**Applied Research Document**

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# Introduction

In the presented document, the team will analyze problems related to project structure, code quality, and overall technical difficulties that have affected the quality of the product. Main question, supported by sub-questions, will be used in order to gain more insight to how specific problems can be resolved. Solutions to these, reasoning, and results to the said questions will be presented throughout the analysis.

# Main Problem and Main Question

During the development of the application, various problems arose, starting from connection to the database, booking system functionality and the recent websocket configuration issue. Now, after the minimal viable product has been finished, and main functionality only requires polishing, the unsolved issue remains the User Interface and User Experience, which dramatically affects the application and the users involved.

**Main Question:** How to make the application more user-friendly?

# Sub-questions

## **What do the users require from the User Interface?**

1. **What of Our Research**

* The users of the application should be studied. Who is mainly going to use it?
* What would the stakeholder aim for? Functionality or design?
* Can the developers think from the point of view of a first-time user? What conclusions can they make?

1. **Why of Our Research**

* The research aims to provide the developers with more understanding of their users and their desires.
* The opinion of the stakeholder is our greatest priority. We are looking for their satisfaction, having discussions once every three weeks in order to know what exactly to aim for.

1. **How of Our Research**
2. Field

- The research can be conducted by establishing communication with potential users. For instance, a survey can be conducted. Surveys are vital in creation of a software, since you can gather information from a certain group of people in a fast and efficient manner.

1. Library

- Many sources of information can be examined online. Numerous articles have been published related to issues with design. In case a survey is not sufficient, the team has enough sources of information to conduct more in-depth analysis.

1. Workshop

- The team will gather to discuss the issues related to the interface of the application. Based on the discussion, the group can reach to solutions on what should be changed to make the interface more appealing and easier-to-use. It should be according to the stakeholder’s and the users’ standards. Afterwards, work on the product can be conducted, and a high probability of acceptance testing may be required.

1. Lab

- Acceptance Testing consists of users that have not been involved in the development of the product that test the application. Their reactions and questions are monitored, and based on the received feedback, the application can be improved. This approach is simple and very beneficial in the creation of any user-oriented software.

## **What should be changed in the User Interface to make it more user-friendly?**

1. **What of Our Research**

* The application should be reviewed. What is a part of the application that might seem confusing to a regular user?
* Does the stakeholder understand the features of the application and how to use it? Will they be able to navigate through the application with ease?
* Will the users understand what to do at a first glance?

1. **Why of Our Research**

* This research should be made to learn more about the experience of the users. It is important to keep User Experience in mind when establishing new functionality to the application. A confusing product may lead to unsatisfied stakeholder(s).
* The team should carefully analyze each feature that has been added to the application in order to conclude how easy it is for a user to navigate in the application.

1. **How of Our Research**
2. Field

- The team will look into the application from the perspective of a user. They are free to also enquire third-party users and test their ability to orientate into the programme. In case they find it difficult, changes will be made. The goal of a user-friendly product is that the user knows how to use it the moment they pick it up.

1. Library

- There are many online sources that have steps and guides to how to create a user-friendly product. They will not be strictly followed, however, and flexibility will be included so that the suggestions align perfectly with the creation of the software.

1. Workshop

- In one of the prior meetings with the software group, it was decided that a “Help” menu will be a great solution to the current issue. When the button is pressed, a menu with several topics will appear. Clicking on a topic will redirect the user to a page, where a video will appear, explaining how to do the method of the certain topic. This approach will make the application much easier for the new users to understand and will assist the less “tech-savvy” users, even if the application is already easy to use.

1. Lab

- The feedback received from the stakeholder and prior meeting guests will be very carefully reflected on, considering every single functionality that might have an easier approach. By doing this, the team will get a full understanding of how the application can become more user-friendly and change it based on the conclusions made. Thus, the customer will remain satisfied.

## **How to make changes to the User Interface without affecting the current functionality of the application?**

1. **What of Our Research**

* Do we need to change our existing functionality in order to make our application easier to use? If yes, how?
* Should we remove any unnecessary features that make the application more complicated?
* Which features have more priority to be refactored over the others?

1. **Why of Our Research**

* This analysis should be conducted in order for the team to know what approach to use when making changes to the overall interface while keeping in mind the user experience. A change in the interface may drastically affect the functionality of the program, which might lead to the refactoring of the entire front-end part of the application.

1. **How of Our Research**
2. Field

- The group is obligated to analyze every possible risk when refactoring the User Interface. Any changes that are not discussed with the other members might lead to issues in the flow of the application. This is why changes in UI will be done together as a group or only when discussed thoroughly.

1. Library

- Sources online can assist with some information on how to avoid such situations. One way is to actively commit in the GitLab repositories. This is a good approach in case something does not go to plan. Another approach (which we have already implemented), is the layering in the application, meaning that by having clean architecture layers, changes in one of them should not affect the other. This will minimize the risk of failure.

1. Workshop

- During the meeting discussions, the members responsible for front-end design might plan a Figma prototype. Figma is a great design tool for team collaboration, which is simple enough to use and create spectacular prototypes. By doing so, it will be easier for the team to get an idea of how the application’s final version might look, decide on how user-friendly it is, and make changes to it before the actual implementation commences.

1. Lab

- After the creation of the prototype, it can be presented to potential users of the application, which will share their opinion on it. From the received feedback, more changes will be made, and when the prototype version is finalized, the refurbishment of the user interface itself can begin. As long as the interface is based on stakeholders’ requirements, the team members will know exactly how to proceed.

# Conclusion

Overall, the main focus of the upcoming meetings will be related to the user interface and how to make the experience for the users better. Until the project deadline, the group will put more effort into refactoring the current product, fulfilling the stakeholder’s needs. We will also consider creating tutorials for new users, making the use of the application as simple as possible.

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