

OOP Project Report – Group 68

Lucas Pereira Barrios, Willem Dieleman, Morty Wu, Daniël Franke, Jakub Rutkowski

1 INTRODUCTION

1.1 Purpose of Application

The purpose of this application is to assist users in organizing various tasks. To achieve this goal, the application employs a board-based system that contains lists. Users can add tasks to these lists and create new lists as necessary. The application also provides several options to customize tasks, such as the ability to add a description, sub-tasks, and tags.

1.2 Objective of Evaluation

This evaluation aims to identify problems with the user interface, evaluate the effectiveness of design decisions, and provide recommendations to ensure the application meets the users' needs and expectations.

1.3 Prototype

The following subsections and figures provide an overview of the application's various screens and functionalities.

1.3.1 Server Selection. Figure 1 shows the initial screen of the application, where the user is prompted to choose a server to establish a connection with. If an empty address is passed as input, the user will be shown an error dialog with the error *It looks you didn't enter an address*. An other error dialog will appear if a connection with the input address can't be established. The error will read *It looks like the server is not reachable*. After having connected with a server the user will be shown the *Board Listing* screen.

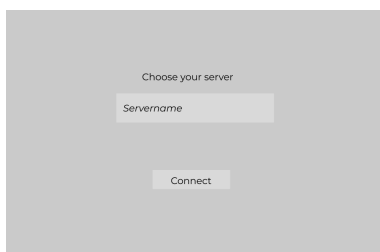


Figure 1: Screen that allows the user to choose a server

1.3.2 Board Listing. Figure 2 shows the board listing screen. The user can see available boards, how many tasks there are, and how many tasks are marked as done on each board. When pressing the *Connect* button, the user will be sent to the *Board Overview*. If a user wants to make a new board a prompt for a title is shown, similar to *Add list* screen.

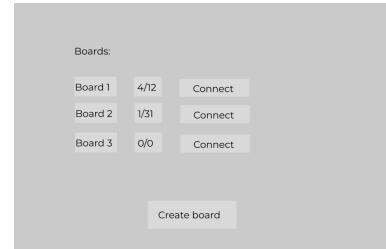


Figure 2: Overview of available boards

1.3.3 Board Overview. Figure 3 shows the screen after connecting to a board. In this overview the user can delete any object by clicking the corresponding *X* button. Deleting a list will remove all the tasks within that list automatically. Clicking the *Add new list* text sends the application to the *Adding list* screen. If the button with the *+* sign in a list is clicked the *Add Task* screen is shown. To view a task the user can double click on the name of a task.

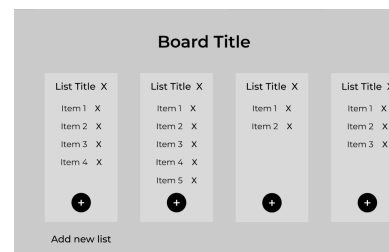


Figure 3: Overview of a board

1.3.4 Adding a List. Figure 4 is the prompt the user is shown when adding a list to a board. If a list is attempted to be added with an empty title, a red error text appears below the text-field that reads *No empty title allowed*. After pressing either the *Add* or *Cancel* button, the user is sent back to the *Board Overview*.

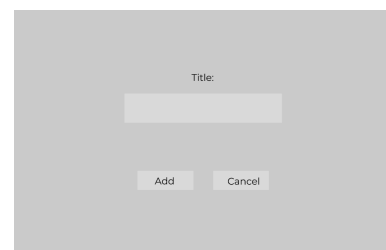


Figure 4: Adding list prompt

1.3.5 Editing a List Title. If a user desires to change the title of a list, they will be shown the screen in figure 5. If the edited title is an empty one, a red error text appears below the text-field with the

text *No empty title allowed*. After pressing either the *Add* or *Cancel* button, the user is sent back to the *Board Overview*.



Figure 5: Screen to edit a list's title

1.3.6 Adding a Task. Figure 6 shows the screen for the addition of a card to a list. The user can add sub-tasks by pressing the *Add task* button, the user will be prompted by a text dialog where the name of the sub-task can be entered. Tags can be added through the use of the button *Add tag*. After pressing the button an overview of all the tags, which are specific to the board, will be shown to choose from. If an empty title is used for a task an error message will appear under the title text-field that reads *No empty title allowed*. After pressing either the *Add* or *Cancel* button, the user is sent back to the *Board Overview*.

