **Second design** | 0 | 3 | 2 | 2 | 1 |

| I think that I would need the support of a technical person to be able to use this system | | | | | |
|---|---|---|---|---|---|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| **First design** | 8 | 0 | 0 | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| **Second design** | 3 | 3 | 2 | 0 | 0 |

| I found the various functions in this system were well integrated | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 0 | 0 | 0 | 5 | 3 |
| **Second design** | 0 | 0 | 4 | 4 | 0 |

| I thought there was too much inconsistency in this system. | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 5 | 2 | 0 | 0 | 1 |
| **Second design** | 3 | 2 | 0 | 2 | 1 |

| I would imagine that most people would learn to use this system very quickly | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 1 | 0 | 0 | 2 | 5 |
| **Second design** | 0 | 1 | 2 | 3 | 2 |

| I found the system very cumbersome to use | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 5 | 2 | 0 | 1 | 0 |
| **Second design** | 1 | 3 | 1 | 3 | 0 |

| I felt very confident using the system | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 1 | 0 | 1 | 2 | 4 |
| **Second design** | 1 | 1 | 3 | 2 | 1 |

| I needed to learn a lot of things before I could get going with this system. | | | | | |
|---|---|---|---|---|---|
| | **Strongly disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly agree** |
| **First design** | 6 | 1 | 0 | 0 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| **Second design** | 2 | 1 | 3 | 0 | 2 |

### 1. I think that I would like to use this system frequently

For this sentence, the best design is the requirements-focused prototype because - according to overall results from the SUS analysis - it turned out to be the preferred one by all participants who took part in the usability testing. The socially-focused prototype has been rated as much more difficult to use, especially considering the higher number of actions, mistakes and failures (in particular regarding task 03).

### 2. I found the system unnecessarily complex

The less complicated system is the requirements-focused prototype because - according to overall results from the SUS analysis - is way more intuitive and less complex than the second one. The socially-focused prototype displays features which go beyond the booking process, lacking intuitive and easy to access pathways to leave reviews.

### 3. I thought the system was easy to use

For this sentence, the best design is the requirements-focused prototype because - according to overall results from the SUS analysis - allows easier navigation, easier research and is overall more consistent and less overwhelming. The socially-focused prototype has been rated as more difficult to use, as it focuses more on the social interaction rather than just research and booking activities.

### 4. I think that I would need the support of a technical person to be able to use this system

Regarding this sentence, overall results from the SUS analysis point to the socially-focused prototype. Task 03 well resembles this feeling: 5 participants did not manage to complete the task (1 out of 5 did not even manage to reach the final goal with technical support), while the remaining 3 only succeeded thanks to external help.

### 5. I found the various functions in this system were well integrated

For this sentence, the best design is the requirements-focused prototype because - according to overall results from the SUS analysis - users rated it as more consistent, showing only relevant information in a visible way.

### 6. I thought there was too much inconsistency in this system

According to this sentence, more users agreed the socially-focused prototype has a higher level of inconsistency related to the requirements-focused one. This was probably due to the fact that too many elements were distracting for the participants, lacking overall intuitiveness.

### 7. I would imagine that most people would learn to use this system very quickly

For this sentence, the best design is the requirements-focused prototype because - according to overall results from the SUS analysis - it did not require users to seek

external help to complete tasks and allowed every participant to succeed. The socially-focused prototype, on the other hand, turned out to be much more difficult to work with, especially regarding specific tasks (task 03 in particular). The fact that some participants had to be guided throughout the test to help them complete all the necessary steps is a key indicator the system fails to be quick and easily understood autonomously.

### 8. I found the system very cumbersome to use

According to this sentence, findings pointed out that the socially-focused prototype has been more hard to handle for the majority of participants. This is mainly due to the fact that the system was too cluttered, showing a lot of information on screen and acting counterintuitive. Search results being highly dependent on friends' recommendations was considered more a struggle than an advantage.

### 9. I felt very confident using the system

According to this sentence, the best design is the requirements-focused prototype because - according to overall results from the SUS analysis - being very very similar to other applications in the way it works and displays information it encourages confidence among users when going through the item and using it.

### 10. I needed to learn a lot of things before I could get going with this system

According to this sentence, findings pointed out that users struggled to learn the socially-focused prototype more than the other one. This is mainly due to the fact that the system is mostly counterintuitive and works completely different from other applications used for the same tasks.

Based on the SUS results, the design with the best user satisfaction is the requirements-focused prototype because generally it was received with positive comments in terms of its usability, considering some requirements. The users found it intuitive and simple, as it allowed users to navigate and understand easily. One prototype that is appreciated by having features such as maps and clear step-by-step guidance may be specifically recommended for having a design that fits well with user functionality and simplicity expectations. However, the requirements-focused prototype does bear areas of improvement: much clearer form requirements, for example, and filtering options that would be able to include more of the user-desired features, such as “laptops allowed”.

The socially-focused prototype, on the other hand, was defined as social connectivity - with advanced social characteristics defined as very complex filters offering detailed information about cafes - participants appreciated the dynamic interaction the prototype offers. They could hence see activities and recommendations for friends in order to enjoy a richer experience. However, the prototype has received huge criticism for its interface being cluttered and the overloading functionality, burdening users with a lot of information, confusing them. The main pain points are the difficulty in navigating through the review system and finding the cafes: this would have to be done without necessarily tapping into the friend recommendations, which would indicate some

compromise in usability for the social features. The attempt to integrate social elements detracts from usability and doesn't actually make it very user-friendly.

# 8 General impressions of participants

## 8.1 General impressions on first design: Requirements-focused prototype

In the following section we describe the main problems users reported for the requirements-focused prototype. Some participants did not report any problems. Others reported conduction mainly related to filters and the presentation of information in the profile.

### 8.1.1 What are the main problems you have found while using this prototype?

Findings on main problems:

- Finding 1: 25% of participants (2 out of 8) participants reported that they could not think of problems to report.
- Finding 2: 25% of participants (2 out of 8) participants reported that they felt like filter options were missing.
- Finding 3: 12.5% of participants (1 out of 8) participants reported that he did not know where to look for the required information.
- Finding 4: 12.5% of participants (1 out of 8) participants reported that she could not interpret the “6h” on the offer-overlay. (“Do I have to stay 6 hours?”)
- Finding 5: 12.5% of participants (1 out of 8) participants reported that she expected the profile of cafes to show the reviews of her friends.
- Finding 6: 12.5% of participants (1 out of 8) participants reported that the use of chips on the cafe profile was misleading, as different chips appeared in different locations, when they should have been grouped together.

