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Low Fidelity prototypes and planning of first usability evaluation

Human-Computer Interaction Project

Team 1

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1 Competing designs

1.1 Introduction to the design

Customers who use coffee shops for laptop work have various requirements and preferences. We concluded from our context of use analysis, that there are two different perspectives relating to the different personas we identified. Students who use coffee shops to study are willing to commute to find appealing places that accommodate a social environment; remote workers - on the other hand - have requirements that relate more to their professional responsibilities. The latter need reliable workplaces that provide them with an opportunity to attend meetings, and are willing to pay extra for premium services. The two corresponding prototypes are a requirements-focused prototype and a social interaction prototype.

The **requirements-focused prototype** uses “Offers” that Coffee shop managers create to attract more customers who are willing to pay for premium services. While managers are users of the app too, we only prototype the interactions of their customers in this iteration. The offers are displayed on a map. The offers can be searched and filtered. When an offer is selected an overlay appears, that allows specification of time for the reservation and number of guests to be reserved for. To find out more about the establishment users can visit its profile. Once an offer is confirmed by the user they will be redirected to the activities view, where they can see and manage their reservations.

The **social interaction prototype** is based on the interaction between users and places as well as users between users. Users have access to a customised feed showcasing places their friends recommend and interact / have interacted with. For each action, social interaction features are highlighted, always always aiming to help users reach their goals. This approach is the biggest difference with the requirements-focused prototype: his prototype implements a design that aims to reproduce the social interactions that guide users in the process of choosing a place to study.

In both prototypes users can research according to personal requirements; in the second prototype, though, highlighted results are those linked to friends’ network. Another notable difference lies in the requirements: these are based and rated on users’ evaluations (e.g. the level of productivity of a place is defined by all those users who considered and rated the place as productive). This is another example of how we always manage to keep the social interaction behaviour.

1.2 First design: Requirements-focused Prototype

1.2.1 Viewpoint

Need: Remote workers need reliable Workplaces that are close in place and have strong requirements.

Finding: Managers have space to accommodate more laptop workers but don't advertise to them because they cannot monetize them. However, remote workers have reported to be willing to pay extra for their requirements.

Solution: Managers can create “Offers” in the App that remote workers can accept. For a fixed price, remote workers get a reservation and drinks/lunch/wi-fi for a specified time.

1.2.2 Interaction Devices and Styles

The interaction device we will design for is the **smartphone**. Participants have reported that they research places to work in bed in the morning. Further, the smartphone can help navigate the city, because it is readily available.

Our main interaction styles will be menus and forms. Users will specify the requirements for their work using a filter form and decide on actions to take on an offer via a menu. Further, direct manipulation may be utilised if users want to see a map displaying offers rather than a list. Users could mark their location on the map and explore offers in their area using drag motions.

1.2.3 Scenario or storyboard

Task 1: Find a place with requirements

You recently moved to Madrid, it is your first time coming here so you don’t really know where the areas are or new places you might like. Tomorrow you want to work with one of your friends in a cafe as you are both remote workers, one of your friends recommended you download Sitdown to find a place.

You open the app, and the first thing you see is a map that shows multiple coffee shops, you decide to filter so you have options more aligned to what you are looking for. You click on the only offer that aligns with your requirements and you make a reservation for the next day.

Task 2: Add a cafe to your wishlist

One of your friends told you that they like one specific place for halal, but you forgot who told you that and don’t know the name of that cafe but you are really excited about it and want to try it out. To be able to find it, you go search in the app to see if you can find the friend that recommended you the place so that you can save it for the future.

Task 3: Leave a review for “Sukis Cafe”

You visited Sukis Cafe and you really liked it. You want to give it a good review so your friends can see that it is a good place if they are looking for new places to visit. You go

to the app, and to not lose a lot of time you directly search for the cafe and leave a review of it.

1.2.4 Low Fidelity prototype (video)

Link to Video:

Video Prototype 1

1.3 Second design: Socially-focused Prototype

1.3.1 Viewpoint

Need: From the contextual inquiry, users need to see pictures and reviews and it is important for them to have social interaction. One of the most common ways for users to scout a new place is by word of mouth, and if the suggestion comes from someone trustworthy it is more likely the user will get there. Receiving suggestions about a specific place makes the research easier.

Finding: Interaction with the place before going there is important, meaning that users want to be able to know as much as they can about the place, its policy and atmosphere.

Solution: Create a social network prototype where users can rely on pictures, reviews and friends' recommendations to have a complete and concrete idea of the place. Push on the social interaction both between customer-place and customer-customer. Give the possibility to users to connect and chat with each other. Implement a social network philosophy to offer the users a more engaging experience giving them all the feedback and interactions they need to reach their goals.

1.3.2 Interaction devices and styles

This design will be a mobile app for smartphones because users need to be able to navigate through it anytime and anywhere, so it's much more convenient to have it in this format. As a stylish approach, the OS considered to design this app is the iOS of iPhones.

