Milestone 4 - Heuristic Evaluation

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1   Introduction

In this milestone we want to get insights from our prototypes. So we have re-united a group of experts to give feedback on our interactive prototype.

In this memory, we have documented all of the steps we followed from creating the scripts and prototypes for the evaluators to extracting the key information from their feedback.

At the end of this milestone, we have also created a bunch of ideas to fix in the future of our application. Most of them are minor fixes and they are not so relevant for a first version. However, it's important to take them into account for new versions so the user experience will be improved.

2   Prototype for the evaluators

We have evolved the previous prototype. So we have created an interactive pro-totype for the experts so they can move through the whole application easily and test different parts of our system independently.

For this purpose, we have created high fidelity sketches. And we have built an interactive prototype using google slides. This let us to use animations and many interactions though different views.

You can see the interactive prototype: Prototype In order to let the experts to use our prototype, we have created a 'How to use it' guide.

2.1   interactive prototype: How to use it

Update (12/01/2017): We have included new views for the navigation mode. So now the user can receive topics and sentences while walking. When you go to the navigation slide, the controlling tabs change. So please, continuous reading to know how to use the "navigation tabs".

The prototype contains a sequence of slides, that will cover the normal scenario when dating. This is useful for the heuristic evaluation. However, for the user evaluation we needed a way to move between views so the user can move freely through the application.

To achieve this, we have added 8 tabs at the bottom of the prototype. To make the interface clear, we haven't added any text explaining where are you going by clicking the tab (because this will be click by one member of our team in the background).

2.1.1   Inside mode tabs

Tabs numbers (from left to right):

1. Home
2. Configure
3. Flirting/Dating
4. Girl Profile
5. Conversation Topics
6. Conversation sentences
7. Places
8. Navigation

See figure 1 (next page) to know visually how we placed the tabs.

2.1.2   Outside navigation mode tabs

When the user is in navigation mode. The tabs change in order to have the topics, sentences, etc views. So we allow our user to use the application in different ways.
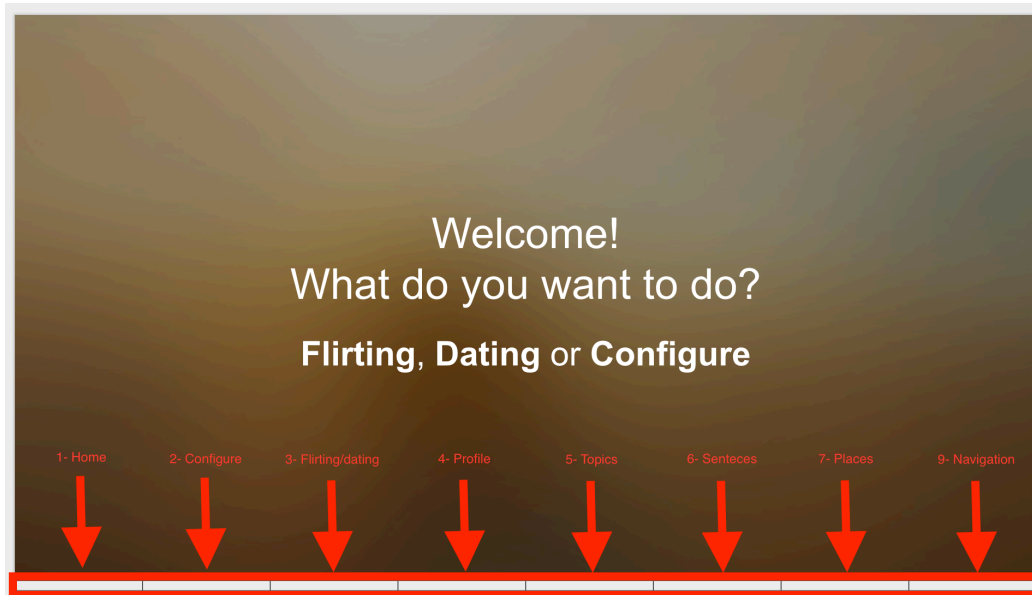
Tabs numbers (from left to right):

Figure 1: Prototype main window with tabs names

1. Home
2. Configure
3. Flirting/Dating
4. Navigation: propose topics
5. Navigation: propose sentences
6. Navigation: change restaurant
7. Arrive destination

3   Initial preparation: plan and execution

3.1   Research plan

We had 5 experts available for the evaluation. Our application focuses on **responsiveness** and strives to be **minimally intrusive**. Therefore, we have very few controls and screens, and we thought that every evaluator should be able to evaluate the whole app in a reasonable time. As a consequence, we agreed that a single script would suffice.

