User-Centered Design Week 8 Template

Final deliverable content (part 2.2)

Please use this template to prepare the PDF report for your final report part 2.2 group deliverables of week 8. Please respect the word limits and the structure provided. Any material exceeding the word limit, or outside the provided structure will not be read.

Do not forget to calculate the word count where indicated.

Step 1: THE PLAN

An **evaluation plan for A/B Testing** of the 2 versions of your prototype, describing the goals, method, and measures for the evaluation.

Purpose and Goals (max. 50 words)

What are you going to evaluate, and why (high level)?

The purpose of testing our prototype is receiving input from users who were not immersed in the design process, and do not know how the app is supposed to work. The goal is to adapt our design based on data obtained from the questionnaire and user-tests.

Word Count: 46

Research questions (list only, max. 5) (remember the 2 usability/2 UX factors)

What are the exact questions that you are addressing with the evaluation (low level)? Be specific, so not “Is my website usable?” But: “How efficient are users in ordering a pizza through our new website?”

a. How satisfying is the overall experience of finding a roommate for users of the app?
b. Does the app ensure that users use recognition over recall while performing the tasks provided?
c. How effective is the app in helping the users find their ideal matches for their roommates?
d. How efficient are the users in finding a match from the profiles provided on the app?
e. To what extent do the users find the app engaging to use?

Word Count: 79

Desired participant characteristics (max. 50 words)

What are the properties of the participants in your evaluation? How many participants?

The participants should be students (aged 18-29) studying in a university with varied nationalities and preferences with respect to finding a roommate. We also want to test participants with varying incomes (from no income to some). We would like to test the two versions of the prototype across 5 participants.

Word count: 50

Methods (max 150 words - YOU MUST USE THINK-ALOUD & QUESTIONNAIRE(s))
What method are you using in your evaluation? E.g., interviews, questionnaires, observations, etc. Describe the general setup of the test (e.g., introduction of test to participant, pre-test questionnaire, task 1, post-test questionnaire, etc.).

The test is conducted on Maze which prompts the user automatically on what tasks to perform and what are the steps involved in detail. Furthermore, to test the application, a walkthrough method will be used where the user will discuss usability issues associated with dialog elements involved in the scenario steps. During the walkthrough test-subject will be required to think aloud.

The questionnaire (post-test) includes the System Usability Scale as a tool to get an understanding of the apps usability. It consists of 10 questions with five response options for respondents; from Strongly agree to Strongly disagree. The last section of the questionnaire helps to derive qualitative data along with the think-aloud method.
The data collected from the questionnaire (answers from the users) and Maze (such as the number of clicks or time taken to complete a task), will be compared to cross-check the results.

Word count: 145

Task list (describe 1 task in full, name titles of any additional tasks)
What tasks are given to the participants to complete during the evaluation?

The given 2 missions for both versions of the app are the same:
Mission 1: Find the profile of a particular user and find the location of their house.

Step 1. To find the profile of Lia Nguyen from the repository of profiles.
Step 2. To find more information about her.
Step 3. To find the location of her room.

Mission 2: *Find the matched profile and open the chat of the person the participant has matched with.*

Step 1. To identify the profile the participant has matched with.
Step 2. To find their respective chat function and open the conversation

Word count: 101

Equipment & logistics (max. 50 words)
What equipment are you using to run the evaluation, and to record your data? Where will the test take place?

A device (pc, laptop, phone) will be necessary to view and interact with the app. Also, a spreadsheet program must be used to record our results.
Programs and sites used: Google forms (for questionnaire), Maze (for user testing), Figma (for creating prototype).

Word count: 42

Measures (list only)
How are you going to capture your data, and what are you going to analyse? E.g., a specific questionnaire (there are standard questionnaires such as SUS, AttrakDiff, UEQ, NASA-TLX, …), word counts, participant's heartrate, etc.

- Number of clicks (to test efficiency)
- Number of errors (to test learnability)
- Time spent on each action (to test efficiency and learnability)
- Normalizing questionnaire results into proper visualizations for quantitative data using the System Usability Scale. (to test UX goals, check satisfaction and cross-check above mentioned usability goals)

Analysis methods (max. 100 words)
How are you going to analyse the data collected to answer your research questions?

The questionnaire will be used to answer how satisfying "ROOMIE" is experienced and how engaging it is to use. These answers will be obtained by creating statistical data, which will be possible after normalizing the answers of the questionnaire.

