OOP Project Report – Group 47

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ABSTRACT

This report presents the findings of a heuristic usability evaluation conducted on the Talio to-do list application. Aimed at identifying and prioritizing usability issues in the product by using recognized usability heuristics, a team of evaluators used a preview of the app to analyze it against the usability standards set in the study. The results indicate that the product has several usability issues that negatively affect the user experience, such as inadequate explanation of functionality, poor layout in certain scenes, and unnecessary or improperly placed buttons. Each problem was separately reported and analysed for its impact, severity, ease of repair and the frequency in which the problem might occur. The issues were then compiled into improvement areas, each highlighting the suggested improvements in a specific section of the app. Finally the results were concerted into action points. They can help with future design decisions, resulting in a more user-friendly and effective product.

1 INTRODUCTION

This report aims to present the results of a heuristic usability evaluation for a prototype of a task management application, which is intended to aid users in organising their tasks, by providing the possibility to group them into lists that are placed on different boards. It was conducted together with partner groups and individuals, and it outlines the possible problems that could harm the overall experience of the user. The report will provide a guide-line of how the prototype was evaluated through fixed heuristics, it will describe the severity of the issues found and propose improvements based on the results. These heuristics outline a model for how a user-friendly app should behave, and comparing this app against them will assist in future design choices.

1.1 PROTOTYPE

The prototype that has undergone the evaluation is a partially functioning version of the whole application, showing an overview of the server selection scene, the board selection scene, the public board, the tag manager, and the adding card, board, and task scenes. In order for the reviewers to consider the application's current goals they also were showed mockups of intended design. Following are scenes from the prototype application all the reviewers got to use. The application has three intended use cases, out of which one is implemented in the prototype. These are:

- Accessing the server's public board, for example a manager posting announcements.
- Working on team board with colleagues.
- Using the private board for managing own tasks.

The app prototype starts with a server selection screen for users to connect to before proceeding to their work. They can then choose to join the public or private board, or go to the board selection scene to join or create a new team board. From there, users can enter the board overview to view all associated card lists.

Figure 1: Landing page

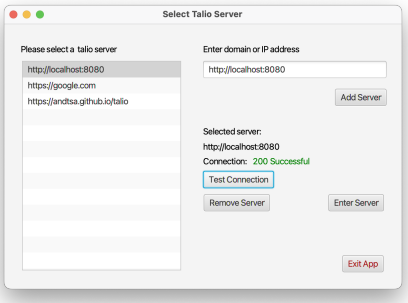

Figure 2: Server Select

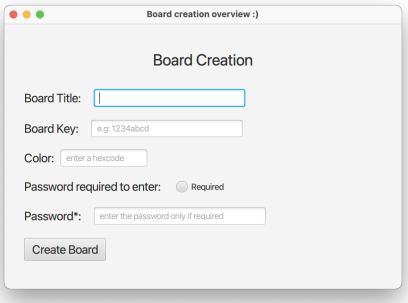

Figure 3: Board Creation

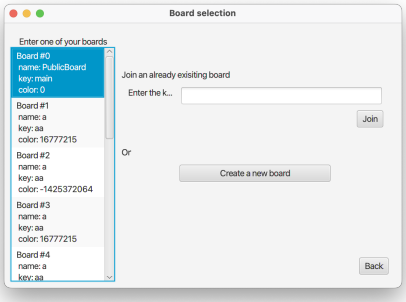

Figure 4: Board Select

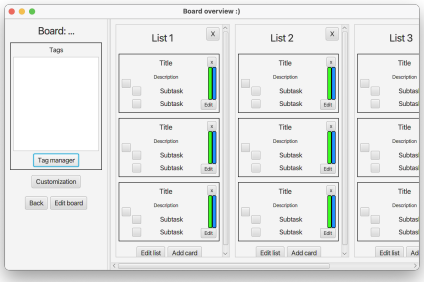

Figure 5: Board Overview

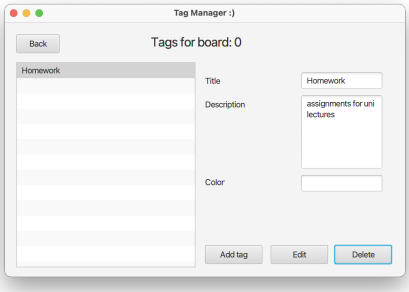

Figure 6: Tag Manager

Taking into account that the application is in an early stage of development, the following mockups represent the guidelines the developers are following.