Our interaction style will be direct manipulation and will consist of a feed where users can see all the places recommended, commented and liked by a friend and special offers and recommendations based on their interests. Users will be able to interact with each other through a messaging feature. The organisation of the content and interactions is designed to enhance social activity. So, first of all we'll always present to the users a first impression given by their friends interaction.

Users will be able also to share live moments of their staying at a place. To do so, it is possible to open the phone camera from the app and do a video or a picture of the moment. This way people can see other friends studying and reach them. This is done

to increase the interactions and the occasions to study with other people. Also places can share these type of content to promote events and offers.

The users will be able to search for a specific place too. To do this they will have first content based on other people's reviews from which we categorise the different places, e.g. productivity, silence, chit chat, ecc. On a second level the users will be able to do a complete search both by name, where they can find places and users, and by filters.

Finally, the user can reserve a study and work session to any place on the platform and leave a review that will be collected to update the rating and classification of the place.

So, the first level of interaction will always be based on interactions with other users and places, then, on second and third levels, the users can also decide by their personal requirements through a more specific search.

1.3.3 Scenario or storyboard

Task 1: Find a place with requirements

You recently moved to Madrid, it is your first time coming here so you don't really know where the areas are or new places you might like. Tomorrow you want to work with one of your friends in a cafe as you are both remote workers, one of your friends recommended you download Sitdown to find a place and new friends in the new town.

You open the app in which you already registered. You see your personal feed as first content. Since no recommendations fit your needs, you go in the search section where you can see all the different categories. You decide to filter so you have options more aligned to what you are looking for. You click on the offer that aligns with your requirements and you make a reservation for the next day.

Task 2: Add a cafe to your wishlist

You need to study to prepare for an exam. You need to eat and you want a place where they sell halal, but you don't know any. You open the app and you go to the search section, where you apply the related filters. In the results, you find in the recommendations for you an halal place that is recommended by a friend. You like how the place presents itself and before deciding to go there, you save it in the favourites so you don't forget about it for the future.

Task 3: Leave a review for "Sukis Cafe"

You reserved Sukis Cafe and you really liked it. You want to give it a good review and recommend it to your friends in the app. You go to the app section about last reservations and you leave a 5 stars review.

1.3.4 Low fidelity prototype (video)

Link to Video:

Video Prototype 2

2 Planning of the usability testing

2.1 Evaluation goals

Perform a usability testing of the two low-fidelity prototypes, with special interest in how well each prototype fits the mental models of the participants. The usability testing will be performed using the “thinking-aloud” technique. During the test, we will measure effectiveness, efficiency, and user satisfaction.

2.2 Dates, places, and roles

Test	Date and time	Place	Comments
1	02-04-2024	Imdea building, room 279	Expected duration: 12:00 - 13:00 Expected Participants: 1
2	02-04-2024	Imdea building, room 279	Expected duration: 13:00 - 14:00 Expected Participants: 1
3	02-04-2024	Imdea building, room 279	Expected duration: 15:00 - 16:00 Expected Participants: 1
4	03-04-2024	Imdea building, room 279	Expected duration: 11:00 - 12:00 Expected Participants: 1
5	03-04-2024	Imdea building, room 279	Expected duration: 12:00 - 13:00 Expected Participants: 1
6	03-04-2024	Imdea building, room 279	Expected duration: 15:00 - 16:00 Expected Participants: 1

Test	“Computer”	Facilitator	Observers
1	Carolina Ortega	Milan Tornier	Matteo Del Prato Francesco Barbanti
2	Francesco Barbanti	Carolina Ortega	Matteo Del Prato Milan Tornier
3	Matteo Del Prato	Francesco Barbanti	Milan Tornier Carolina Ortega
4	Milan Tornier	Matteo Del Prato	Carolina Ortega Francesco Barbanti
5	Carolina Ortega	Milan Tornier	Francesco Barbanti Matteo Del Prato
6	Francesco Barbanti	Carolina Ortega	Matteo Del Prato Milan Tornier

2.3 Participants

Participants	Total: 6 Students: 3 Remote Workers: 3
Recruiting	The recruiting will depend on the availability of the participants to be able to have a 1 hour testing. They will be contacted via text message and in the UPM Campus. As we are dependent on the time availability of the participants, if they don't show up the day of the testing we might need to find a new participant and time slot for them.

2.4 Sequence

2.4.1 Welcome text

Thank you for participating in this interview. I am _____, and they are _____, and we are conducting this interview for the Polytechnic University of Madrid. We are interested in understanding the challenges students and workers face when they need to find a place to study and work. Your participation will help us build a better platform for you to accomplish this task in the best way possible.

We ask you to perform three different tasks using two different lo-fi, paper-based prototypes. We encourage you to ask questions if you have any, and share your thoughts with us during your performance: our goal is not to judge you, but to learn from you.
During the entire time that we will be conducting the testing, we encourage you to think aloud. This means to say everything that you think and feel in every step of the way, there are no right or wrong thoughts and it will be very beneficial for us to know your first impression, frustrations, and thoughts on each prototype.

