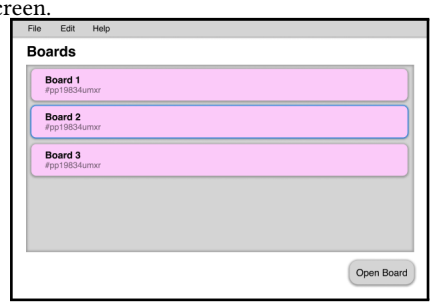
OOP Project Heuristic Usability Evaluation Report – Group 39

Viktor Seršiḱ, Marco Smidt, Rusu George Constantin, Gido Vitner
Senne Drent, Leon Braszczyński

1 INTRODUCTION

Our goal with this evaluation was to get feedback on usability from a third party on a prototype of our product, since our own opinion might be subjective on that matter. With said feedback on usability, we intend to improve our final product in that regard.

At this point into development, obviously no finished product exists yet; therefore, we had to provide the third party a non-functional prototype. This prototype [1] is only visual and not a functioning product, similar to a slide show. To create that functioning prototype, we used the application "Figma". As stated previously, we gave this prototype to said third party alongside a form of questions to evaluate the usability of our prototype. It is important to mention that certain concerns answered in the form might be ignored, since we were aware that in the prototype the implementation is restricted. For example, in the Board Selection menu, we have a menu bar which in the product obviously works and will expand, if clicked on its items. However, in the prototype this is not the case, and when clicked on the user will simply return to URL input screen.



In consideration of these points, we believe we were still able to evaluate the usability of our product sufficiently, thanks to the cooperation of our experts, who tested our prototype and were willing to answer our question honestly and fairly. Our evaluation, with help from the experts, will be discussed in the following sections.

2 METHODS

2.1 Experts

To test the prototype, we asked five experts to give it a look and give feedback on things they noticed. These five people range in user interface expertise- one has formal experience through internship, some have made a few side projects where User Interface was important and one person did not have any experience beside the OOPP project itself; overall a varied, respectable mix of levels in skill and credentials.

2.2 Procedure

The way the testing was conducted, is as follows: First off, the prototype was given to the experts, this was in the form of a link to an interactive Figma project. This Figma project had all the menus which were planned to be implemented. The experts were able to navigate this prototype through certain buttons on the prototype's menus, which would open an additional menu in the way it would work in the product. They were free to play around with the prototype until they felt ready to fill in the forms. During the answering of the form the experts were allowed to use the prototype to reinforce their opinions on the questions asked on the forms. These forms were made on Google Forms and collected the answers of the individual experts. Once the participating expert had filled in their respective form they were done with the test.

During all times the experts were free to ask questions to the people conducting the experiments to clear up any uncertainty the expert may have had about the prototype itself, though it is important to differentiate whether the question originated from confusion through the prototype itself or the phrasing of the question in the Forms. The former would imply a flaw in the design of the User Interface while the latter would only call into question in what direction our guiding questions were steering their feedback.

An idea to ensure that an expert would not miss a certain part of the prototype was to give them exercises to achieve in the prototype. This made sure that every part that needed to be tested would be covered and also would receive some valuable feedback, as these exercises mimicked real situations on how a user would use the app.

2.3 Heuristics Used

For our Heuristic Usability Evaluation, we employed Nielsen's 10 Usability Heuristics, which are widely recognized principles for evaluating user interfaces. The heuristics we used are:

(1) Visibility of system status
(2) Match between the system and the real world
(3) User control and freedom
(4) Consistency and standards
(5) Error prevention
(6) Recognition rather than recall
(7) Flexibility and efficiency of use
(8) Aesthetic and minimalist design
(9) Help users recognize, diagnose, and recover from errors
(10) Help and documentation

2.4 Sample Questions and Recorded Responses

What is measured from this evaluation is a collection of notes from the experts. In the forms experts are asked a few broad questions about different menus, giving the expert the space to explain things they noticed which the test designer did not think of. But also more specific questions to gain data on the important points the tester could think (take for example colour schema).

