



Project Report

BATTLE SHIP GAME

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Informationmanagement @ FH Joanneum

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1 Project Structure

1.1 Team

The project team is called “**DieEierbaeren**” and has the team id “**EBB**”. Every team member is responsible for his work and has a defined role, however, it is possible that team members work together on specific work packages.

| Team Member | Role |
|--------------------|-----------------------|
| Nikolaus Spieß | Design & Layout |
| | Project Management |
| | Development |
| Maximilian Steiner | Project Documentation |
| | Project Management |
| | Development |

Table 1: Team Members

1.2 Project Methodology

We use an agile project management approach. Since our team only consists of two members we have to be flexible. Every member has a defined role but may also work together with other team members on certain tasks.

2 Work Packages

There are three major work packages for this project where every WP has its defined deadline.

2.1 WP1: Project Planning | Mock-Up Design

This work package includes the design of the mock-ups and project planning and is due on January 14th 2018.

Project Planning

Deadlines

The table below shows the deadline for each WP and the final deadline for the project.

| | |
|-----------------------------|--------------------------------|
| Project start | December 19 th 2017 |
| Deadline WP1 | January 14 th 2018 |
| Deadline WP2 | January 23 rd 2018 |
| Project end == deadline WP3 | January 25 th 2018 |

Table 2: Deadlines

Effort Estimation

| Planning & Design | Estimated Time |
|---|----------------|
| Project Report including Time-, Effort- & Cost-Estimation | 4h |
| Mock-Up-Design | 6h |
| Scene Creation | 2h |
| Project Documentation | 1h |
| Σ | 13h |

Table 3: Effort Estimation – WP1

| Functional Implementation | Estimated Time |
|---------------------------|----------------|
| Basic Code Implementation | 30h |
| Start Screen | 2h |
| Welcome Screen | 2h |
| Credit Screen | 2h |
| Highscore Screen | 5h |
| Edit Screen | 5h |
| Bug Fixing | 2h |
| Manual | 2h |
| Project Documentation | 1h |
| Σ | 51h |

Table 4: Effort Estimation - WP2

| Project Close | Estimated Time |
|-----------------------|----------------|
| Code Cleanup | 1h |
| Project Presentation | 4h |
| Project Documentation | 1h |
| Σ | 6h |

Table 5: Effort Estimation - WP3

Time Estimation:

According to the effort estimation of each work package the total time needed for the project results in:

| Workpackage | Estimated Time |
|-------------|----------------|
| WP1 | 13h |
| WP2 | 51h |
| WP3 | 6h |
| Σ | 70h |

Table 6: Time Estimation

Cost Estimation:

The cost of one working hour is estimated with € 25,00 and the whole project requires 70 hours to complete which results in a total of **€ 1.750,00** for the project.

Mock-Up Design

Start Screen:

