

OOP Project Report - Team 66

Vinchentzo Bunardzhiev, Călin Ciocănea, Sofia Dimieva, Diana Șutac,
Aleksandar Yotkov, Kirill Zhankov

ABSTRACT

A heuristic usability evaluation is a method used to assess the usability of a product from a user's perspective, based on the set of usability heuristics; for the purposes of this project we have used Jakob Nielsen's set of rules. Such evaluation helps in identifying pre-existing usability issues of the product and provides solutions that can help ensure that all the user's needs are met.

1. INTRODUCTION

This is a report on the heuristic usability evaluation that we conducted for the Talio app, a personal task-list organiser. The objective of this evaluation is to identify usability problems in our product and to acquire suggestions for improvements that can lead to a better user experience.

The application consists of a task-list organiser with a client-server architecture. When opening the application, the user is met with a homescreen where they can join someone else's board with a unique key, see their list of boards or create a new board. Either of the options will take them to a screen of the board where they can change its title, add new lists to the board, delete the board or edit it. Inside a list, the user can change its title or customise it and add, edit or remove cards. When pressing a card, a new window will pop-up with its details: title, description, list of tasks with progress bar, tags and a button that allows the user to customise a card. The tags are also customizable with different colours and names. The ability to drag-and-drop cards between lists is also a feature of the application, as well as making the board password protected. All of these can be seen in the prototype added below.

2. METHOD

In order to conduct this evaluation, we recruited another team of six students from the OOP Project to be our experts. Since they are in their first year of their Bachelor of Computer Science and Engineering, their level of expertise is low, but we made sure they were familiar with how to conduct a proper Heuristic Usability Evaluation.

Our procedure was straightforward for the purpose of being as efficient as possible while also maintaining the quality of the evaluation we would receive and give.

At first, our team met up with the experts in person in order to communicate better with each other. Therefore, we could talk extensively about the whole procedure and we could fully understand the problems they found and the suggestions they provided.

Then, we split up into three groups, each one consisting of four members: two experts and two team members that would present the prototype. We felt that this was the best approach to find the most usability issues in our product and to receive different suggestions for improvement since each expert could report back a different set of problems that would be combined by us later on.

After splitting up into teams, each of us would explain to the experts what the process would look like, the ten heuristics they would use to provide feedback (visibility of system status, match between system and real world, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design, help users recognize, diagnose and recover from errors, help and documentation). Then we presented them with the wireframe of the application (Fig. 1). We would show them how everything works, what all the buttons do and how the product should work in a final stage. While doing this, they would compile their feedback.

After this was done, we showed them a demo of the application in order for them to play around with its functionalities. This way the experts could get a feel of what the product would actually look like at the end and provide more useful suggestions about the usability of this project. We made sure to help the experts just enough so that they would not get stuck completely when using the demo. The experts would tell us what problems they have found verbally and one of our team mates would write it down in our notes. This method made the process of standardising the results harder, however it allowed us to better understand the specifics of each problem.

After gathering the feedback of the experts, we had a meeting to rearrange all the points raised during the evaluation based on their importance, the frequency with which the issue occurs, the heuristics and the gravity of the problem.

The provided feedback consists of improvements that can be added to the wireframe (for example: adding a list of all the boards, changing the shape and colour of some buttons for more clarity, etc.) and problems found in the demo (for example: the app is not resizable, the lists should be scrollable, etc.). Our experts were focused on all aspects of what makes an application usable, but they were sure to make it clear that some heuristics had a greater weight than others. For example, the experts insisted the most on the following three heuristics: Visibility of system status, User control and freedom, Recognition rather than recall.

The meeting we had with the experts was successful and we made efficient use of our time with them. At the end we filtered the feedback to eliminate duplicates and rearrange them. From this, we remarked that all of our experts found at least one issue that was not found by the others.