### 8.1.2 What is the part of the prototype that has been more difficult to understand? Why?

Findings on parts of the prototype more difficult to understand:

- Finding 1: 50% of participants (4 out of 8) participants were confused whenever they saw the selected time in the pop-up with the booking information because it said 12:00 but it didn’t indicate until when, even when the offer said it was for 2 hours.
- Finding 2: 37.5% of participants (3 out of 8) participants didn’t notice the filters option which made it more complicated for them to go on the expected path for the task, instead they just clicked on everything appearing on the map until finding the “right cafe”.
- Finding 3: 37.5% of participants (3 out of 8) participants that used the filters option, were confused about what part of the filters was mandatory or if they could even use it to look only for one thing (like the halal option), for example, it

was very clear on the price because they asked that what should they select if it wasn’t on the task and are not sure what they should do.
- Finding 4: 25% of participants (2 out of 8) participants said that they would have expected a “wishlist” section in the profile so that they could be faster in finding different cafes that they have already seen and liked.

### 8.1.3 Can you describe your overall experience with this prototype?

Findings on the overall experience with design 1:

- Finding 1: 25% of participants (2 out of 8) participants said that some of the components are misleading as they seem to be buttons because they look similar or might be reused components.
- Finding 2: 100% of participants (8 out of 8) participants liked that the first screen they could see was a map, it felt very intuitive and easy to see.
- Finding 3: 50% of participants (4 out of 8) participants disliked that they had to calculate the time of the offers and that the time frame selected wasn’t displayed directly.

## 8.2 General impressions on second design: socially focused prototype

In the following section we describe the main problems users reported for the socially focused prototype. The main comments related to the interface being overwhelmingly filled with information, and relating to the struggle with completing the third task of the usability test.

### 8.2.1 What are the main problems you have found while using this prototype?

Findings on main problems:

- Finding 1: 37.5% of participants (3 out of 8) indicated that the interface was too cluttered or overloaded with information. Relevant comments were "too many things in one page" and "too much info but didn't find the info he wanted."
- Finding 2: 50% of participants (4 out of 8) described the interface as confusing or not intuitive. Relevant comments were "UI was more difficult," and "overall confusing".
- Finding 3: 37.5% of participants (3 out of 8) identified issues with the review or feedback system. Relevant comments were "I struggle to find how to leave a review on the location," and "no rating from the profile."
- Finding 4: 37.5% of participants (3 out of 8) found inconsistency issues between their expectations and the functionality of the app. "Feed would be expected to hold recent activity," "vegan filter didn't reflect in the results" and "sometimes didn't behave as the expectation he had."

- Finding 5: 12.5% of participants (1 out of 8) expressed that the app did not fulfil its intended purpose as a tool to search for coffee shops. "works more as a social app than a coffee shop finder."

### 8.2.2 What is the part of the prototype that has been more difficult to understand? Why?

Findings on main problems:

- Finding 1: The way of how leaving a review was implemented was completely different from the mental model of the users tested. 6/8 of users tested, found it as the most difficult feature to understand and perform. The reason is that they expected to find this feature in the detail page of the cafè.
- Finding 2: 2/8 users found the search too complicated. One prefers a map because it is faster to find all the information, the other one asks for a search unrelated to the friend's recommendation.
- Finding 3: Although during the observations we saw all of the users confused about the usages of like and recommend actions, only one of them pointed this out as a problem that confused him/her a lot.

### 8.2.3 Can you describe your overall experience with this prototype?

- Finding 1: 25% (2 out of 8) of participants indicated that the interface was cluttered or overwhelming. Relevant comments were "I didn't like it. It was cluttered and difficult to use" and "it was a bit overwhelming to open it and see so many places to go."
- Finding 2: 50% (4 out of 8) of participants described issues with usability or ease of use. Relevant comments were "so many things wanted my attention," "needs to be easier to find things," "should be more easy to use," and "a bit harder to use than the previous one."
- Finding 3: 50% (4 out of 8) of participants provided positive feedback on the app's interface and features. Relevant comments were "felt really confident when going through it," "I like the main screen more than the other prototype," "I would use it," and "Easy to use. Simple."
- Finding 4: 12.5% (1 out of 8) of participants highlighted specific aspects of the interface as confusing. Relevant comments were "the part regarding the last task was confusing."

## 8.3 Analysis of general impressions of participants

Generally most participants reported to prefer the requirements-focused prototype. They reported the socially focused prototype was too cluttered. The map view aligned with the users goal of navigating to find a location and they experienced it as simple to use.

### 8.3.1 What are the main problems you have found while using this prototype?

The design with most important problems is the Socially focused prototype, because participants reported it was too cluttered, they did not understand how to leave reviews, and because its social approach did not align with its intended purpose of searching for working cafes.

On the contrary, the other Requirements-rocused prototype has less problems, mainly related to the representation of information. The main problems noted were that it was not indicated which filter options were mandatory and that filter options were missing. Further, the information on the offer pop-up could not be interpreted as intended. In the profile page the location of various chips led to confusion and participants struggled to differentiate chips from buttons. However, the mental model of the prototype aligned with what subjects were expecting.

### 8.3.2 What is the part of the prototype that has been more difficult to understand? Why?

The design with more understandability issues is the Socially-focused Prototype, because it presented the subjects with much more information than they could quickly comprehend. The most severe problem was that users did not intuitively navigate through the profile to leave a review on past sessions. They expected to leave a review through the profile page of a cafe. Further, they did not understand the results of the search and the difference between the like and recommended actions.

On the contrary, the other design has less understandable issues. The most difficult thing was the information about time frames presented on offer pop-ups. Further, they did not discover the possibility to filter and which filter were mandatory.

### 8.3.3 Can you describe your overall experience with this prototype?

The design with more positive opinions is prototype one, because all participants said they enjoyed the map view for navigating the various options.

The design with more negative opinions is prototype two, because the interface seemed cluttered and overwhelming. However, half of the participants reported they enjoyed the overview of recent reviews given by friends.

### 8.3.4 Which is the prototype that you prefer? Why?

7/8 participants reported they preferred the Requirements-focus prototype. One summarised it as being “Simpler to use, more intuitive, less overwhelming”. The participant who preferred the second prototype explained that it was superior for being more detailed.

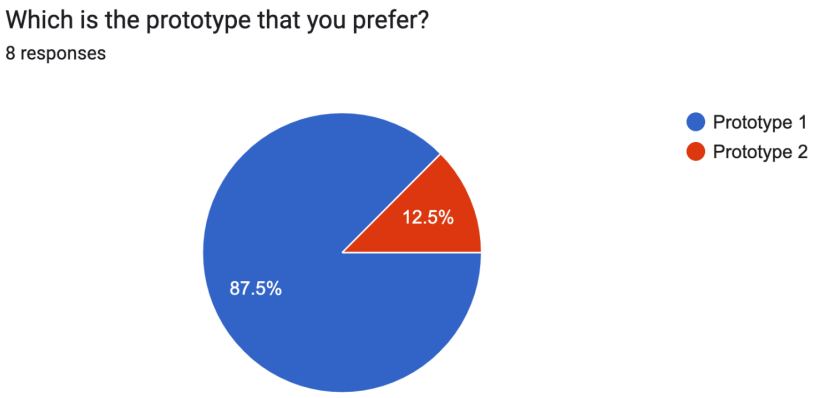



*Figure 9. User preferences among the two designs.*

### 8.3.5 What have you liked the most of each prototype?

For the first prototype, users have liked: The map view, the simplicity/intuitiveness, the step-by-step progression they experienced, and seeing your friends' recent reviews.