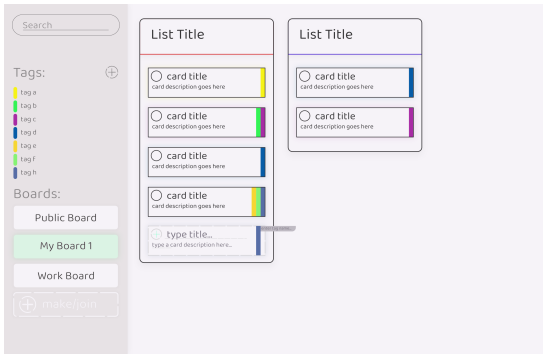

Figure 7: Board Overview

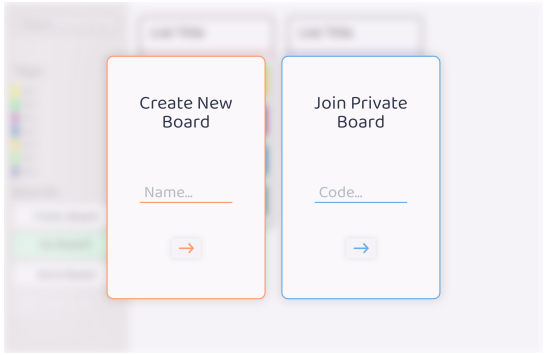

Figure 8: Joining a new board

2 METHODS

2.1 EXPERTS

To conduct a heuristic usability evaluation 4 expert reviewers were recruited. To ensure an in-depth understanding of the desired user experience we selected TU Delft students that are currently developing similar applications. The members of Group 46 participated as a group, representing the demographic of a developer team, evaluating together, and submitting a unified report. The 18, 19, and 19-year-old individual reviewers represented consumers, more specifically students in the intended audience.

2.2 PROCEDURE

The team of experts was called to evaluate an early version of the application, alongside some mock-ups. The application was presented in 3 stages:

(1) Via a video call between the members of the developer team and review team, during which the evaluators were given full freedom to explore the product. After analyzing, they were encouraged to pose questions on the logic behind the design and further investigate the user interface.
(2) Three individual reviewers were given full access to the application-under-development, and they each conducted their review under three perspectives: as a first-time user, as a high-end user, and as an admin.

(3) Each of the reviewers was shown the mockups along with an explanation of what the intended functionality is, so they have a better insight into the design.

The application's developers were overseeing each review process, to ensure the procedure was identical for all reviewers. For any questions that occurred during the process, hints were given only in the case where missing features were preventing a holistic evaluation.

2.3 HEURISTICS IN USE

Cited from TU Delft OOPP Team Lecture Slides [2]