3. RESULTS

The outcome of the evaluation we got were mostly design flaws on the user interface and user friendliness, several defects on the functionality side and some user assistance suggestions. We decided to classify them based on the 10 usability heuristics and

prioritise them by severity of the issue and the frequency of occurrence. Each issue is given 1 to 5 on the severity and 1 to 5 on the frequency, and if two problems have the same score, the more important one is chosen based only on the severity. Each problem will have a "Score:" followed by the score calculated by the team, e.g. "Score: 7" if it has 4 for frequency and 3 for severity. Here are the 10 usability heuristics used in this report:

1. Visibility of system status
2. Match between 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

Each point will have a "#" at the end followed by the number of the heuristics into which it falls, e.g. "#5" if it is connected to Error prevention.

The results:

1. Score: 9 - Users can't use the scroll bar to go through boards when the app is resized. - #1
2. Score: 8 - Users can't connect as admin. - #5
3. Score: 7 - User is auto focused on the first list in the board when adding a new card to any list. This issue highly affected the users ability to focus on their current task by interrupting their workflow. - #1
4. Score: 7 - Card list is not scrollable, but cards get smaller. The user can only scroll on the entire page, not on individual lists. - #1
5. Score: 6 - Users can't change the default prompts. - #3
6. Score: 6 - Users can't create or edit tags. - #1
7. Score: 6 - Users can't see all his boards in one place. - #3

8. Score: 6 - Users can't use keymapping for more productivity. - #7
9. Score: 5 - Users can't keep track of how many tasks in a card list they have created. - #6
10. Score: 5 - Users can't use already existing tags. - #7
11. Score: 5 - When attempting to change the name of a card or card list using its dedicated menu, the text area should contain the current name. - #4
12. Score: 5 - Users can't delete boards efficiently. - #7
13. Score: 5 - There is no menu or description explaining the usability of the app. - #10
14. Score: 5 - There is no description about the customizations you make. - #10
15. Score: 5 - Users can't disconnect from the Start page. - #4
16. Score: 4 - When changing the name of a card, the board closes. - #7
17. Score: 4 - Users must first write the key for the board and then write the password in a new window, instead of writing everything in one window. - #8
18. Score: 4 - App text and window is too small for people with visually impaired people. - #8
19. Score: 4 - When many cards are added, the "+" button sticks to the bottom of the list. - #8
20. Score: 4 - Users can't make the app bigger or smaller when resizing the window. - #7
21. Score: 4 - User must write the whole server address in order to join the default server. - #6
22. Score: 3 - The name of the card can't be changed with clicking on it. - #7
23. Score: 3 - List name could be changed when clicked on is not noticeable. - #7
24. Score: 3 - The change button doesn't close the pop up. - #4
25. Score: 3 - User can't get a board overview. - #3
26. Score: 3 - Disconnect button isn't recognizable. - #8
27. Score: 3 - Text in cards is too big for the card. - #8
28. Score: 3 - When text and background are the same colour they are hardly recognized. #8
29. Score: 2 - The button for adding cards is too big in comparison with the actual cards. - #8
30. Score: 2 - "Add new card list" button is too big in comparison with the app size. - #8
31. Score: 2 - Drop down menu is wasted with only two buttons. - #8
32. Score: 2 - Drop down menu options are too overladen. #8
33. Score: 2 - Button icons aren't really recognizable. - #8
34. Score 2: User can't really identify the app by the icon. - #8

4. CONCLUSION & IMPROVEMENTS

From all the information we gathered and based on the results of the report, we can conclude that heuristic usability evaluation is a useful method for finding flaws in the design of our project. Some of the problems found by the experts were things that we would have never considered otherwise. This evaluation helped us imagine what would the user like to see in our product and what are its expectations. It also showed us how important it is to take into consideration the opinions of the people that will use the application, since they will encounter all these problems and their experience will be based on these issues.

We'll take into consideration the results that were found while working on the product. We'll also look at the suggestions given by the experts and change the things they were not satisfied with. Since we saw how important the user's feedback is, we'll be more careful when working on the application.