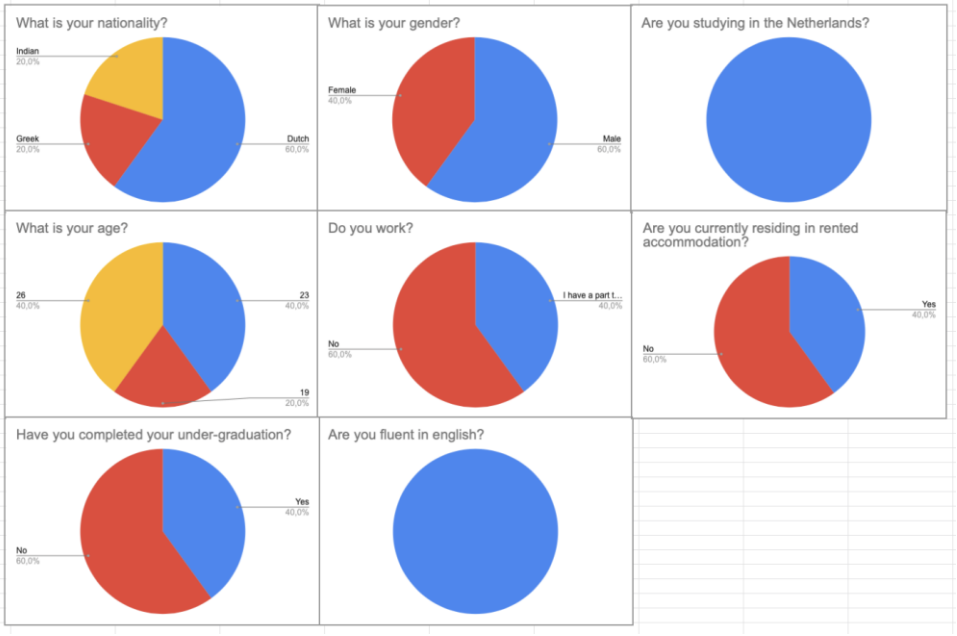
The user tests will be used to observe if the application ensures that the user uses recognition over recall; to measure the efficiency and effectiveness by measuring the number of clicks. Data of click heatmaps in the program we are using (Maze) will provide an understanding of our users' behaviour using our app and help gauge the errors they make.

Word count: 99

Step 2: YOUR RESULTS

2. Overview of the actual participants' demographics of those who participated (max. 150 words)

The prototype was tested on 5 participants. The actual participants were of varying nationalities (Greek, Dutch, Indian). They were aged between 19 and 26. All the participants are students who study in the Netherlands. 2 out of the 5 participants have part time jobs. 3 of the 5 participants were male and 2 were female. All the participants are fluent English speakers, apart from their native languages. 4 out of 5 participants are currently residing in rented accommodations away from their homes. 2 of the 5 students are master's students who have completed their under-graduation.



Word count: 95

3. The informed consent form used (only the empty form, DO NOT include personal data!)

Subject Consent Form

[Brief title of the study]

- I have been given information and I understand what this research is about. I was also able to ask questions. My questions have been answered to my satisfaction. I had enough time to decide whether to participate.
- I know that participation is voluntary. I know that I may decide at any time not to participate after all or to withdraw from the study. I do not need to give a reason for this.
- <if applicable> I give permission for my [GP/treating specialist(s)/pharmacist/…] to be informed about my participation in this study and to be informed about […].
- I know that some people can access my data. These people are […].
- I consent to gathering and usage of my data for scientific publication and additional research on my data.
- I consent to my data being stored at the research location for another [15] years after this study.

I want to participate in this study.

Name of study subject:
Signature: Date: __ / __ / __

I hereby declare that I have fully informed this study subject about this study.

If information comes to light during the course of the study that could affect the study subject's consent, I will inform him/her of this in a timely fashion.

Name of investigator (or his/her representative):
Signature: Date:__ / __ / __

The study subject will receive a copy of the signed consent form.

4. **A clear and concise description of the evaluation results (max 300 words)**

Prototype 1:

Mission 1

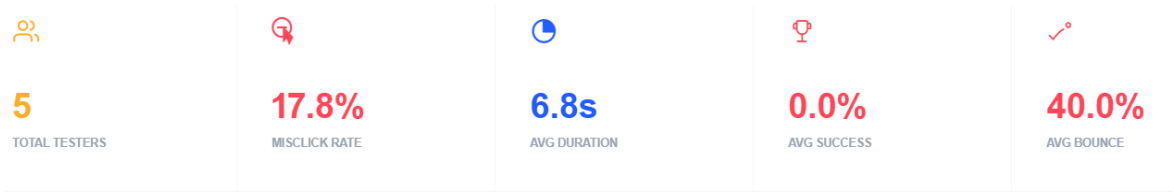


Figure 1: Results mission 1, prototype 1

This had a bug in the last step that disabled the user from finishing the mission after completing the specific tasks. which resulted in a failure rate of 40%.