For the second prototype, users have liked: Better filter options, more informative while less cluttered profile pages of cafes, better features for time selection, seeing friends' recent activities, and having a feed to discover new cafes.

# 9 Relevant observations and usability problems

## 9.1 Observations for first design: Requirements-focused Prototype

Insights after observing how the first design was used:

- Insight 1 (positive): People used the search option to filter for individual filter criteria, such as halal or vegan, which we did not intend.
- Insight 2 (negative): People did not recognize the items on the map as “offers”. It was not entirely apparent to them what the “offer” pop-up afforded. Additionally, they commented that they expected to find more information in this view, such as the availability of wifi and laptop policy.
- Insight 3 (negative): Some users did not discover the filter option as quickly as expected or at all.
- Insight 4 (negative): The profile view led to confusion because we used Chips as a representation of data that was conducted with buttons. Subjects reported to be unsure which elements are clickable and which aren’t.

## 9.2 Observations for second design: Socially-focused prototype

Insights after observing how the second design was used:

- Insight 1 (positive): once users were given the tip that the place they needed to review had been booked through the app, they successfully managed on their

own to inspect the profile page and complete the task, identifying this section as the one storing information regarding user's activities.

- Insight 2 (negative): most participants misunderstood and were confused about which tab was selected (e.g. "my feed / discover" buttons on the home page).
- Insight 3 (negative): "save to favourite" button on the detail inspection page of every place is too little and not visible enough, requiring unnecessary effort to be found. Icons are misleading as well (the heart icon intended to be used when liking a place may have more associations to the favourite list than the bookmark one.
- Insight 4 (negative): the "events near you" section in the explore page - along with friends' stories in the home page feed - can be discarded since users did not interact with them and since they only have the effect of loading the page with information, causing distraction. A few participants tried to search for a place choosing a mood filter in the explore page.
- Insight 5 (negative): the detail inspection page of every place needs to host reviews (to be inspected) and a feature to allow users to publish them.

## 9.3 Summary of usability problems per prototype

*Table 14. Problems of the first design.*

| **First design** | **Problem** | **Possible solution** | **Severity** (cosmetic, minor, major, catastrophe) |
|---|---|---|---|
| Problem 1 | Offers on the map: The users were confused on what the offers meant. | When a user clicks on the map, the pop-up can be instead of a whole offer, just a screen where you can see more information, | Minor |
| Problem 2 | The subject used the search bar to filter for "vegan" or "halal". | We can allow the search function to find not only based on name, but also properties of the cafe. | Minor (solution is advanced) |
| Problem 3 | Users did not discover the filter. | We can make the filter more prominent, by making it text and icon. | Major |
| Problem 4 | The chips in the profile were difficult to interpret and differentiate from buttons. | We will change the way we position buttons and the design of chips and buttons to prevent this confusion. | Cosmetic |
| Problem 5 | Users were confused about what was mandatory to select in the filters. | We will add an asterisk "*" next to the categories that are mandatory in order to apply the filters. | Cosmetic |

*Table 15. Problems of the second design.*

| **Second design** | **Problem** | **Possible solution** | **Severity** (cosmetic, minor, major, catastrophe) |
|---|---|---|---|
| Problem 1 | Leave a review | Give the possibility to the user to leave a review directly from the detail page of the cafe. | Catastrophe |
| Problem 2 | Users did not discover the filter | We can make the filter more prominent, by making it text and icon. | Major |
| Problem 3 | Usage of icons | Avoid the use of icons with similar purposes such as hearts for likes, thumbs up for recommendations and bookmark to add to favourites. | Minor |
| Problem 4 | Overwhelming content | Decrease the number of information to be shown on each page and select them more accurately | Major |
| Problem 5 | Usage of tabs | Implement tabs in a more standard way in order to make users immediately understand the section they are on. | Minor |
| Problem 6 | Filters rankings | Specific filters for research (distance, date and time, menu…) should be accessible prior to filters used in the explore section just to get inspired while scouting (productivity, full immersion, group session…) | Minor |
| Problem 7 | Output for filtered research | Implement a better visibility of system status when showing filtered searched results . | Minor |

The design that has less relevant usability problems is prototype 1, because the only “major” problem in this prototype was that some of the users didn’t recognize the filter button available, but for the users that did find it, it had good usability, regardless the users that didn’t use it could complete the task with more actions. The rest of the problems were minor and didn't have any effect on the successful completion of the tasks for the users.

## 10 . Preferred design

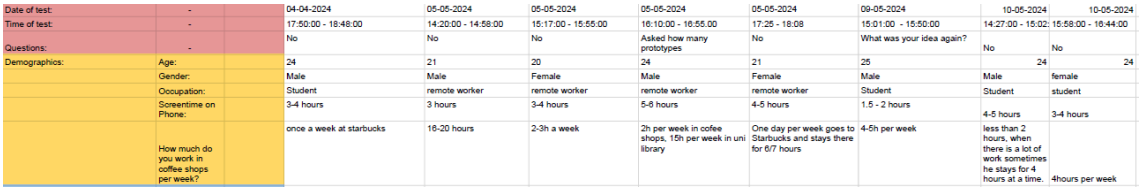
*Table 16. Comparison of usability results*

| | 1st design is better | 2nd design is better | Tie |
|---|---|---|---|
| Effectiveness | X | | |
| Efficiency | X | | |
| User satisfaction | X | | |
| User preferences | X | | |
| Usability problems | X | | |

The best design is the Requirements-focused Prototype (1), because it outperformed the Socially-focused prototype (2) in all areas. This is the design that will be used as the starting point for the high-fidelity prototype. However, the filters and profile page of the Socially-focused prototype were preferred by participants and will be integrated into our high-fidelity prototype.