(1) "Visibility of system status: The system should keep users informed about what is going on, with appropriate feedback in good time."
(2) "Match between system and the real world: The system should speak the users' language, with words, phrases and concepts familiar at the user (not technical terms)."
(3) "User control and freedom: System functions may be chosen by the user by mistake; they need a clearly marked 'emergency exit' without having to go through an extended dialogue."
(4) "Consistency and standards: Users should not have to wonder whether different words, situations, or actions mean the same thing."
(5) "Error prevention: Even better than good error messages is a careful design which prevents a problem from occurring in the first place."
(6) "Recognition rather than recall: Try to make objects, actions, and options visible. The user should not have to mentally hold information and transfer it to another part of the interface. Instructions for using the system should be visible or easily retrievable whenever appropriate."
(7) "Flexibility and efficiency of use: Accelerators (such as a function keys or macros) and senior buyer of the novice user may often speed up the interaction of for the expert user. Thus the system that can cater to both inexperienced and experienced users."
(8) "Aesthetic and minimalist design: Dialogues or other interface items should not contain information which is irrelevant or rarely needed. All information on the screen competes with the relevant units of information and diminishes their relative visibility."
(9) "Help users recognize, diagnose, and recover from errors: Helping users recognize, diagnose, and recover from errors. Error messages should be expressed in plain language, precisely indicate the problem, and constructively suggest a solution."
(10) "Help and documentation: Although the system should be able to be used without documentation, it may be necessary to provide help of some form. This information should be easy to search, focused on the user's task (context sensitive), list the steps to be carried out, and be brief and to the point."

2.4 MEASURES

During the video call, the experts were able to observe the scenes as well as the flow of the application. To measure user satisfaction with the application's experience, the reviewing team simulated a reasonable use of the app, taking notes of the above-stated heuristic standards as seen in the app. The meeting was recorded to allow the team to conduct a thorough examination, summarised in a document that highlights the discovered flaws. Reviewers reported issues in a specific format, prepared with a consultation to the video slides on Heuristic Usability Evaluation provided by TU Delft. It consisted of 5 points, namely:
∘ problem description
∘ possible difficulties
∘ specific context of the problem
∘ assumed causes
∘ the violated heuristic standards (from the aforementioned list)

The individual reviewers got to use the application under supervision, taking notes using the aforementioned format. The scenarios were:
∘ New user, without any information on how the application works, attempts to find their way around the app and explore functionality, noting down what makes sense and what does not.
∘ Advanced user, with knowledge of all tools of the app (keyboard shortcuts, special functions), examines how efficient the workflow is.
∘ System Admin, evaluates how easy moderating a server is.

3 RESULTS

Several issues with the current state of the application, regarding both its design and functionality, have been discovered. The reviews received from the evaluators were used to describe problems, and later on, improvement areas.

Problem 1. Overview Clutter

The board page is too full, all the lists and buttons make the space very tight. It is difficult to navigate through the board without feeling overwhelmed.
Related Heuristic: 8

In the board overview page, the app currently has many functional elements in the same space, which can over-whelm a novice user. It might lead to confusion and degraded overall user experience.
"[it is] Difficult to navigate and use the board effectively without it seeming overbearing"[1]

The resolution of this problem is a high priority since the user will likely spend most of their time on the board overview page. As the heart of the application, it is critical that the user experience is best here.

Problem 2.

The purpose of board keys in the app is inadequately explained by the time the user is required to enter one, and if they don't understand how board keys work they will miss out on the app's features.
Related Heuristics: 4, 6, 10

About 50% of the evaluators found that the application's approach to joining a board using a board key may prove difficult for

users unfamiliar with the system. It is not clear how board keys work.

The frequency of this problem alongside the fact that it is a crucial feature of the app will prioritise its resolution.

Problem 3.

The Landing Page does not reflect the actual application's use and is unclear what each button is for.
Related Heuristics: 8, 10

The Landing Page is confusing for new users since it is nowhere specified what the options "public", "team" and "private" actually mean and do. Even though few reviewers reported this, the problem is severe, since it affects the ease of use of the app, because the Landing Page is the entry point of the application.

Problem 4.

The application's color customisation options are user-unfriendly.
Related Heuristics: 6, 7

The app allows users to customize their board theme but lacks a preview option for selected colors. Additionally, there is no default color palette, requiring users to remember their board's colors when making selections such as choosing a color for a new tag.

This issue is not impeding the app's functionality, but will also be taken into account and eventually resolved.

Problem 5.