In addition to that, we decided to go with Schneiderman's list of heuristics, because we found that they were more aligned with our app. Since our app features a very particular and innovative technology, we thought that the more concrete heuristics in Schneiderman's list would provide more information about any usability problem. We found heuristic number 8 particularly interesting, since we want to reduce the attention the user pays to our app.

3.2   Research materials

For this evaluation, every expert was provided with two different materials:

- **The evaluation script**, which was taken from the keypath scenarios of the last iteration.
- A link to the evaluation form, created using google form. So they can send directly their heuristic violations while using the application.

3.3   Evaluator script

We have created a evaluator script, so the can see clearly what we are expecting from them.

This evaluation has two main parts - The Component Evaluation, where the individual functionalities of our application will be reviewed - The User Interaction Evaluation, where a complete interaction from start to finish will be evaluated. The app itself is quite short, therefore there should be enough time to perform both evaluations.

3.3.1   Component Evaluation

In this section you will test isolated functionalities. So you can focus on a few views and screens. In the next chapter, you will need to focus on a whole story.

3.3.1.1   Obtain a person's information

Here the focus should be on the user's ability to understand and quickly parse the information about the other person, as well as the density and quality of the

information provided. The more information we give and the less attention we require, the better.

1. Start from slide 4.
2. You are at the university taking a walk. You see this beautiful girl and go closer to her.
3. When you get closer, the app scans her face and displays information about her. This information includes her tastes, hobbies and mutual friends. Furthermore, a likeness indicator appears near the girl's image.

3.3.1.2   Conversation: Select a conversation topic

In this section of the app, we imagine the user having a conversation with his/her date. The mission of the app is to ensure that the conversation never runs out, and that the user leaves a good impression on the girl.

1. Start from slide 6.
2. You start talking to the girl, and after a while the conversation runs out. The likeness indicator goes down.
3. Then, the app will suggest some topics to speak about taking into account the other person's hobbies and preferences.
4. When you start talking about one of the topics, the app will replace the list of topics with a list of useful sentences to say about that topic.

3.3.1.3   Make reservations in a nice place

Here we assume that the user wants to take the date somewhere more intimate, so the app has to find a suitable place and make reservations.

1. Start from slide 9.
2. The app suggests a list of restaurants to go to. You ask the girl about going to one of those places.
3. When you both accept, the app makes a reservation if necessary and displays navigation information with directions to that place.

3.3.1.4   Use navigation to get to the restaurant

In this view, the app will direct the user towards the destination, providing information on the screen as they walk.

1. Start from slide 10.
2. As soon as they get to the restaurant the navigation information disappears and the app shows again several topics that could fit in the conversation.

3.3.2   User Interaction Evaluation

3.3.2.1   Flirting

1. You are at the university taking a walk. You see this beautiful girl and go closer to her.
2. When you get closer, the app scans her face and displays information about her. This information includes her tastes, hobbies and mutual friends. Furthermore, a likeness indicator appears near the girl's image.
3. You start talking to the girl, and after a while the conversation runs out. The likeness indicator goes down.
4. Then, the app will suggest some topics to speak about taking into account the other person's hobbies and preferences.
5. When you start talking about one of the topics, the app will replace the list of topics with a list of useful sentences to say about that topic.
6. The app notices that the girl is hungry and it's getting late, so it changes to date mode.

3.3.2.2   Dating

1. The app suggests a list of restaurants to go to.
2. You ask the girl about going to one of those places.
3. When you both accept, the app makes a reservation if necessary and displays navigation information with directions to that place.
4. As soon as they get to the restaurant the navigation information disappears and the app shows again several topics that could fit in the conversation.
5. As soon as you both start talking about one of those topics the app will recognise it and suggest you several useful sentences about that topic.

6. Then the app recognises that the girl is feeling very comfortable being with you and suggest you to take the date to the next level, maybe to go somewhere else. A more intimate place.
7. As it happened with the restaurants it will show you several options and it will recognise when you both accept to go to one of them.
8. The app displays again the navigation information to get to that place.
9. After this the app will just keep on recommending topics during the rest of the date.
10. But there is a last part. If the app detects that the other person wants to have a relationship with you it will notify it.