# Annex A. Gathered data

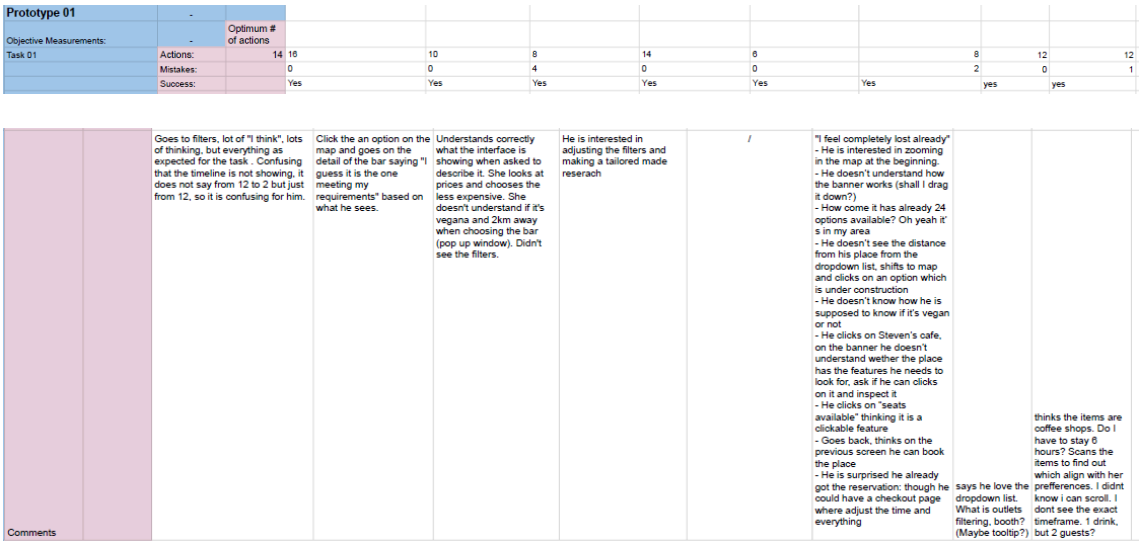
Demographic notes:



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date of test: | - | | 04-04-2024 | 05-05-2024 | 05-05-2024 | 05-05-2024 | 05-05-2024 | 09-05-2024 | 10-05-2024 | 10-05-2024 |
| Time of test: | - | | 17:50:00 - 18:48:00 | 14:20:00 - 14:58:00 | 15:17:00 - 15:55:00 | 16:10:00 - 16:55:00 | 17:25 - 18:08 | 15:01:00 - 15:50:00 | 14:27:00 - 15:02: | 15:58:00 - 16:44:00 |
| Questions: | - | | No | No | No | Asked how many prototypes | No | What was your idea again? | No | No |
| Demographics: | Age: | | 24 | 21 | 20 | 24 | 21 | 25 | 24 | 24 |
| | Gender: | | Male | Male | Female | Male | Female | Male | Male | female |
| | Occupation: | | Student | remote worker | remote worker | remote worker | remote worker | Student | Student | student |
| | Soreentime on Phone: | | 3-4 hours | 3 hours | 3-4 hours | 5-6 hours | 4-5 hours | 1.5 - 2 hours | 4-5 hours | 3-4 hours |
| | How much do you work in coffee shops per week? | | once a week at starbucks | 16-20 hours | 2-3h a week | 2h per week in cofee shops, 15h per week in uni library | One day per week goes to Starbucks and stays there for 6/7 hours | 4-5h per week | less than 2 hours, when there is a lot of work sometimes he stays for 4 hours at a time. | 4hours per week |

First design observations notes

Task 1



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Prototype 01** | - | | | | | | | | | |
| Objective Measurements: | - | Optimum # of actions | | | | | | | | |
| Task 01 | Actions: | 14 | 16 | 10 | 8 | 14 | 6 | 8 | 12 | 12 |
| | Mistakes: | | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 1 |
| | Success: | | Yes | Yes | Yes | Yes | Yes | Yes | yes | yes |
| Comments | | | Goes to filters, lot of "I think", lots of thinking, but everything as expected for the task . Confusing that the timeline is not showing, it does not say from 12 to 2 but just from 12, so it is confusing for him. | Click the an option on the map and goes on the detail of the bar saying "I guess it is the one meeting my requirements" based on what he sees. | Understands correctly what the interface is showing when asked to describe it. She looks at prices and chooses the less expensive. She doesn't understand if it's vegana and 2km away when choosing the bar (pop up window). Didn't see the filters. | He is interested in adjusting the filters and making a tailored made reserach | / | "I feel completely lost already" - He is interested in zooming in the map at the beginning. - He doesn't understand how the banner works (shall I drag it down?) - How come it has already 24 options available? Oh yeah it' s in my area - He doesn't see the distance from his place from the dropdown list, shifts to map and clicks on an option which is under construction - He doesn't know how he is supposed to know if it's vegan or not - He clicks on Steven's cafe, on the banner he doesn't understand wether the place has the features he needs to look for, ask if he can clicks on it and inspect it - He clicks on "seats available" thinking it is a clickable feature - Goes back, thinks on the previous screen he can book the place - He is surprised he already got the reservation: though he could have a checkout page where adjust the time and everything | says he love the dropdown list. What is outlets filtering, booth? (Maybe tooltip?) | thinks the items are coffee shops. Do I have to stay 6 hours? Scans the items to find out which align with her prefferences. I didnt know i can scroll. I dont see the exact timeframe. 1 drink, but 2 guests? |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| General observation | Scroll to search for laptops, doesnt find, click on apply filters. He scrolled up and down twice. After the result page, he would click on search to look for laptops but since he sees only one results he clicks on it. Sometimes he does a confused face. Sees maps and undesrtands what's showing, uses filters correctly, is a bit confused about change date / date selected but manages to do the correct thing, manages to complete task overall | Finds his needs and books the place. He is doing the task in a different way as we thought, but he managed to do it in less time and actions. Confused with time at first (in th popup), but good after. Good, finds the end of the task, very fast because from the map he found the only offer that aligned with his requirements, didn't filter and booked. | She chooses all the places which lead to under onstruction pages. | He asks information about the filter selection (can he set the price even if it's not in the task, along with other features such as quiet and chill) | she clicks on a random cafe in the map, then she clicks on steven cafe and she books from the popup directly | He says it's a lot to do in the task so lost on where to start at the beginning.He asks on how to get information to check the constraints. He completes the task but is not sure how he did it or if it's really complete. | checks list -> filters -> sets distance -> set timeframe -> adds guest -> selects date -> clicks wifi -> lunch -> vegan -> submit -> clicks on only offer -> book now | looks at the list -> filters -> less than 2km -> timeframe -> number of guests -> date -> wifi -> lunch -> vegitarian -> scroll -> apply -> click on item -> book now |