Adding a new list to the board on the overview page is unintuitive, and the related button is hard to reach.
Related Heuristics: 6,8

The reviewers found the position of the add list button to be inappropriate (located at the end of the horizontally scrollable view of lists, on the right side of the board).

This issue is of low severity, and can be easily resolved.

Problem 6.

Incomprehensive password requirement field on board creation page.
Related Heuristics: 8

The Board Creation Overview page includes a pass-word field and a "password required" radio button, but leaving the password field empty should imply no password. The radio button was added for extra precaution, but it's deemed confusing. The asterisk next to the password field incorrectly implies it's required.

Password protection is essential, it is important that users can efficiently use it. The issue is of moderate severity, but simple to fix.

Problem 7.

Redundant "Exit" Button on Server Selection window.
Related Heuristics: 8

Reviewers found the exit button on the Server Selection window redundant and cluttering, as users can simply close the window to exit the app. The button takes up space without providing any additional functionality.

The problem is of low severity and it is easy to solve since the button can just be deleted and the rest of the screen can be rearranged to adhere to a minimalist design.

4 CONCLUSIONS & IMPROVEMENTS

4.1 IMPROVEMENTS

After conducting the heuristic usability evaluation, we identified areas for improvement in the application. The following sections describe the changes we recommend to enhance the overall user experience.

To prioritize which problems should be addressed first, we evaluate them based on their severity and frequency. A matrix can be created with severity plotted horizontally and frequency vertically. The problems in the top left corner of the matrix, with high severity and frequency, should be addressed as soon as possible, while those in the bottom left corner, with low severity and frequency, can be considered last.

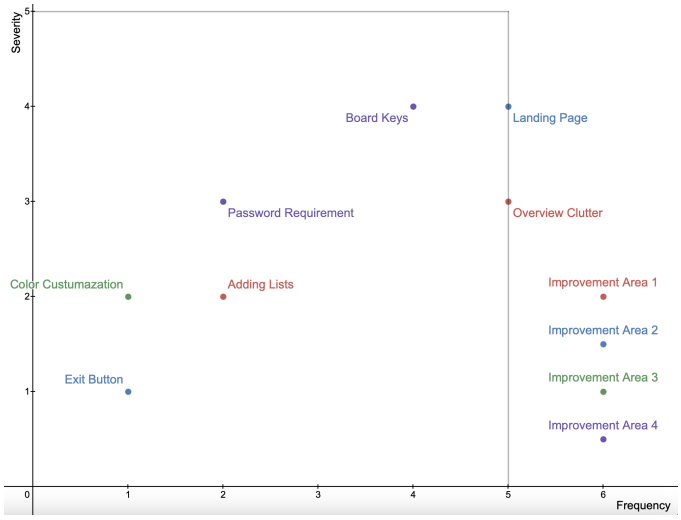

Figure 9: Severity × Frequency Matrix

Improvement Area 1: Board Overview Scene

The current design of the board overview scene suffers from two issues: clutter and poor button placement.

To address these problems, the following changes have been proposed:

First, the add list button will be moved to the board sidebar, making it more accessible and prominent.

Second, the overall design will be simplified by removing card details from the board overview scene and creating a new card overview scene. Users can access the card overview by double-clicking on the card name. This separation of information between the two scenes will result in a more minimalist and user-friendly

application. Following is the new design, approved by the developer team and reviewers.

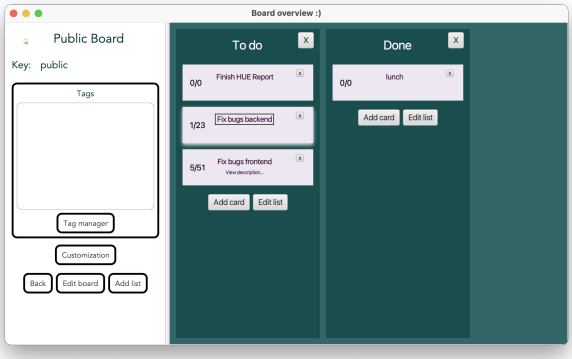

Figure 10: Redesigned Board Overview

Improvement Area 2.