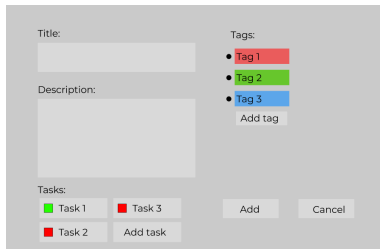


Figure 6: Adding task prompt

1.3.7 Editing a Task. If a user wants to edit a task, the screen in figure 7 is shown. The user can add sub-tasks and tags in the same manner as in the *Add card* screen. Individual sub-tasks and tags can also be removed by pressing the corresponding *X* button. If an empty title is used as the new title an error message will appear under the title text-field that reads *No empty title allowed*. After pressing either the *Add* or *Cancel* button, the user is sent back to the *Board Overview*.

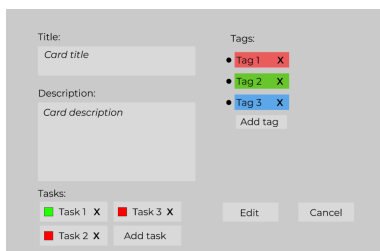


Figure 7: Editing of a task

1.3.8 Task Overview. Figure 8 shows the screen after a user double clicks on a task. The user is shown the description, tags, and sub-tasks of the task. The user can sign a sub-task on or off by clicking on the checkbox next to a sub-task.



Figure 8: Task overview

1.3.9 Help Screen. Additionally, there is a screen with all of the available shortcuts a user can utilize, this screen is shown in figure 9. After pressing *Okay* the application will go back to the screen where the *Help* screen was called from.

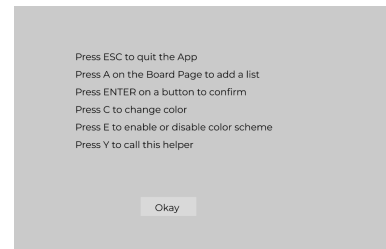


Figure 9: Help screen

2 METHODS

Experts

We recruited another OOPP group as our experts, while we were being their experts. We ended up finding group 51 as our experts. We met up with two of their members and got feedback from them in person, but this was not enough experts. Due to this, we decided to find some more experts. Everyone in our group were tasked to find a different expert so we would end up with 5 experts. We ended up finding 3 extra experts: someone got their roommate and some one else got their parents. They are all equal experts in this subject and their expertise is the same.

Procedure

We provided the expert with a prototype of what we would imagine our full UI would look like (see previous section).

We gave our experts a guide on how we would like to receive their feedback. They were tasked to explore the UI as a typical user would and try to envision how they would complete common tasks and workflows within the prototype. They needed to take notes on missing features and usability and design issue as well as suggest UI improvements for those problems. Their problems needed to be in a specific format (see next section). What they also needed to do is assign a frequency score: how often you encounter the issue, and

a severity score: how impact full the issue was when encountered. At the end they needed to order the problems based on these scores, so we would know which problems needed fixing first.

After this, we gave some simple tasks to execute and see if they run into any problems. These tasks were:

- Create a new board with a 2 lists and 3 cards with just a title each.
- Create 3 tags with different colors.
- Edit a card by adding a description, the three tags and 4 tasks.
- Go to the card overview and mark all tasks as done.

With all of these tasks, they again needed to find UI problems with the entire format as mentioned previously.

With the 5 experts, there was an observer that could give hints if needed and wrote down how the experts were engaging with the UI.

Measures

The format of the feedback they needed to give is the following:

1. Problem description: a brief description of the problem
 2. Likely/actual difficulties: the anticipated difficulties that the user will encounter as a consequence of the problem
 3. Specific contexts: the specific context in which the problem may occur
 4. Assumed causes: description of the cause(s) of the problem
 5. Suggestion: how should the UI be updated to resolve the problem
- They were asked to each do it individually and at the end combine all their findings into one big list of improvements. They were also asked to provide a short section containing feedback over the overall application.