Mission 2

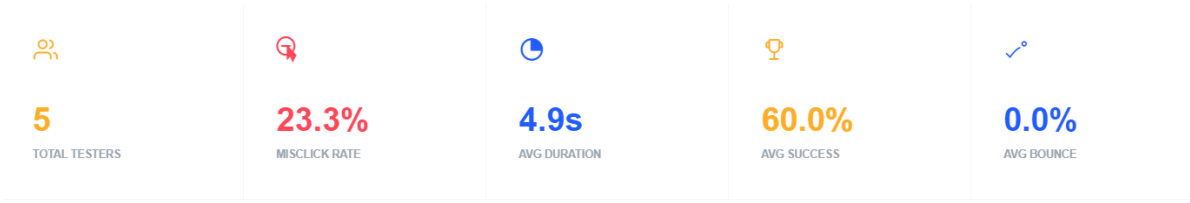


Figure 2: Results mission 2, prototype 1

This mission has a higher success rate of 60% compared to the first mission. The average success rate is the percentage of users that complete the mission via the expected paths. Instead of finding the chat icon next to the profile name, 40% of the users took an unexpected path to find the chat function, by going into the matched profile to access the chat. This can be attributed to inaccurate wording of the missions.

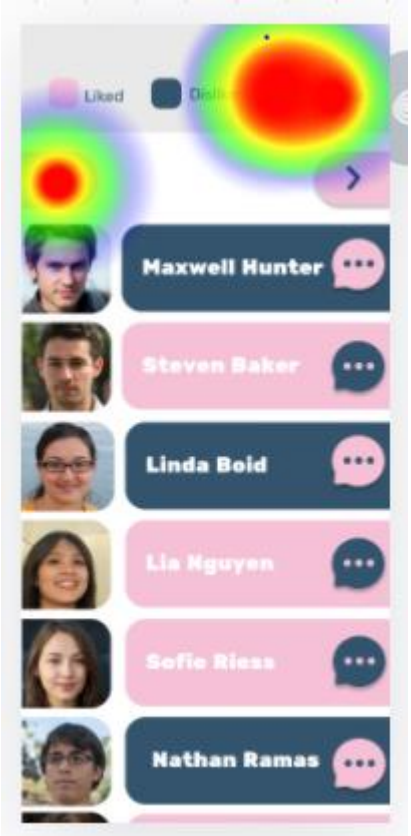


Figure 3: Misclick by the user

The user had to use the legend at the top of the page to understand that the yellow profiles indicated a match. Instead, some of the users clicked on the legend, and expected to get redirected (figure 3). Therefore, the mis-click rate for this mission was higher (figure 2).

Prototype 2:

Mission 1

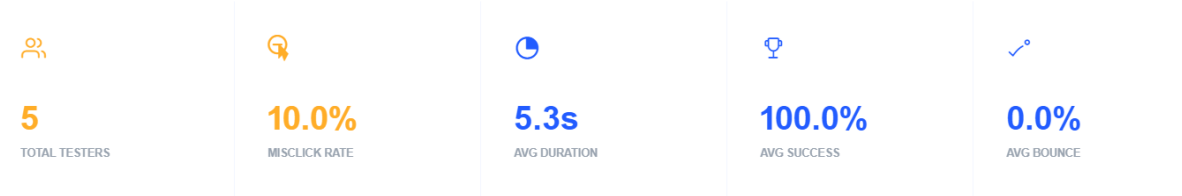


Figure 4: Results of mission 1, prototype 2

The average misclick rate for both missions of prototype 2 was (>=) 10% as opposed to the higher rates recorded for prototype 1. We concluded that users adjusted to the test

format. Furthermore, prototype 2 was more familiar as it resembled other existing housing apps' interfaces, yielding 100% success rate. The users also had a clearer path to complete the missions, in contrast to prototype 1.