Don't worry about making mistakes or giving "the right" feedback. Just be yourself and tell us how you feel. Your input is what will make these products shine. Thanks for helping us.

Do you have any questions before we begin?

2.4.2 Process

1. Say the “welcome text” (2.4.1) to the participant.
2. Explain the consent form (2.5) and collect the participant signature.
3. Gather personal information (2.6).
4. Do the usability testing of one of the prototypes. Ask the participant to perform the tasks (2.7), gather data (2.8) and observations (2.9).
5. After using the prototype, ask the participant to fulfil the user satisfaction questionnaire (2.10) and ask for general impressions (2.11).
6. Repeat 3, 4 for the other prototype.

2.5 Consent form

Informed Consent for Participant of Investigative Project

Universidad Politécnica de Madrid, Spain

Researchers: Milan Tornier, Carolina Ortega Barrios, Matteo del Prato, Fransesco Barbanti

I. THE PURPOSE OF THIS PROJECT

This study is about connecting laptop-using customers with cafes that want to accommodate them.

II. PROCEDURES

We inform you, the participant, that this usability test will last approximately one hour. During this activity, we are following the following process:

1. We will ask you some questions to gather demographic data.
2. We will ask you to perform several tasks using two paper-based low-fidelity prototypes.
3. We will ask you to complete a usability questionnaire (SUS) for each prototype.
4. We will ask you some questions about your experience using both prototypes.

III. RISKS

There will not be more than minimal risks by participating in our study.

IV. EXTENT OF ANONYMITY AND CONFIDENTIALITY

The results of this study will be kept confidential and your personal information will not be used except in this consent form.

Your written consent is required for the researchers to release any data identified with you as an individual to anyone other than personnel working on the project. The information you provide will be anonymous. The gained information will be written down in this sheet and stored in a safe place for at most 3 months after this interview. This study is done only for research purposes and the gained information will not be used for other goals.

V. COMPENSATION

Your participation is voluntary and unpaid.

VI. FREEDOM TO WITHDRAW

You can withdraw from this study anytime for any reason.

VII. SUBJECT'S RESPONSIBILITIES AND PERMISSION

I voluntarily agree to participate in this study, and I know no reason I cannot participate. I have read and understood the informed consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Name:	Date:
Signature:	

2.6 Personal information questionnaire

The questionnaire will be in the format of an electronic document, it is intended to obtain demographic anonymous information from the participants. During the usability test it will be more convenient and fast for the facilitators and observers to gather all the information in one place.

Tasks to be performed by participants

Task	1
Title	Find a place with requirements
Starting situation	You're at home and are looking for a place to work on your laptop. You open the Sitdown App.
Task instructions	Find a place for laptop work for , where you can study 2 hours. It should allow laptop work, have wi-fi, provide vegan lunch and be no farther than 2km from your place. Book two seats for you and a friend from 12:00 -14:00 for today: Thursday, 4th April.

Task	2
Title	Add a cafe to your wishlist
Starting situation	Your friends just told you about a halal place that has good food. You open the sitdown app to add it to your wishlist.
Task instructions	Look for a place that is halal and that one of your friends likes. Add this place to your wish list.

Task	3
Title	Leave a review for "Sukis Cafe"
Starting situation	You are at home after coming back from working at Sukis Cafe, you liked it so much that you want to leave a positive review online.
Task instructions	You went to Suki's cafe and want to leave a review. Give it a rating of 5/5 and write "Amazing Coffee" and add a photo.

2.7 Objective measurements

Measurement	**Description**

Actions	Number of elemental actions performed (click, tap, …) to complete one task.
Mistakes	Number of mistakes made during one task.
Success	Yes/no (whether the participant succeeds at completing the task).

2.8 Observation sheet

During the Usability Test, the following template will be used to collect all data from Date, Time, and Participant ID, to Demographics, Objective Measures, SUS, and General Impressions.

https://docs.google.com/spreadsheets/d/12PFr9kCjRugo3wlLar0X57Vd0anLP6zVrPNuffqfmzw/edit?usp=sharing

2.9 User satisfaction: SUS questionnaire

Participant ID	
Evaluated prototype	
Date and time	

Reply with your degree of agreement or disagreement to the following ten sentences, where one means “I totally disagree with the sentence” and five means “I totally agree with the sentence”.

	1	2	3	4	5
I think that I would like to use this system frequently.					
I found the system unnecessarily complex.					
I thought the system was easy to use.					
I think that I would need the support of a technical person to be able to use this system.					
I found the various functions in this system were well integrated.					
I thought there was too much inconsistency in this system.					
I would imagine that most people would learn to use this system very quickly.					
I found the system very cumbersome to use.					
I felt very confident using the system.					
I needed to learn a lot of things before I could get going with this system.					

2.10 General impressions

Participant ID	
Evaluated prototype	
Date and time	
1. What are the main problems you have found while using this prototype?	
2. What is the part of the prototype that has been more difficult to understand? Why?	
3. Can you describe your overall experience with this prototype?	
4. Which is the prototype that you prefer? Why?	
5. What have you liked the most of each prototype?	