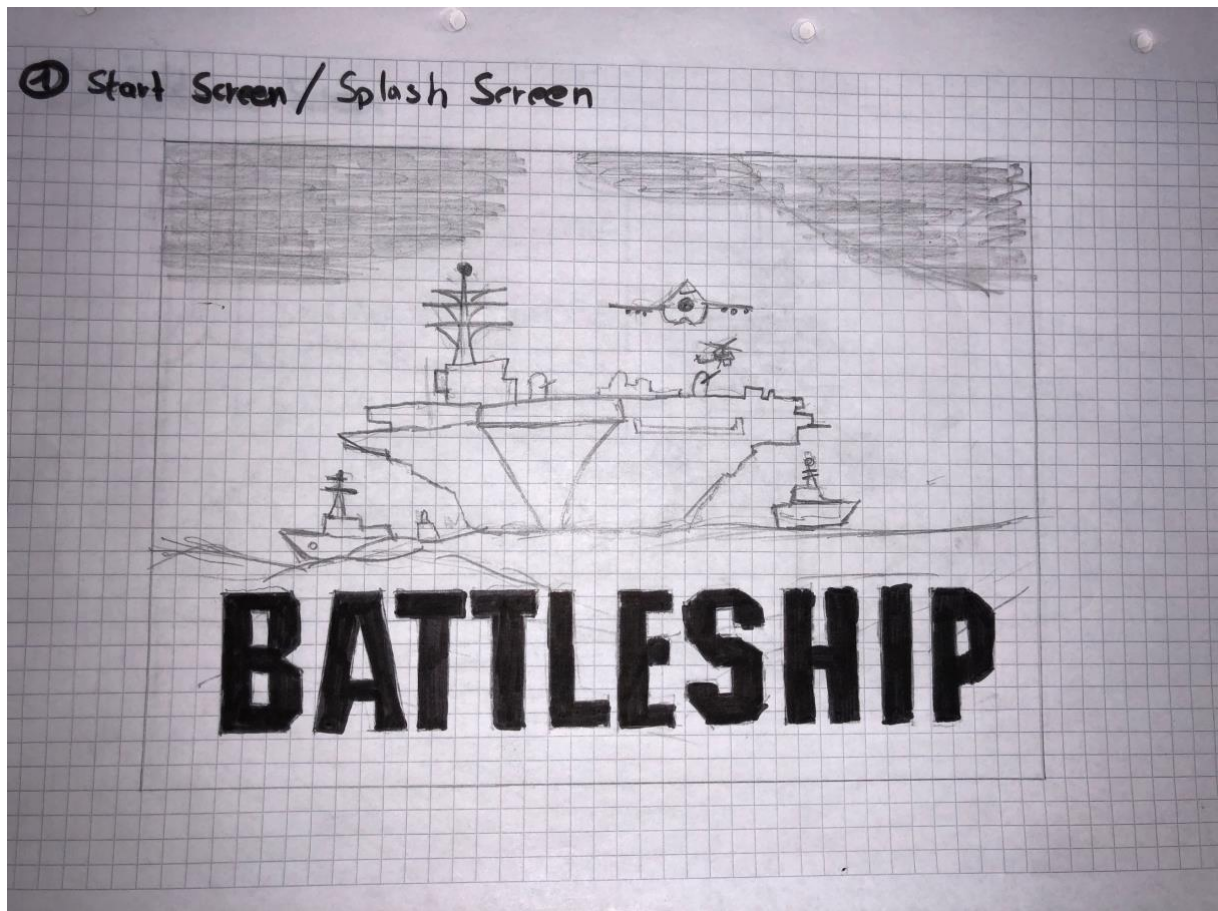


Image 1: Start-Screen

The start screen will be the first screen displayed when the application is launched. It will consist of an image of a military fleet and the name of the application.

Welcome Screen*Image 2: Welcome-Screen*

After the start screen, the welcome screen will be displayed to the user. It will consist of an image of a battleship as well three buttons.

| Button | Description |
|------------------|--|
| Start A New Game | Starts a new Game and will direct the user to the Edit-Screen. |
| Show Highscore | Directs the user to the the Highscore-Screen where all highscores are listed. |
| Show Credits | Directs the user to the Credit-Screen where information about the developers are listed. |