## Task 2

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Task02: | Actions: | 4 | 6 | 4 | 4 | 4 | 5 | 4 | 4 | 10 |
| | Mistakes: | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| | Success: | | Yes | Yes | Yes | Yes | Yes | Yes | yes | yes |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Comments: | | Doesnt seem confident on what he does, seems he is quite unsure, but he is taking the right actions | She understands from the description that the place sells Halal food, easily gets there and adds it to the wishlist | Searches for "halal" in the search tab | Once she is on the popup in the map she says "there is no option to add to my whishlist" | - He goes to friends section, but realises he doesn't know the name of the friend<br>- From the list he couldn't see whether specific food the places were offering<br>- Doesn't understand if he's seeing her friend's activity / what she liked ... | What is the difference between lower chips and upper chips? I should have filtered before going to friends. Usually I would just look at halal restriction and then look if a friend reviews. | unclear about task. Is it about friends or finding the place? "I am not sure this is the place my friend likes" |
| General observations: | No problems on this task | Completes the task, pretty fast. Was confused on which friend to choose but selects the first and goes on with the task. | She manages to complete the task pretty quickly and without committing errors. | He is very keen on checking the monet range | Search -> "halal" -> clicks on the result on the map clicks on the name -> see the detail page of the place and add to whishlist | His attention is more on reading the task and he forgets what is available to see on the profile. | Friends -> Sophia -> Clicks on soukis -> adds to wishlist | Search -> "halal" -> checks list -> clicks on offer -> clicks on profile -> see more for the reviews ! -> scrolls ! -> Goes to friends -> Sophia -> clicks on soukis review item -> Adds to wishlist |

## Task 3

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Task03: | Actions: | 8 | 15 | 8 | 7 | 9 | 9 | 7 | 10 | 6 |
| | Mistakes: | | 2 | 4 | 1 | 3 | 1 | 1 | 1 | 0 |
| | Success: | | Yes | Yes | Yes | Yes | Yes | Yes | yes | yes |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Comments: | Difficult with iphone keyboard | Goes to profile as first action->mistake. Then goes to activity -> mistake. Then return to map and search for the cafe. From here he correctly leave a review pretty quick and sure about what to do | Clicks on the five star, but then clicks on review. | He provided insights for a shortout but still managed to accomplish the task | very confident and on point | - Photo of what? (When reading the task)<br>- Asking if he booked his stay through the app, no answer given<br>- Thinks he's done after sending the review and prior to receiving confirmation banner | | |
| General observations: | After three tasks he seems more confident with the app (learnability). When he sees too much content (e.g. coffee profile page) he do a confused face (minimalism heuristic). He tries to leave a review directly from the stars he sees on the profile of the coffee -> mistake. He expect to see his review and not only the feedback of the review completed. Forgets one part (does not add photos) but manages to complete overall task. Expect to see that it is mandatory to upload pic to publish the review. He is confused on why he cannot see his review after publishing it | Correctly leave a review | She thinks that by clicking on star she rates the place | He thinks that a wishlist should be in the profile section. It's also more conveneit and faster instead of searching each time in the map, look for the results and finding the one you're looking for.<br>He says too complicated. He would have given up this task.<br>More in general this prototype has too much content and it is not intuitive. tried to find the functionality in other places (insisted on finding in favorities). But he eventually did it. | Clicks on sukis cafe -> see the popup-> goes to the page of detail of place clicking in the name -> clicks on leave a review and does it very quick and confident | Doesn't have problems, finds where to send review fast. | Activity ! -> Back to Map -> Search Souki -> click on it -> click on link to profile -> leave a review -> 5 stars -> comment -> image -> submit | Clicks on soukis cafe -> leave a review -> rate as 5 -> write "amazing coffee" -> picture -> submit |

# Second design observations notes

## Task 1

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Prototype02** | - | | | | | | | | | |
| Objective Measurements: | - | Optimum # of actions | | | | | | | | |
| Task01: | Actions: | 17 | 18 | 17 | 20 | 18 | 18 | 17 | 16 | 14 |
| | Mistakes: | | 1 | 5 | 2 | 1 | 3 | 4 | 3 | 1 |
| | Success: | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Comments: | | Clicked on filters but was confused so he had to read the task again. Uses the features to check his needs.Clicks on menu, and is vegan. Books the offe, everything seems correct o him, he books and at this point it is smooth for him. | He roams around the app a lot. He explores a lot of places that are not yet implemented. | Sees plaoes because its on discovery, sees the filters, goes smoothly from there to select the requirements, does all the expected actions like click on features, menu, schedule. Books the place because its good with the task. Completes the task. | He expect to find the time selection on the detail of the place where there are all the info about it (schedule, menu, ) | Social media app, profile, friends, feed, what other people recommend or like about cafes. Asks if the black one is the only available i the hour schedule. | - Understands the layout is different<br>- Understand he's in his feed and what it shows<br>- Understand's friends' activities on top<br>- Understands navbar<br>- When going to explore, he sees 2km distance is settled<br>- Doesn't understand events and promotions<br>- Understands he can selects cafes based on his mood, selects productivity expecting to find recommended cafes<br>- He goes back home because he doesn't know where to search, ASKS IF HE CAN SWITCH TO discovery mode<br>- He clicks on a place he sees on the homepage, because he sees a friend finds it productive<br>- Find confusing the fact that the name of the place is below the picture and not above<br>- He does not see the distance from his place, so goes to feature to check it<br>- The menu convinces him that the place is vegan (couldn't find a label on the detail inspection page showing the place is vegan). Does not know about the mushroom steak, clicks on the online menu hoping to inspect it<br>- Is interested in scrolling down through the pictures, but asks why ? They're not useful to him<br>- Not sure if he's in the rating or feed section<br>- Goes to the schedule section hoping to see if the place is free during selected hours<br>- Confused about what graph next to the schedule means, wifi connection? Asks if he can clicks anywhere in that window<br>- Happy to see every detail is already set | There is a filter set to 2km. Date and time is set. | thinks she is on discovery. What is the difference between discovery an explore? Is latina my location? or am I searching in that area? I am not sure if todays date is selected. The price filter should have a min and max not only max. cant see vegan food in booking. "another confirmation" |

| ID -> | | 01_ | 02_ | 03_ | 04_ | 05_ | 06_ | 07_ | 08_ |
|---|---|---|---|---|---|---|---|---|---|
| General observations: | | He expected the map to appear.. He is confused. clicks on groups which doesnt exist. Wants to rectify his selection on filters. Expected vegan only, but gets results in the feed with other results.He needed to reread the task multiple times. Expected a map when going to search, is confused, does not know the mood, sees search on top. manages to use filter selection correctly. Goes back to filters to see if he checked free wifi, and checks it. Sucoessfully completes the task | Does not find the information he is looking for on the first page. Confused clicks on productivity. Wonders what "events and promotions" are. Clicks on first item. Clicks on schedule. He isnt sure if he can work with a friend. Returns home. Clicks on the thrid item. Clicks on stevenis cafe. Schedules the time. Clicks book now. Books the place. No more info of the place on the first page(he expected that), clicked on productivity and full but they don't exist. Manages to go to the cafe profile through his feed, clicks on the pop up of calendar bc he is confused about where to see that he can work with his friend. | At first, she was looking around everything and with the filters it was easy to find the right place. | Tries to go on discovery. Then goes to explore -> search becuase he was looking for a specific name, but then he realise that the task has not a name so he correctly goes on filters and he feels pretty confortable in it. See the results, interpretate the icons (he guess the leaf is vegan but it is not 100 clear), clicks on the first result and opens the pop up schedule where iihe tries to interact with (such as the second tester). He decides to book and finds everything there and with no difficulties he books the place. | Explore, tries productivity, tries con, goes to search and tries to search vegan/work/cafe,home, scroll and see if she can find a recommendation, likes the first cafe so clicks on it. Goes to expected info, confused with time schedule, then completes task.Clicks notification for booking , so goes to profile, and checks the notification in bookings. | READ INFO IN ABOVE CELL | clicks explore -> click productivity -> clicks search -> types "workplace" -> filters -> sets "wifi" and "laptop" -> selects with friend -> study mode -> vegan -> submit -> checks lisas -> checks stevens -> clicks menu -> book now -> book now -> confirm -> close confirmation pop-up | explore -> filters -> wifi -> laptop -> clicks date -> scrolls -> group work -> silence -> check menu -> vegan -> submit -> clicks stevens -> book now -> scrolls -> books -> confirms |