4   How are we going to conduct the evaluations?

We provide different documents to the evaluators. First, a script that contains all the information they need to test our system which contains a list of features and keypaths we want to receive feedback.

Also we give then the document on how to use the prototype and a form to send feedback during the evaluation.

At the beginning of the evaluations we introduce them to our system and then we support them during the whole process (questions, ideas, problems, etc).

Some of the evaluators added feedback on different heuristics. As they said, there are not any heuristic violated. However, some feedback or ideas to improve it. This kind of messages contains the tag (feedback).

5   Severity reports

5.1   Evaluator 1: Jens

Age: 21

Name: Jens

Jeans was really active on the process. He asked some questions and provided useful feedback. In general terms he is happy with the application. But he gave

us some useful feedback (they are not violated heuristic, only things to improve the system). We have collected the Jens feedback in the following bullet points:

- **Shortcuts**

    - (Feedback) Shortcuts are not really needed, so I do not find a real error in this case. But a shortcut could help to switch the settings while a conversation. But if I assume that the glasses, know what information I need because of smartness, such shortcuts will not really needed.

    - Heuristic: S02
    - Severity: 1
    - The actual problem was that one cannot adjust the filters without losing focus completely. Severity updated to 4.

- **Consistency**

    - (Feedback) The glasses are smart and therefore the sequence of informations and dialogs will fit my needs. -> There will be no violation here.
    - Heuristic: S01 (Consistency)
    - Severity: 1

- **Informative Feedback**

    - (Feedback) I can assume that I can get all information without waiting. In this case there cannot be any violation here.

    - Heuristic: S03 (FeedbacK)
    - Severity: 1

- **Closure**

    - There is no obvious ending in the application. After a night of dating a girl, it could be nice to get statistics and further recommendations to develop the user's dating abilities.

    - Heuristic: S04 (Closure)
    - Severity: 7

- **Errors**

- – (Feedback) The app is smart. There will not be any bad errors, I assume.
  - – Heuristic: S05 (Error Handling)
  - – Severity: 1

- **Undo**

  - – (Feedback) Nothing is permanent. So, no undo feature is needed.
  - – Heuristic: S06 (Reversal of actions)
  - – Severity: 1

- **Control on the app**

  - – (Feedback) I assume that the app is smart, so I can control it indirectly. Only with my reaction the app will adapt. So, I feel always in control.

  - – Heuristic: S07 (Locus of Control)
  - – Severity: 1

- **Memory**

  - – (Feedback) I detected that no short-term memory is needed. It is perfect for the situation because I do not want to remember anything when I use the app.

  - – Heuristic: S08 (Short-term memory load)
  - – Severity: 1
  - – The information about the girl should not have to be recorded in memory, but rather refreshed or suggested via topics.

5.2   Evaluator 2: Fernando

Age: 21

Name: Fernando

Fernando only submitted two messages to our system. However, he was proposing some ideas "on site" while the evaluation was taking place. For example, he told us about the map situation. He thought is perfect to have it right-bottom. However, what about if the user change the opinion and want to go to another

place intentionally? Also, what about if the user wants to give a longer walk instead of going through one way? He said we should take this scenarios into place, so the user can move freely.

- **App feedback**

    - (Feedback, not violation): The user could be happy about feedback if he's doing a good job or after the interaction points for improvement for the next time.
    - Heuristic: S01 (Visibility of system status)
    - Severity: 2

- **Navigation control**

    - The user can change the opinion and go to another place while going on navigation mode. Also the application needs to recognize if the user wants to make a longer walk because the conversation is nice.
    - Heuristic: S03 (User control and freedom)
    - Severity: 3

5.3   Evaluator 3: Jorge

Age: 21 Name: Jorge

Jorge was actively involved in the evaluation process, constantly asking for clarifications and directions and engaging with the moderator. He pointed out some heuristics violations, mostly having to do with the 8th heuristic and the user's short-term memory:

- **Navigation map requires unnecessary attention**

    - The indications of the arrow are enough to orient the user with the minimal intrusion possible, and hence the map would be unnecessary. Perhaps the estimated arrival time would be better suited for that spot in the interface. Where was it found: Navigation mode
    - Heuristic: S08 (Short-term memory load)
    - Severity: 3

- **Facebook information**

- When analyzing a person's information, their Facebook profile picture and some important information from there could be displayed. Where was it found: Personal information
- Heuristic: S03 (Feedback)
- Severity: 2

- **Topic changing sentence suggestions**

  - When the app suggests a change of topic, the listed phrases are too far from the original topic, and constitute too radical of a change to be natural in a conversation. Where was it found: Conversation
  - Heuristic: S03 (Feedback)
  - Severity: 5
  - They are not representative of the app.