We already started modifying some of the things found in our results. One of the first feedback we acted upon was removing the

autofocus on the first list when adding a card to any list on the board. This was a problem for the user, since their workflow would have been interrupted and it would have been tedious to scroll through a lot of lists on the board each time an action was made or a button was pressed. With this fix the user can work uninterrupted and they can also see the card being created, which improves visual feedback.

Another issue we touched upon was being able to see the current name of a card or card list in its menu, when attempting to change its name. This was an issue because if the user lost focus while changing the name of a card, they had to close the tab and find again the card they wanted to modify. This change improves the users ability to make small edits to a cards or list name, not having to type the entire name again. It also suggests the purpose of the text area which improves overall usability of the menu.

For the other problems and suggestions provided in the feedback given by the experts we'll take into account the rearrangements we made to the list of issues and the heuristics. We'll first start with the problems that have a greater effect on our application and on the user's experience, for example the fact that the app is not resizable, or that there are no exit buttons to go back to other screens. Then we will look at the list of the ten usability heuristics and follow their importance, starting with visibility of system status (for example: receiving feedback when a list or card is created) and ending with help a documentation (for example: add description to some of the button when hovering over them with the mouse or explain where the key of a board could be found). After this is done, we will take into consideration some of the visual problems (for example having a hovering effect to show that a list's title can be changed when pressed, changing the icons of some of the buttons) while also working on adding the functionalities we have planned (for example: adding keymapping, adding the possibility to customise tags, lists and boards) and some functionalities that were given as suggestions (for example: have a default "connect to server" button for easier access, add colour correction to avoid writing and background of the same colour).

Of course the final application will be better than the prototype we showed the experts, since this time we will take into account the user's needs and expectations. Therefore, from a client's perspective, the application will be more user-friendly, it will have better features and it will have a minimum amount of problems while running.

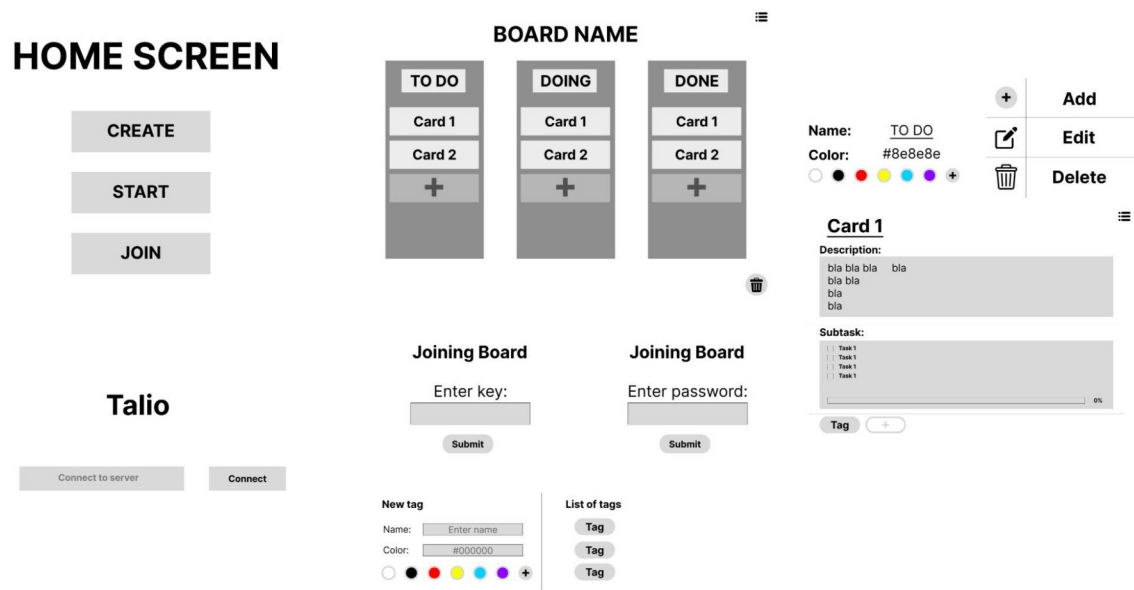


FIG. 1 Prototype of the application that was showed to the experts of the evaluation