Mission 2

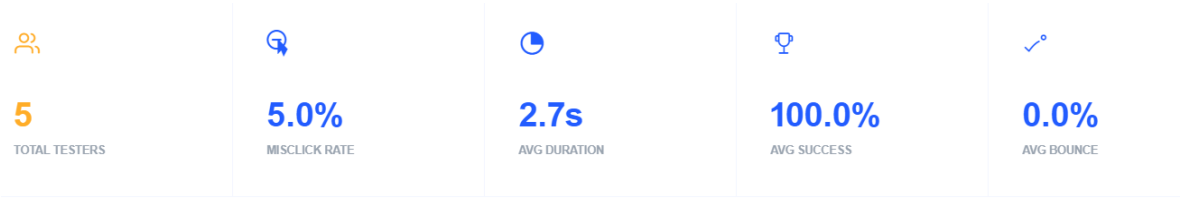


Figure 5: Results of mission 2, prototype 2

The results of mission 2 show a reduction of average duration and misclicks. One user mistook the "match!" message in yellow as a button to match with this profile, because it shows as "match!" instead of "matched!."

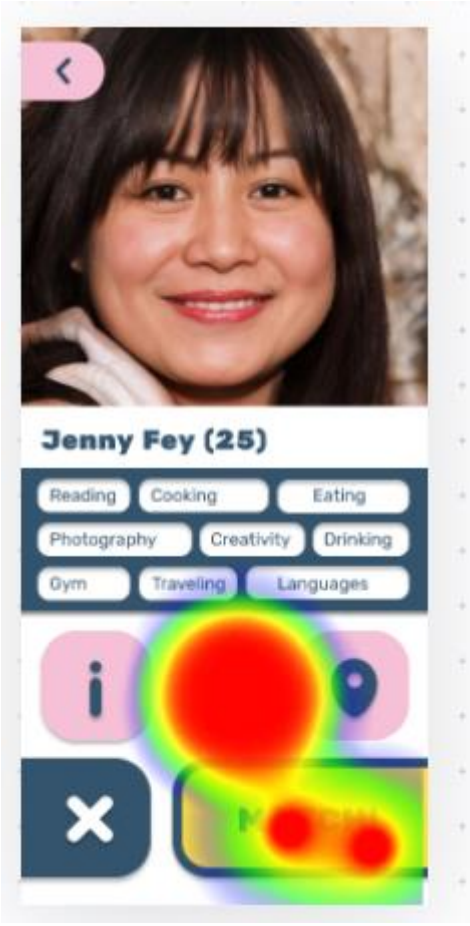


Figure 6: indication of misclick

The data collected from the questionnaires confirm our findings from Maze. I.e. 3/5 users mentioned that they prefer prototype 2, which is reflected with 100% success rate of prototype 2 from the user test. (figures 7, 4, 5)

Figure 7: Piecharts from the data gathered from the post-test questionnaire

Word count: 294

a) Appendix containing the questionnaire(s) used

Please append an empty copy of the questionnaire(s) used.
Remark about the collected data: Please store your data at a safe location (e.g., TU/e ResearchDrive or SurfDrive) until end of the current academic year and delete it afterwards. ONLY in case of questions, we will ask you to provide us with a copy of your data.

The questionnaire uses the System Usability Scale as a tool to get an understanding of the apps usability. It consists of 10 questions with five response options for respondents; from Strongly agree to Strongly disagree.

Questionnaire

UCD Group G12
*Vereist

1. What is your nationality? *

2. What is your age? *

Questions on prototype-version 1

3. I felt very confident using the system.

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

5. I found the system very cumbersome to use.

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

6. I think that I would like to use this system frequently. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

7. I found the system unnecessarily complex. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

8. I thought the system was easy to use.

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

10. I found the various functions in this system were well integrated. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

11. I thought there was too much inconsistency in this system. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

12. I would imagine that most people would learn to use this system very quickly. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Questions on prototype-version 2

UCD group G12 - Prototype A

13. I felt very confident using the system. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. I found the system very cumbersome to use.

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

16. I think that I would like to use this system frequently. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

17. I found the system unnecessarily complex. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

18. I thought the system was easy to use. *

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

21. I thought there was too much inconsistency in this system.

Markeer slechts één ovaal.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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

Markeer slechts één ovaal.

- Agree
- Strongly disagree

General questions on both versions

23. Which version is better? *

Markeer slechts één ovaal.

- Version 1
- Version 2
- I liked some aspects of both versions

24. If you liked some aspects of both versions, can you mention those aspects and why you liked these?

SUS questions from: https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html