3 RESULTS

The feedback we have received can be divided into 8 action points. Each point will be described below. We have ordered the feedback points in the following way: the first points are the ones that are clearly bugs. Following are the feedback points that are linked to the user control and freedom heuristic since these feedback points will greatly improve the usability of the application. The last feedback points are the ones of the Help and documentation heuristic and the design heuristic. Improving these points will optimize the application but they are not necessary for a working and intuitive application.

List continues of screen

Whenever there are too many lists to show on the screen, the lists will continue off the screen. The hidden lists can be seen by scrolling through the application, which will reveal the off-screen lists. The experts missed an indication that shows that users can scroll through the lists that are currently not on the screen. This could for instance be a scroll-bar or an arrow.

This feedback is linked to aesthetics and minimalist design. The lists that are shown off the screen is obviously a flaw in the design. Fixing these mistakes makes the aesthetic of the application better.

Return button

Our current design does not have an option to return to the "choose a server" page. Whenever a user has chosen a server, this server will be used for the application. When a user wants to connect to a different server, they will have to close and re-open the application.

The experts suggested adding a back button that would return users to the "Choose a server" page.

The experts also missed a return button on the board scenes, which prevents users from directly going back to the main screen. They suggested adding return buttons on all the screens, allowing users to easily navigate the application

This feedback is linked to the User control and freedom heuristic. This heuristic states that users should be able to redo certain actions. Allowing users to choose a server and go back and navigate through the application supports this heuristic.

Edit title

There currently is no button that users can click to go to the "Edit title" screen. This screen will appear when a user clicks on the title of a card. The experts found this interaction not intuitive and suggested adding a button to edit the title (and description) of a card.

Also this feedback is linked to User control and freedom since it allows users to edit some of the mistakes they made.

Minimalistic design

The design we made for review was quite minimalistic. We chose this option since we would then be able to change the design during the development process. However, we received the feedback that our design was too minimalistic. The experts suggested adding some icons to make the application more user-friendly.

This feedback is linked to the Aesthetic and minimalist design heuristic. This heuristic states that the design of an application should be minimal and not contain information that is irrelevant or rarely needed. Our design however is too minimalistic which makes the application less intuitive.

Delete board

Our application does currently not have an option to delete boards. Whenever a board is made it will stay in the main screen. Lists and cards can be removed by users, but boards not. The experts suggested adding the option to remove a board. They noted that there is not yet an option for editing (the name) of a board, which would also improve user interaction.

This feedback is linked to User control and freedom since it allows users to edit some of the mistakes they made by removing boards.

Helper Scene

In our design, there is a dedicated scene for explaining the keyboard-shortcuts. This scene can be opened through the main scene and by pressing Y. The experts suggested adding a small "?" or "Help" button in every scene so that it is more easy to find the meaning of each keyboard-shortcut.

This feedback is linked to the Help and Documentation heuristic. This heuristic states that an application should be usable without documentation, but that for some parts it may be necessary to provide extra information on how to use certain parts of the application

Tag creation

The experts noted that the tag creation is not properly explained.

There is not a clear menu for adding tags to cards. Adding a menu where users can add colors and tags to a card would improve the application.

This feedback is linked to help and documentation. It is not clear for the users how and where they can add tags to cards. Adding this functionality will help the users to use the application.

Card indicators

On the main overview of all the boards, each board has an indicator that shows how many cards there are currently on the board. This could for instance be 4/31. This number is not properly explained and for users this can be quite confusing. The experts suggested adding an explanation or an icon to show what the number means for every board.

This feedback is linked to the heuristic: Match between the system and the real world. The indicator of how many cards there currently are on the board is not in the language of the users and is not easy to understand.

4 CONCLUSION AND IMPROVEMENTS

4.1 Improvements

Adding Cards and Boards

The card creation scene should be made more expansive by adding input boxes for the details: description, tasks, and tags.

The add and cancel buttons should be swapped or a warning should be created when pressing the cancel button. We implemented full functionality for the cards and boards in order to provide the users with better use of the application. We found the tags and details helped organize the workflow much better.