## Task 2

| Task02: | Actions: | 6 | 6 | 9 | 6 | 7 | 5 | 10 | 6 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mistakes: | | 1 | 2 | 0 | 2 | 1 | 2 | 0 | 0 |
| | Success: | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Comments: | | Halal options are easy to find, confused in the profile when he sees a lot of pictures, wants to scroll. | Explored some pages that were not implemented. Seems a bit nervous after not finding the right path. | Comments she would do the same than the previous task. | "More complicated than prototype 1 to find the place" he asks for more clear information | Seems confused with the task and asks if she has more info. Goes smothly after looking at the prototype and trying to complete the task. | - Scrolls down through homepage looking for someone who has recently gone to Halal place<br>- Asks about features (icon) showing, especially one regarding lack of plugs<br>- Picks randomly items from the feed, but the pages are under construction. "I'm a little bit lost at the moment to be honest<br>- Goes to search and types halal food<br>- Clicks on the first item showing up in the recommended section<br>- Checks the menu<br>- Clicks on the Wishlist item, but wasn't sure because he though either that one or the heart would work as wish lists | | Do I want to follow? probably not. |
| General observations: | | Looks a lot to see where he can find his friend, didnt notice the screen selectio of the screen. Not succesfully understanding he's on his feed and not sure wether to serach from. Sucoessfully goes to filter section and research corrrectly. At the beginning scrolls down the page to find wishlist, is confused, but then sees wishlist save icon on top and manages to complete task sucoessfully. | Opens Profile. Checks his friends, but it is not implemented. Clicks messages and it is not implemented. Clicks explore. Search halal. Finds Soukis. Checks the Profile. Adds to wishlist. | Goes to explore, filters halal plaoes, sees the recommended by frinds so clicks on the first place. | Explore -> search "halal place"-> first result (not happy about the cleaness of the choices) -> click the name (nothing happens) -> save correctly | Explore, and ind friend. Search halal, clicks on the second place, clicks on sukis, | READ INFO IN ABOVE CELL | explore -> filters -> halal -> submit -> soukis -> save | search -> halal -> clicks on soukis -> clicks save |

## Task 3

| Task03: | Actions: | 9 | 12 | 7 | 13 | 14 | 12 | 17 | 17 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mistakes: | | 6 | 5 | 1 | 2 | 2 | 2 | 4 | 3 |
| | Sucess: | | No | No | No | Success after tip to go through profile. NO SUCCESS | no | Sucoess after tip about the place being booked via app | Sucoess after tip about the place being booked via app | Sucoess after tip about the place being booked via app |
| | Comments: | | He is confused with the task, not sure if he has to think that he already went there with the app.If he already went to theplace he would expect the place to appear in his feed, or in his history of visited places. Tries ratings and doesnt find the solution. Tries to click the image of the profile, tries the heart but heliked the picture. Starts to feel stressed so he rereads. He expects somehwere where he can leave a general review.Clicks on the profile, clicks on my comments, favorites doesnt understand why he cant find the place to leave a review. | Clicks on my Feed, but is already on my feed. | Wants to go to rating from the profile to leave a review, tries recommend. Expected to see somewhere to leave a review, it seems that she cant find where so she thinks of only uploading a picture to the feed with the descritions of the task | Pre-consideration: In the first prototype he said that he would expect to find it where we put it in this second prorotype, let's see his behaviour now. He doesnt know how to leave a comment and so asks for help | Add a rating, she expected to see something to leave a review from the profile of the cafe. Also tries recommend, says she is very confused. Says that she would never expect to find that in the profile or past bookings. | - Looks for the cafe in the explore section by typing the name in the search bar<br>- Tries to click in the photos in the bar's feed, thought the heart bottom on each photo would be connected somehow to review<br>- After being given the tip (you booked through the app), he goes to the right section (profile)<br>- Study session is a bit confusing, because the app had moods and studying was just one of them | recommendation could be related to sharing feelings and impressions. Just likeing is not a recommendation. looks for a button to post. He is stuck, because he was expecting to rate from the profile. But now he doesnt know where to look. | I dont see my history or anything like that. After search I would expect a list. |

| ID -> | | 01_ | 02_ | 03_ | 04_ | 05_ | 06_ | 07_ | 08_ |
|---|---|---|---|---|---|---|---|---|---|
| General observations: | | He searches directly for the cafe, he is confused with the recommend and leave a review. what if i want to leave a review and i dnt want to recommend. Didnt think that needed to go to history, expected the button to be in ratings or somewhere else. Important insight: you can only leave a review if you make an assumption that you booked with the app before the place. Failed to complete the ask.He expects recent visits to be on his feed or his profile: still, he goes to search section and types Sukis. He lands in the page place, and is confused: how can he rate it without recommending it? Unsuccessfully tries to understand how to leave a review, finally lands in profile section. He does not manage to complete the task | Clicks on explore. Goes to soukis cafe. Clicks recommend it. Clicks ratings, but are under constructions. Clicks on the foto loon, but it is not implemented. Clicks on my profile. Clicks favorites. He is lost. Clicked on recommended and rating and seems confused why it doesn't exist,Sees photos and wants to add the review theought there. Says he is lost and couldn't complete the task. | Again uses explore, searches directly sukis, tries camera and other features. We redirect her to the profile page. clicks on My comments, favorites, help, friends, parameter. Didn't complete the task, even after tipp to go through profile. | Explore ->search -> access a place -> click recommend (expect to add to place he likes). After help he goes on profile and asks about study session, then he access there and feels comfortable about it (he moves fast). | Explore, profile. My comments. After tip of profile finds the eview. | READ INFO IN ABOVE CELL | explore -> search -> soukis -> ratings !-> recommend !-> clicks on photo ! -> home !-> profile -> study session -> past sessions -> scroll -> click review -> type "amazing cafe" -> add image -> add stars -> comment | explore -> search for "soukis" -> recommend ! -> clicks ratings -> clicks on picture -> profile -> my sessions -> past sessions -> scroll -> "leave review" -> rating -> "amazing coffee" -> picture -> submit |