The forms in question are on Google forms and the answers can be interacted with as you'd expect from the app: the answers can be

displayed grouped by question or all the answers of one individual. the following questions were asked:

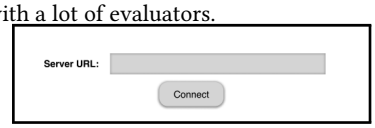
- What is your name?
- What is your experience with designing UI?
- Do you feel like you get 'lost' whilst navigating the prototype? Can you describe your confusion?
- what you'd feel are weird choices?
- What do you think of the color scheme of the Prototype?
- How much do the different art styles bother you (blocky, bubbly, apple-inspired pop-ups)?
- Is there anything that feels irreversible?
- What did you immediately notice while using the server connect screen?
- How do you feel the menu helps you through the process of connecting to a server?
- How clear was the process of connecting to a specific server?
- What did you immediately notice while using the Board selection screen?
- What do you think about the method of connecting to a different server once you are already connected to one?
- What do you think about the clarity for adding/deleting a board?
- What did you immediately notice whilst using the Main Board screen?
- What changes do you think could be made to simplify the process of creating a new task(Card) from an empty board?
- How intuitive is it to switch to a different Board from the board that you currently are viewing?

3 RESULTS

3.1 Server Connect (Heuristic 1: Visibility of system status)

The process of connecting to a server was quite confusing for most of the evaluators. The major problem appears to be the absence of instructions on what should be entered into the text field. A prototype also did not specify what would happen if a user entered the wrong URL.

Additionally, as a user, you are not able to identify which server you are connected to. We were quite surprised by this finding since we did not see a need for it, but it turns out it was a common issue with a lot of evaluators.

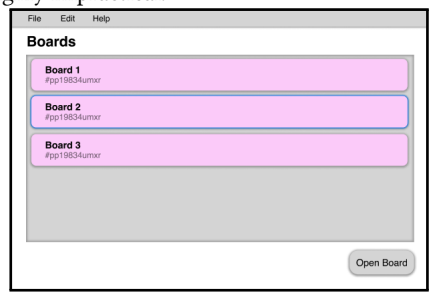


3.2 Board Overview (Heuristic 4: Consistency and standards)

It was pointed out that there are some pointless features in the board overview that are neither functional nor aesthetic.

As its functionality is irrelevant to the board's overview, the menu bar seems pointless. Moreover, the file button is extremely confusing for many users as its purpose is to send the client back to the server connect window, which is not very suggestive. As such, a clear back button is really necessary.

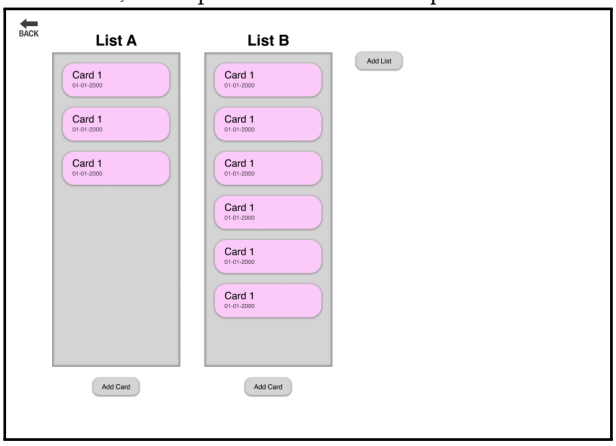
Moreover, the appearance of the # is unclear, and its existence is highly impractical.



3.3 Board (Heuristic 3: User control and freedom)

In general, the majority of the evaluators expressed satisfaction with the design of the board, however, a significant issue was identified by all of the evaluators. Namely, the absence of the option to edit or delete the card or the list was deemed a fundamental deficiency within the application, and therefore, resolving this concern should be regarded as the highest priority.