Table 7: Welcome-Screen Buttons

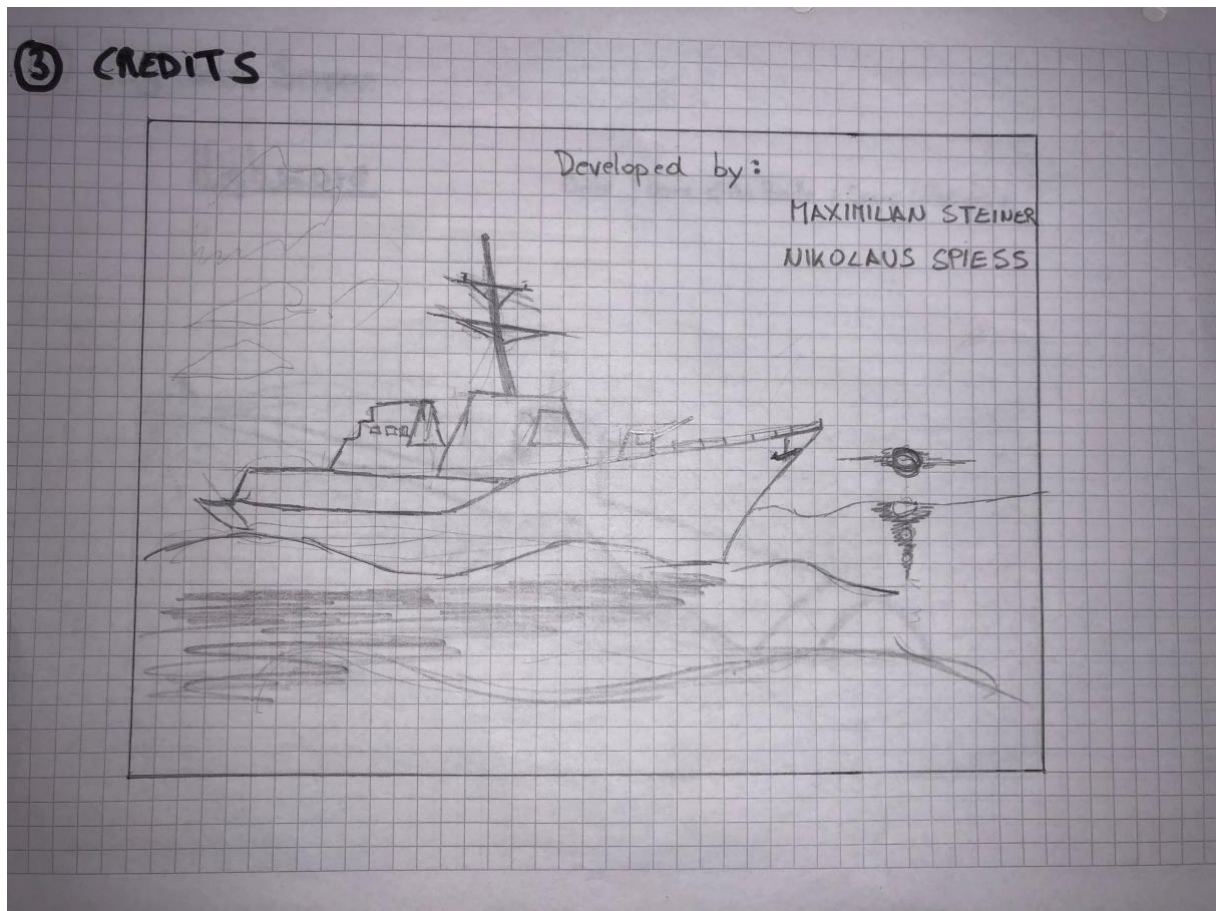
Credit-Screen:

Image 3: Credit-Screen

The Credit-Screen will consist of an image of a battleship and will provide information about the developers as well as legal information about the game.