## First design SUS

| Informazioni cronologiche | Participant ID | Date of year | Time | 1. I think that I would like to use this system frequently. | 2. I found the system unnecessarily complex. | 3. I thought the system was easy to use. | 4. I think that I would need the support of a technical person to be able to use this system. | 5. I found the various functions in this system were well integrated. | 6. I thought there was too much inconsistency in this system. | 7. I would imagine that most people would learn to use this system very quickly. | 8. I found the system very cumbersome to use. (Cumbersome = hard to handle) | 9. I felt very confident using the system. | 10. I needed to learn a lot of things before I could get going with this system. | 1. What are the main problems you have found while using this prototype? (Prototype 1) | 2. What is the part of the prototype that has been more difficult to understand? Why? (Prototype 1) | 3. Can you describe your overall experience with this prototype? (Prototype 1) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/04/2024 18:20:24 | 1 | 04/04/2024 | 18:11:00 | 1 | 2 | 5 | 1 | 4 | 5 | 1 | 4 | 1 | 5 | 1. There was no information which fields are required and which not<br>2. There were filtering options that were not present. For example Laulpya permitted was something i believed I would be able to search by. | upload the picture Confusion, because it was not clear which friend. (Task definition) | (very intuitive) Flexible, because there was multiple paths to find you way. |
| 05/04/2024 14:36:20 | 2 | 05/04/2024 | 14:32:00 | 5 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 1 | 5 | mistake from him, forgets the task, no problems on the prototype. | No part difficult to understand, easy to use | Likes it, good, easy to use and intuitive, everything is written, goes step by step |
| 05/04/2024 15:33:07 | 3 | 05/04/2024 | 15:30:00 | 3 | 1 | 5 | 1 | 4 | 1 | 4 | 1 | 1 | 5 | I didn't find any problem to use this prototype | I feel like all of the part of this prototype where easy to handle | I feel like this prototype is whitgr to other application therefore it's really easy to use |
| 05/04/2024 16:27:28 | 4 | 05/04/2024 | 16:23:00 | 4 | 1 | 5 | 1 | 4 | 2 | 5 | 1 | 1 | 5 | Profile | The settings, needs 5 minutes for understanding all the functions | I think is a good prototype, perfect for the students |
| 05/04/2024 17:36:49 | 5 | 05/04/2024 | 17:34:00 | 4 | 1 | 4 | 1 | 5 | 1 | 5 | 1 | 1 | 4 | When I went to add the cafe to my wishlist I didn't know where to click at first. | It is easy to comprehend, I did not have a problem understanding it. | I think this prototype is easy to use and very intuitive in general. |
| 09/04/2024 15:22:15 | 6 | 09/04/2024 | 15:18:00 | 4 | 1 | 4 | 1 | 5 | 1 | 5 | 2 | 3 | 2 | visibility of information he was looking for. Sometimes he wasnt sure where to look and where to find the nessecary information. | cafe profile has a lot of information. He couldnt differentiate buttons from labels. There was too much information. | He liked it. It went pretty smooth. |
| 10/04/2024 16:25:31 | 7 | 10/04/2024 | 16:21:00 | 4 | 1 | 5 | 1 | 4 | 2 | 5 | 2 | 4 | 1 | No problems, just some components that are reused in different positions are misleading, because its different types of information, tags in the cafe profile | It was easy, none | very good, liked the way the siblings, animation work, consistent and reaches the goal of the task |
| 10/04/2024 15:25:51 | 8 | 10/04/2024 | 3:24:00 | 3 | 1 | 5 | 1 | 5 | 1 | 5 | 1 | 5 | 1 | In the biginning unsure about what the "fin" means. Is it mac or do I have to stay? Why does my friends review is not shown in the Profile? On the booking popup you have to calculate the timeframe. | It was super easy. Except the friends review not showing up. | I like that is it simple. You can filter a lot of stuff. I see the location, how much time. Can I see directions? It had everything I need. |

## Second design SUS

| Informazioni cronologiche | Participant ID | Date of the test | Time of the test | 1. I think that I would like to use this system frequently. | 2. I found the system unnecessarily complex. | 3. I thought the system was easy to use. | 4. I think that I would need the support of a technical person to be able to use this system. | 5. I found the various functions in this system were well integrated. | 6. I thought there was too much inconsistency in this system. | 7. I would imagine that most people would learn to use this system very quickly. | 8. I found the system very cumbersome to use. (Cumbersome = hard to handle) | 9. I felt very confident using the system. | 10. I needed to learn a lot of things before I could get going with this system. | 1. What are the main problems you have found while using this prototype? (Prototype 2) | 2. What is the part of the prototype that has been more difficult to understand? Why? (Prototype 2) | 3. Can you describe your overall experience with this prototype? (Prototype 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/04/2024 18:48:22 | 1 | 04/04/2024 | 18:30:00 | 1 | 4 | 2 | 2 | 3 | 2 | 2 | 3 | 1 | 3 | It was cluttered. A lot of information on screen. Feed would be expected to hold recent activity. Filter: vegan only didnt reflect in the results. | Leaving a review: I dont understand why I cannot leave a review to the place from various paths. | I didnt like it. I was cluttered and difficult to use. So many things wanted my attention. A lot of elements that were distracting. |
| 05/04/2024 14:52:46 | 2 | 05/04/2024 | 14:50:00 | 5 | 5 | 2 | 1 | 4 | 5 | 5 | 4 | 3 | 5 | - UI was more difficult, too many things in one page, no map difficult to see where he can go. Can't find how to write, overall confusing, too much info but didn't find the info he wanted. Not intuitive. | To find a cafe. Prefers to find in a map, sees around and clicks and gets the info. | Can be useful, but it needs to be easier to find things. |
| 05/04/2024 15:54:01 | 3 | 05/04/2024 | 15:50:00 | 3 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | I struggle to find how to leave a review on the location | Most of the part where easy to understand, again just the review part which was confusing | It's very similar to other application in the way it's presenting so I felt really confident when going through the item and using it. The part regarding the last task was confusing though. |
| 05/04/2024 16:47:04 | 4 | 05/04/2024 | 16:41:00 | 3 | 4 | 2 | 3 | 3 | 4 | 3 | 4 | 3 | 3 | Leave the feedback and find the place that I want | The feedback because is not smart | The idea of interactive app in not bad but should be more easy to use |
| 05/04/2024 17:54:06 | 5 | 05/04/2024 | 17:50:00 | 3 | 4 | 3 | 1 | 3 | 1 | 4 | 2 | 3 | 1 | I feel like this prototype is kind of counterintuitive and works more as a social app than a coffee shop finder. | I had the hardest time looking for a coffee shop without using friends recommendations or anything else. If I just wanted to see coffee shops available (not specifically places that my friends want to recommend, it would be hard). | I think this prototype was a bit harder to use than the previous one and it was a bit overwhelming to open it and see so many places to go (see friends profiles + recommendations + etc) |
| 09/04/2024 15:48:00 | 6 | 09/04/2024 | 15:44:00 | 3 | 4 | 3 | 3 | 4 | 4 | 3 | 4 | 2 | 5 | Very confusing, sometimes didn't behave as the expectation he had. | The review: why cant he review it from the site instead of having to go to the profile. | First look, he likes the main screen more than the other prototype. Ordered and scrollable, easier introduction. |
| 10/04/2024 14:49:13 | 7 | 10/04/1997 | 14:45:00 | 3 | 2 | 4 | 2 | 3 | 1 | 4 | 2 | 4 | 3 | the thing of the review: It is not placed in the right position. I would not check my profile. I will try it in the profile. | Same thing. What action to take from the profile page. What is the difference between recommend and like? | Overall it is a good idea. I would use it. With some changes I can see some people using it. It solves a very important problem. He does not like to book places online, but knows people who do. |
| 10/04/2024 15:44:47 | 8 | 10/04/2024 | 15:40:00 | 3 | 1 | 5 | 1 | 4 | 1 | 5 | 1 | 5 | 1 | I thought I am on discovery. Two like buttons. No rating from the profile. But I understand that you can only leave a rating to a place you have already been. | rating thing. | Easy to use. Simple. More like social media. I like that I can see what my friends like. If they like them ill try out as well. |