Furthermore, another common complaint pertained to the positioning of the Add Card button. Its location at the end of the list was found to be problematic, as it impeded accessibility. Consequently, it is essential to relocate the button to ensure ease of access at all times. This issue is also linked to the extended length of the lists, which caused difficulties for evaluators scrolling down to the list's end. Therefore, it is imperative to address this problem as well.



3.4 Adding (Heuristic 8: Aesthetic and minimalist design)

The process of adding a new card or list seems to have a couple of problems as indicated by the reviewers.

Despite the aesthetic purpose of not having a clear text-box, the confusion created appears to disorient users as to where to type. Furthermore, when creating a new card, the labels are not as suggestive as we hoped for as they don't describe the purpose of their specific textbox.

The second concern is that the buttons for adding a new card or list seem to blend too much with the background by having similar colors. As such, they are quite difficult to see.

Lastly, the add list button on the Board is poorly placed and as such many problems may arise, such as its disappearance if numerous lists are created.

3.5 Design (Heuristic 2: Match between the system and the real world)

Evaluators liked the colour palette that we decided to use, but there were some complaints about the layout. They described the app as "empty", which refers to large dull spaces between objects. On the other hand it was mentioned several times that some parts of the app are too cramped together saying that they mainly refer to objects within lists. Also it was pointed out that background colour might be a reason behind the feeling of emptiness in a design.

Experienced evaluators recommended that we implement dynamic design that adapts to the screen size of the user for the final app.

4 CONCLUSIONS AND IMPROVEMENTS

Through the evaluation process and the feedback provided from the third-party experts, the facets of the application deemed to be problematic generally fell under various design components, namely button placement across all pages, the pointless menu bar of the board overview, and the invisibility of the text-boxes when adding new cards, among other complaints. While the default aesthetic and color scheme received positive feedback, it was revealed that design decisions around this often lead to uncertainty in where certain objects/icons began and ended. Button placement as a result was repeatedly a source of concern, further intensified by generally poor responses regarding the layout of all pages, where 'empty' became a recurring phrase. However, as a result of this feedback, a list of changes to be implemented has been compiled.

4.1 Prioritization of Issues and Improvements

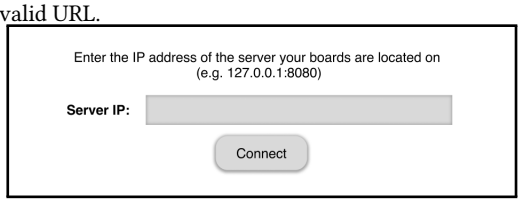
We have prioritized the identified issues and corresponding improvements as follows ordered by the flow of the application from its starting page:

(1) Server Connect Improvements
(2) Board Overview Improvements
(3) Board Improvements
(4) Adding Improvements
(5) Design Improvements

4.2 improvements

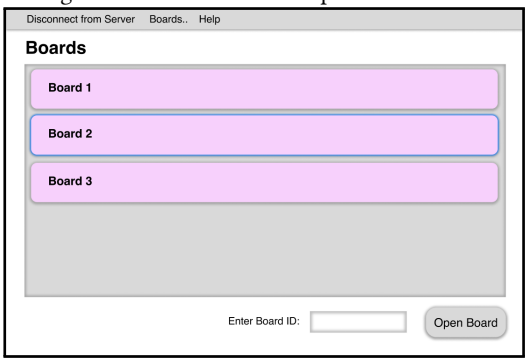
4.2.1 Server Connect: Visibility of system status (Heuristic 1). We start the list of improvements by adding a description to the prompt where a user can connect to a server. In this description will be an example of how a correct IP should look. By doing this, users will be less confused about the formats of server IPs.

We also plan to implement an error message for entering an invalid URL.