- **Reservation confirmation**

  - When making reservations for a place, the process does not allow a confirmation step before making a potentially costly reservation. The user would have to trust the app to know both people's intentions and schedules beforehand. Where was it found: Moving view
  - Heuristic: S05 (Error Handling)
  - Severity: 7
  - Better to add cancelation option after reservation.

5.4 Evaluator 4: Pablo

Age: 24

Name: Pablo

Pablo was very active during the heuristic evaluation because he liked our app's concept and he wanted to help us improve as much as possible but he didn't found many things wrong in our app that we could really fix.

- **Possibility to customize some more the app**

  - He wanted for example the possibility to decide how many suggested phrases about a theme you can see at the same time and the color of some of the dialogs background. He said that he would like to see this

options and maybe some others to configure the app in the configuration tab. Where was it found: Configuration
  – Heuristic: S07(Locus of control)
  – Severity: 3
  – Customizability is good, in the settings.

- **Being able to pause the app in the middle of a date**

  – He said that maybe the possibility to stop the app in the middle of a date in a way that the girl doesn't realize that you are using it would be nice. He said that it could be good whenever you feel exceeded by the app. Where was it found: The app in general
  – Heuristic: S07(Locus of control)
  – Severity: 2
  – Currently the app can not show anything, but not stop listening. Most of the evaluators didn't have an issue with that. However, they did consider it a violation of locus of control.

- **The name "Configuration" is misleading**

  – Currently, this is actually just filters, and not any preferences such as refresh frequency, or whatever. Perhaps another name would be better suited.
  – Where was it found: The app in general
  – Heuristic: S03(Feedback)
  – Severity: 4

5.5   Evaluator 5: Ignacio

Age: 21

Name: Ignacio

Ignacio first of all was very focused on what the monitor was explaining to him about the application. He easily understood all the concepts and commands without working too hard. He thinks that the application was very useful and all actions are very handy. He spent some minutes looking among the slides searching some errors or improvements we can make.

- **"Misclick" in book option**

- He was concerned about the facilities of booking. He said that maybe in the conversation with the girl we are talking about a place and automatically booked it by accident. Also we cannot undo it. Where was it found: slide 24.
- Heuristic: S07(Locus of control), S06: (Reversal of actions).
- Severity: 7
- Cancel option, addressed earlier.

- **No more recommendations**

  - He thinks it is not intuitive for the user's point of view know that the topics are going to change, eventually, if we don't select any. Where was it found: the whole application.
  - Heuristic: S03(Feedback)
  - Severity: 3
  - Later not considered a problem because the app would refresh the suggestions constantly.

6　Debriefing

We didn't have enough time to make the debriefing with the experts. However, some of them also gave us some ideas and tips to fix some problems while evaluating our design. This was included in the previous section with the tag `Feedback`. So we took into account their information and also our team discussed some of the problems from previous chapter.

With those problems we started to figure out how to fix things in order to improve the user experience. And also, what are the key ideas we should focus on the future of our application.

The good thing on this period is in general terms we did a great job with the interface and there weren't any serious problems. However, we collected many minor ideas to improve our application. And those details are quite important too.

In the next chapter we show you what are those changes we should fix in the future of our application. Those ideas are resulting from this 'debriefing' session.

7   Final list of changes and priorities

We have created a list of stuff to improve in the future of our application:

- **[LOW]** Allow to change the navigation route depending on the user intentions (like staying longer time) or how does the girl feel.
- **[MEDIUM]** Allow to cancel a reservation depending on a new plan.
- **[LOW]** Record all the previous dates of the user. And show statics in the screen so the user can know how was the date, get statistics and further recommendations to develop the user's dating abilities.
- **[LOW]** Replace map in navigation view with estimated time of arrival.
- **[HIGH]** Refine the sentences to allow for a more open-ended conversation.
- **[LOW]** Display a the date's profile picture in the information page.
- **[LOW]** Possibility to customize some more the app.
- **[LOW]** Being able to pause the app in the middle of a date.