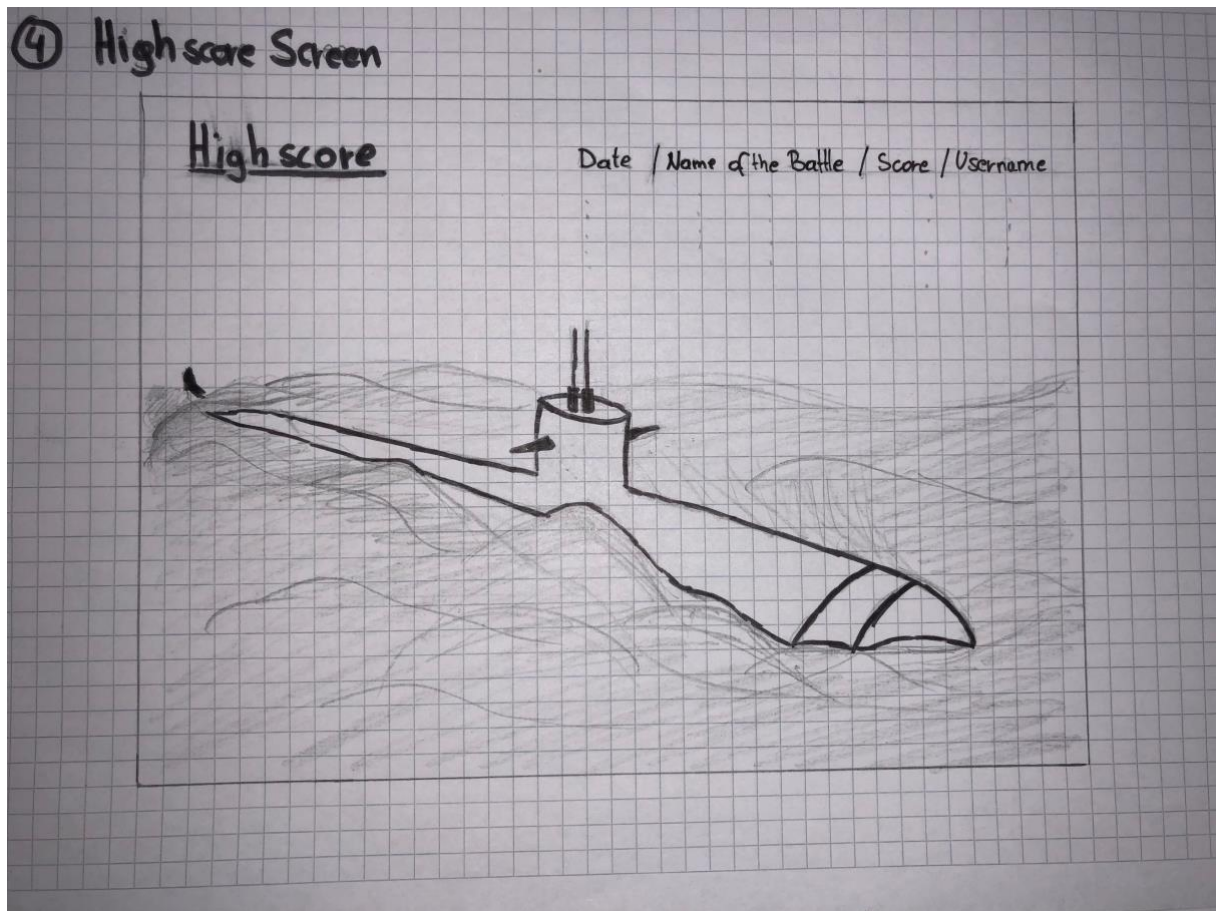
Highscore –Screen:

Image 4: Highscore-Screen

The Highscore Screen will consist of an image of a submarine and will show the highscores of previous played games in the format:

“Date/Name of the Battle/Score/Username

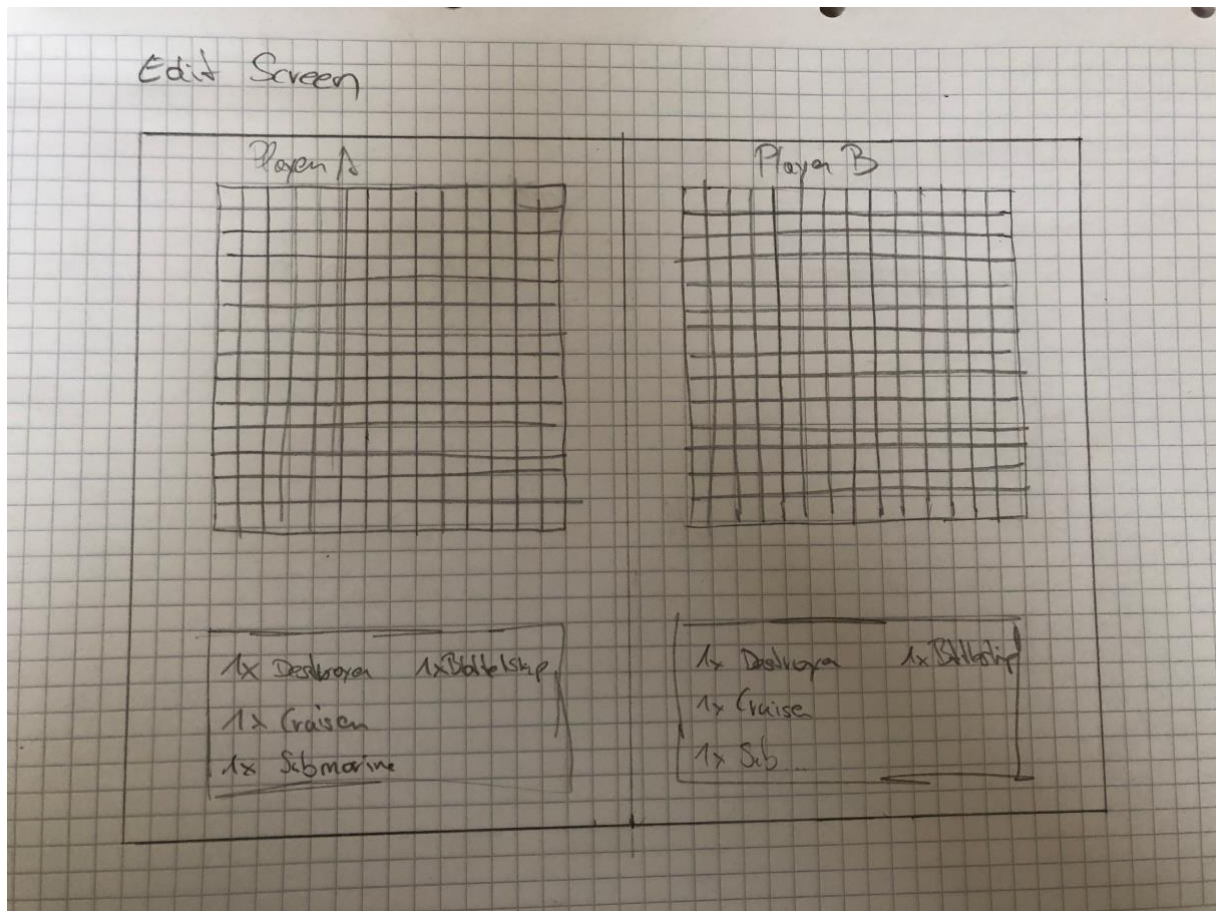
Edit-Screen:

Image 5: Edit-Screen

The Edit-Screen is split in half, one side for each player. On top of each side the users will be able to edit their name. Below the name there will be the battlefield for each user. At the bottom of the Edit-Screen there will be a field of all available battleships which can be placed on the battlefield.

2.2 WP2: Functional Implementation

This work package includes the functional implementation of the application and is due on January 23rd 2018.

The following features need to be implemented for our application to work properly:

- Implementation of basic code
Necessary code for a working battleship game
- Screen design and screen-redirection
- Storing previous highscores

2.3 WP3: Project Close

The close of the project is due on January 25th 2018 and includes:

- Clean-up of the source code.
- Finishing the projects documentation.
- Preparing a presentation of our application.
- Committing and pushing all necessary files to Github.
- Preparing for the presentation to sell out application.

3 Project Changes

This section is about changes that occurred during the project planning and functional implementation phase of the project.

3.1 Start Screen

The mock-up of the start-screen has evolved to the following design:



Image 6: Start-Screen (Final)

As planned the screen above will pop up when the game is started and will automatically direct you to the welcome-screen. Additionally, some funky battle music will be played from that point on.