The Landing Page may be difficult to navigate for users without prior context or familiarity with the application.

This issue is addressed by completely redesigning the landing page. In the new design the page serves as the entry point to the application (replacing the server select scene as initial scene), directly offering help via a brief tutorial, and a button to switch to the select server scene. In future redesigns, the buttons on the Landing Page and subsequent pages could be styled with hover effects that provide more information on where each button will redirect the user.

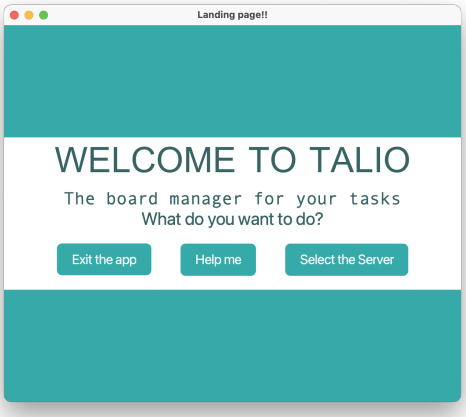

Figure 11: Redesigned Landing Page

Improvement Area 3.

Color customization is difficult to use.

To manage this, the developers decided on a separate color management feature, where the user can decide on the board and lists color, and create specific palettes for the cards.

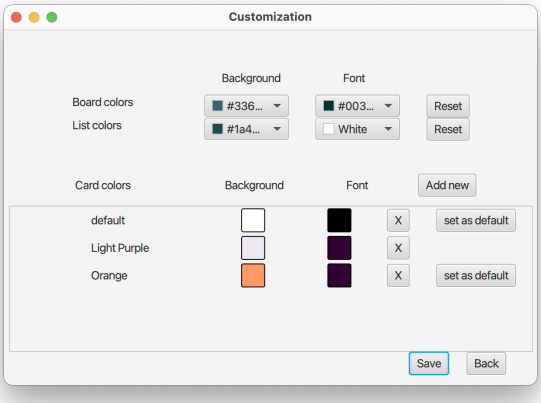

Figure 12: Colour Manager

Improvement Area 4.

This area of the heuristic usability evaluation report identified two main issues with the board creation menu: the board key is confusing for new users, and the password system for the boards is inconsistent.

One solution to the first issue is to change the text that refers to the board key to be more descriptive. Another proposed solution is to elaborate on the function of board keys in the help page.

To address the second issue, the team decided to only opt the user to lock a board with a password within the board's overview page. This meant redesigning the board creation page to simply it as much as possible, moving optional functionality such as passwords and colours to later stages of the workflow.

Following are the proposed design changes.

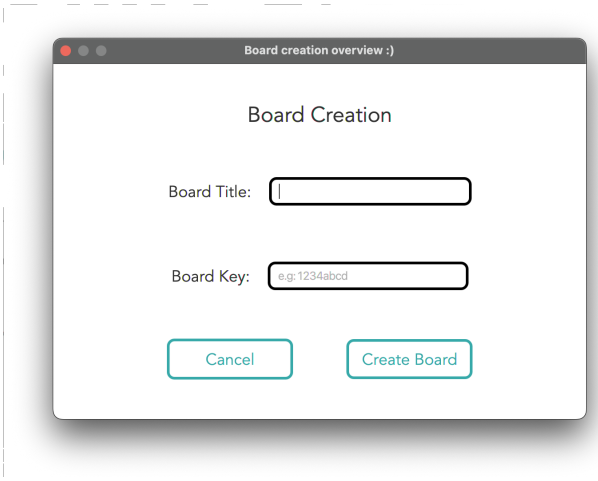

Figure 13: New board Creation scene

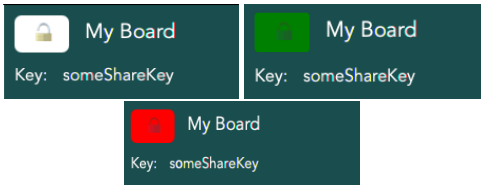

Figure 14: Example of password protection.