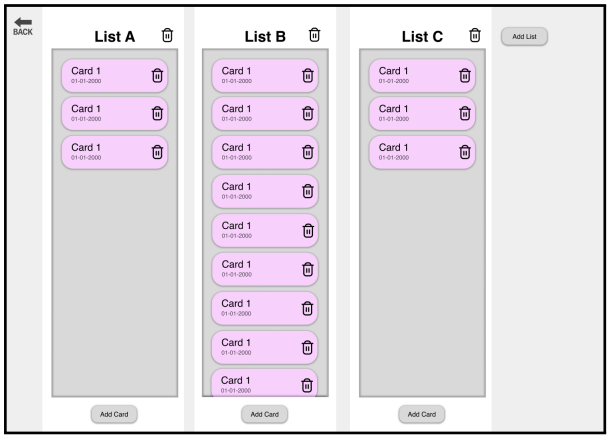
Additionally, we plan to implement a feature, where there will be an addition to the individual boards, where the server that the board belongs to will be clearly printed, e.g. "127.0.0.1" on the bottom of a Board hosted on that server IP. However, we do not put a lot of priority on this, since it is no necessity to the usability of the application and just a quality-of-life feature.

4.2.2 Board Overview: Consistency and standards (Heuristic 4). We will change the name of the 'File' button to 'Disconnect from Server' and the name of the 'Edit' button to 'Boards..'. This way, the button is more descriptive. We will also remove the boards ids, starting with a '#', because they don't add any value to the user experience, according to the feedback of our experts.

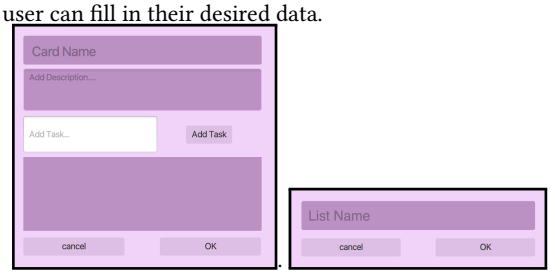


4.2.3 Board: User control and freedom (Heuristic 3). The third aspect on our list of improvements is adding the ability to edit and delete cards (and lists) since they are absent in the current design. A delete button will be added next to the card's and list's name. Also, we will make it more clear that a card and a list can be edited by just clicking on the current names and fields and typing in new text, similarly to how URLs in web browsers can be edited by simply clicking on them. To do so, we made the mouse cursor change, when hovering above the card' or list's name.

Furthermore, we will change the maximum length of the lists relative to the height of the screen and then put the 'Add Card' button below the list, so the 'Add Card' button is always visible for every list. The cards in every list will be cut off, if the amount of cards in a list is too high but they can be accessed by scrolling down the list.



4.2.4 Adding Aesthetic and minimalist design (Heuristic 8). We agree with the reviewers also that when adding a card, it was unclear where text-field borders lay. In response, we added a border around all fields when adding a card, to indicate more clearly where a user can fill in their desired data.



Conversely towards adding lists, we disagree with the poor placement of the 'Add List' button. In the given feedback, it was described that the button may disappear from the screen when having too many lists and could only be accessed when scrolling through the lists. However, viewing the lists is much more important and will be done more often than adding a list, so it wouldn't make much sense to show the add list button always upfront. Furthermore, scrolling through the list would give a user a sense of which lists the user already has added, negating the possibility of a user accidentally creating duplicate lists.

4.2.5 Overall Design Match between the system and the real world (Heuristic 2). Finally, in terms of the overall design changes to be implemented, we have determined a need to re-evaluate distancing between icons, cards, lists, etc. across all pages. Dynamic design capabilities, i.e. adapting the app to the size of the users screen, was a recommended change from the evaluators, and will be a functionality that we plan to implement in the future. The Background color was also adjusted, as it was indicated as a contributor to the 'emptiness' of the application.

REFERENCES

[1] 2023. Talio prototype group 39. https://shorturl.at/rzRU0