More intuitive icon designs

Before we used a lot of text to describe the functionalities of buttons. After the feedback, we decided to change some of the intuitive ones like adding a password or becoming an admin into picture icons. It turned out to improve the general usability of our application.

Tasks

Keeping the application minimalistic is good but based on usability and aesthetics. We decided to implement task functionalities in order to avoid writing too many related tasks into multiple cards. Furthermore, we decided to use customized colored tags to help identify specific tasks. Our application keeps a light color scheme and grey by default. A bright color usually brings attention to the users regarding the importance of the tasks.

Board Buttons

A disconnect button was created and placed somewhere (for example above the list of boards) as per our original plan. In the end, we implemented it on the board's page with a red color to be more alert. This helps the user quickly identify the button and realize the functionality intuitively.

Search function

Make a separate window to show the boards containing the cards,

and lists, or simply highlight the specific card or lists, or boards.

4.2 Conclusion

After conducting a heuristic evaluation of our project, we have identified several areas for improvement to enhance the usability of our application.

The addition of input boxes for details such as description, tasks, and tags enhances the heuristic of "user control and freedom" as it provides users with greater control over their tasks and the ability to customize their experience.

Implementing customized colored tags and task functionalities aligns with the heuristic of "Help and documentation" as it provides users with helpful tools to organize and manage their tasks.

Furthermore, improving the board view by making the lists move dynamically with the list of boards enhances the heuristic of "aesthetic and minimalist design" by providing users with an interface that is visually appealing and easy to navigate.

Overall, we believe that these improvements will significantly enhance the user experience and usability of our application. We appreciate the feedback received from the heuristic evaluation and are committed to implementing continuous improvements to our application to ensure the best possible user experience.

Updated designs:

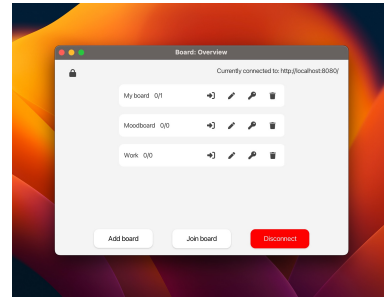


Figure 10: Screen that allows the user to enter/create a board



Figure 11: Overview of a board

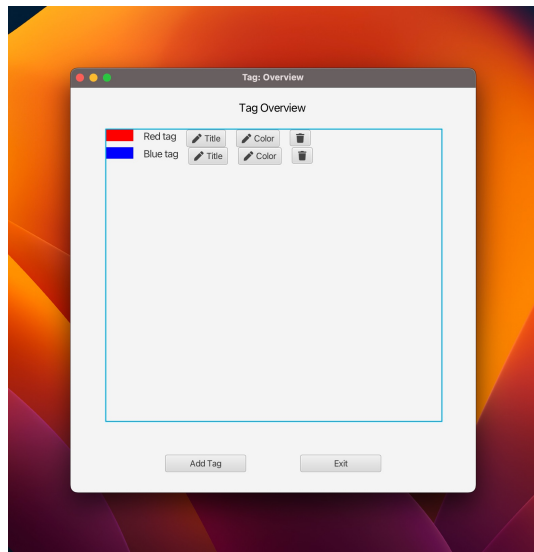


Figure 12: Overview of the tags

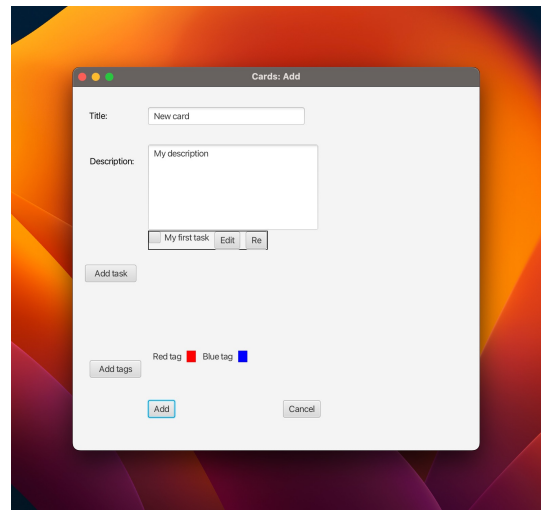


Figure 13: Screen that allows the user to create a task