Board with no password
Board with password, user has write access
Board with password, user has only read access to the content.

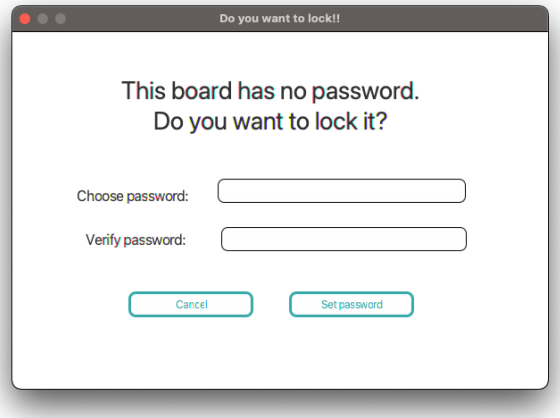

Figure 15: Example of setting a password. User can create a password and lock the board

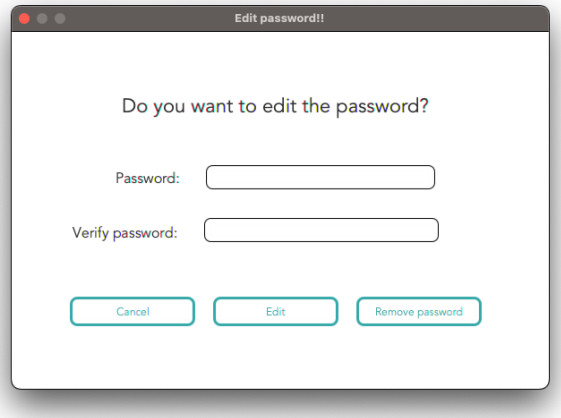

Figure 16: Example of modifying a password. User can edit or remove it

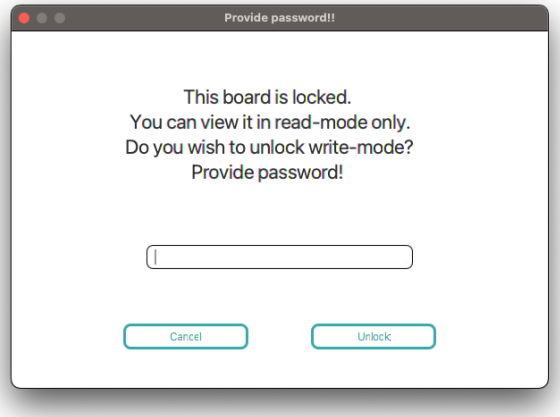

Figure 17: Example of setting a password. User doesn't have access and is prompted to unlock the board

4.2 Conclusion

In conclusion, the team has thoroughly evaluated the user experience design and identified several features that were not user-friendly, despite being logical from a developer's perspective. By cleaning up crucial pages, such as the landing and board overview, it is possible to achieve better distribution of functionality and prevent clutter in some areas or too much user input at once in others. To ensure the most significant issues are addressed, a prioritization was made to implement proposed improvements in each of the four key areas. These changes will significantly enhance the user experience and efficiency of the application, resulting in a more satisfying experience for the users. Overall, the evaluation has been a valuable exercise in identifying and resolving usability issues, and the team is confident that the proposed improvements will lead to a better product.

REFERENCES

[1] Group 46, Alexander Znamenskiy, Arnon Zandt, Christiaan Baraya, Justas Bertašius, and Stanislaw Ostyk-Narbutt. 2023. HUE Review for Group 47's App. Report.
[2] OOP Project Course Team. 2023. Heuristic Usability Evaluation Lecture. Lecture slides.