3.2 Welcome Screen

The mock-up of the welcome screen has evolved to the following design:

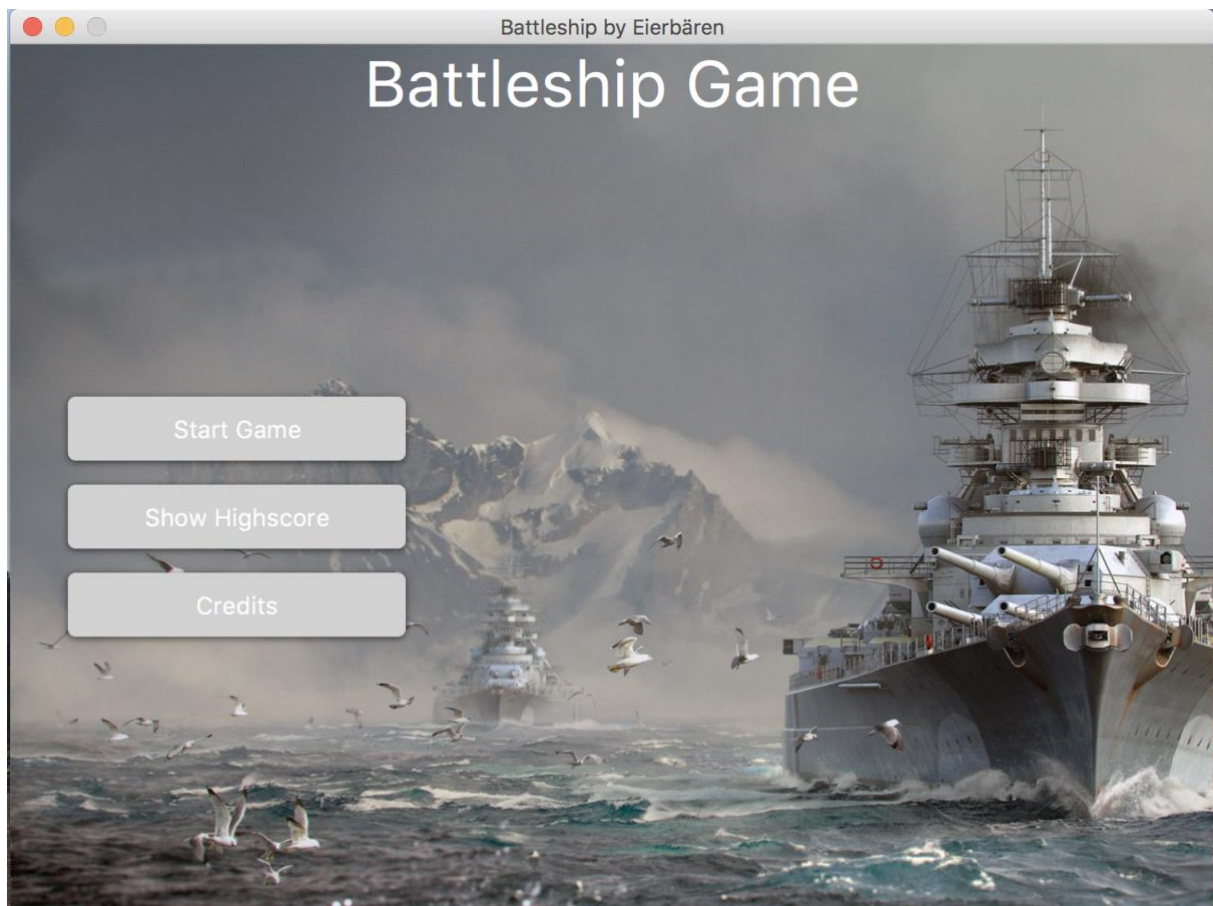


Image 7: Welcome-Screen (Final)

As planned the start-screen will automatically redirect you to the welcome screen. No changes have been performed to this screen.