## Prototypes comparison

| Timestamp | Participant ID | Date of the test | Time of the test | Which is the prototype that you prefer? | Why do you prefer this prototype? | What have you liked the most of prototype 1? | What have you liked the most of prototype 2? |
|---|---|---|---|---|---|---|---|
| 4/4/2024 18:48:40 | 1 | 4/4/2024 | 6:48:00 PM | Prototype 1 | First one. | The Map. Because it reflects the spacial search. | I liked that there were filters for everything. In the first there was no filter bz laptop usage. Had to check individual profils. Second prototype did that better. |
| 4/5/2024 14:54:47 | 2 | 4/5/2024 | 2:52:00 PM | Prototype 1 | It has a map and is really useful, all the info was there, can see everything around, faster to change through screens | Map, step by step, info | The information of the profile of the cafe, cool to have everything, photos, schedules, time |
| 4/5/2024 15:56:26 | 3 | 4/5/2024 | 3:54:00 PM | Prototype 2 | More precision in the second one. | Easier to access, similar to other apps, intuitive | Easy to find something specific, location, wifi, all the information was available |
| 4/5/2024 16:51:53 | 4 | 4/5/2024 | 4:47:00 PM | Prototype 1 | Easier to find places, just go without a lot of distractions. | Intuitive, would use frequently , filters good, (but would like to add more something that he can also share with his friends), payment to share the check with friends. More interactive, partnership with another apps like satispay? | Likes the interactive, the place and the mood but too complicated, should be more to find a place. |
| 4/5/2024 17:56:18 | 5 | 4/5/2024 | 5:55:00 PM | Prototype 1 | Simpler to use, more intuitive, less overwhelming | Map that sees exactly where the cafes where., very intuitive, except of having to click on the name instead of a button of more info | A lot of recommendations in the open, once you went in a lot of info, likes the buttons of (feature, schedule...) |
| 4/9/2024 15:49:57 | 6 | 4/9/2024 | 3:48:00 PM | Prototype 1 | More consistent, even if it had more information it was more visible. | The simplicity, everything you need on where you expect them to be. | How you see more easily the activities of friends, stay more updated on where they go. |
| 4/10/2024 15:47:57 | 8 | 4/10/2024 | 3:47:00 PM | Prototype 1 | More about finding the places on her own than looking at friends opinion | Simple, can filter a lot of things, a lot information that is helpful. | Likes the social media idea, see the friends opinion in the first page and maybe can discuss later with them, just not a social media person. |
| 4/10/2024 16:29:28 | 7 | 4/10/2024 | 4:25:00 PM | Prototype 1 | He likes more the aesthetic part, how the content is presented. The map is more efficient for finding places. | The filters, the integration of the social part. Its easier to understand your friends activity, the review points directly to the cafe. | The filters, likes how you leave the reviews because it's social network so it's nice for a person that wants it to feel like a social media and what they would look for. |

# Annex B. Detailed changes in schedule

- New version of the cafe's detail page regarding the "Book now" button:

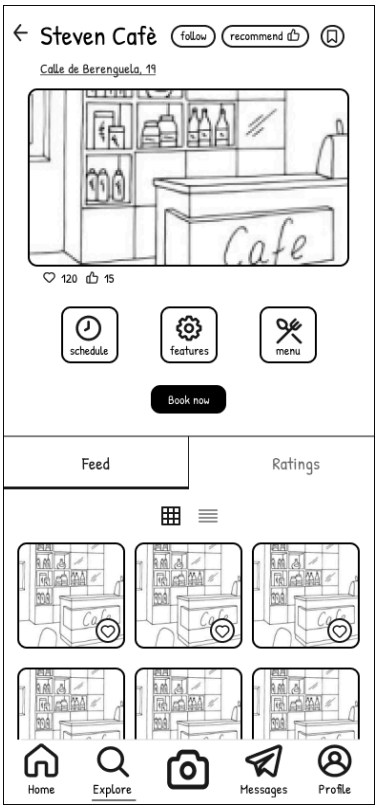



*Figure 10. New design of the cafe's detail page.*

- New information in the offer to match the task (change in number of guests, time and date):

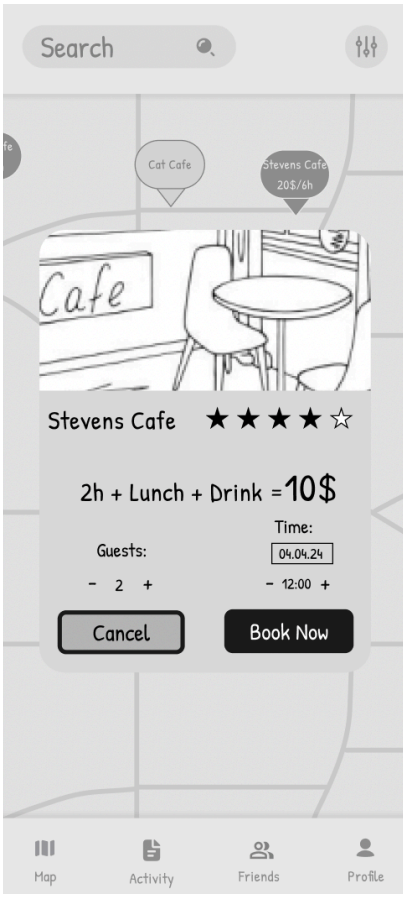



*Figure 11. Offer screen.*