3.3 Credit-Screen

The mock-up of the credit-screen has evolved to the following design:

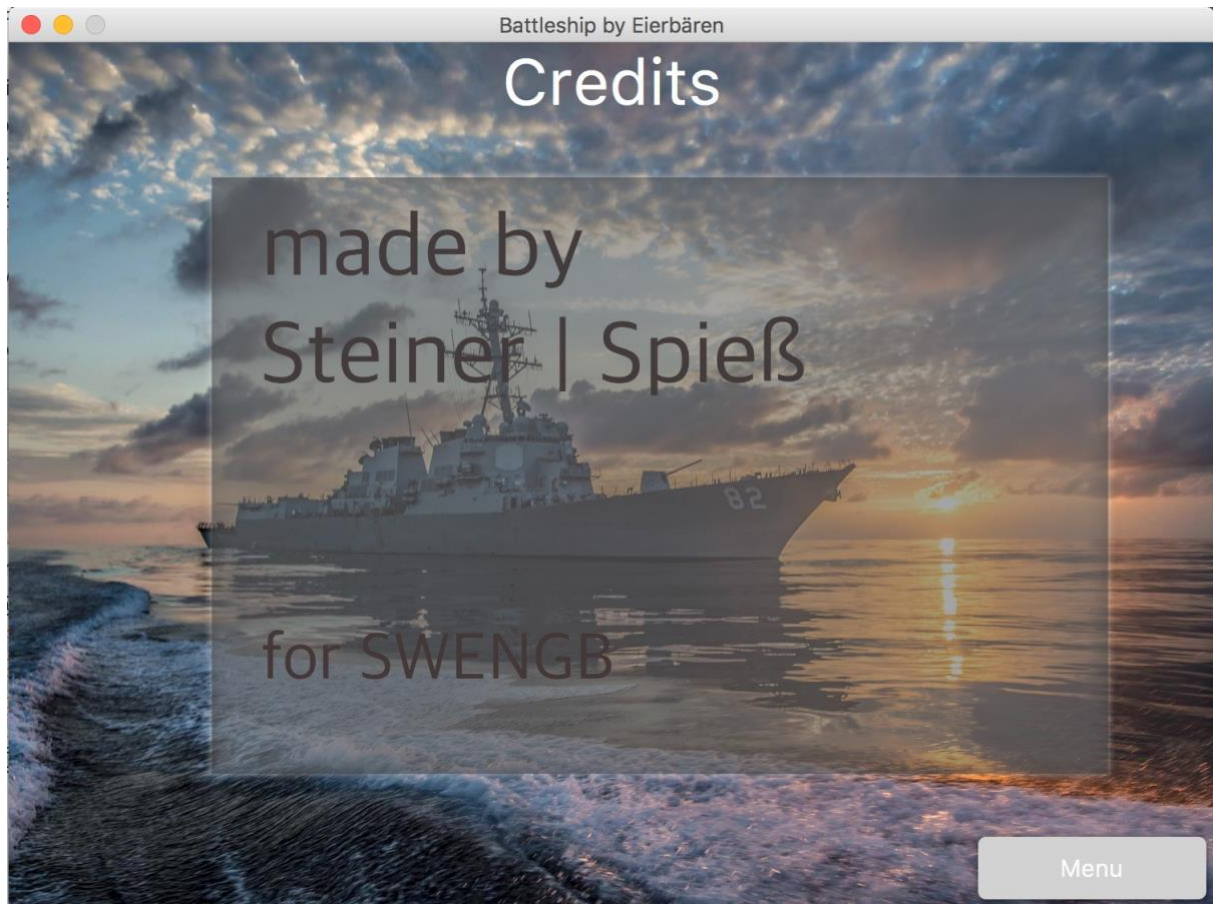


Image 8: Credit-Screen (Final)

This screen displays the credits of the developers. Additionally, a button labelled as "Menu" has been added to navigate back to the welcome screen.

3.4 Highscore-Screen

The mock-up of the highscore-screen has evolved to the following design:

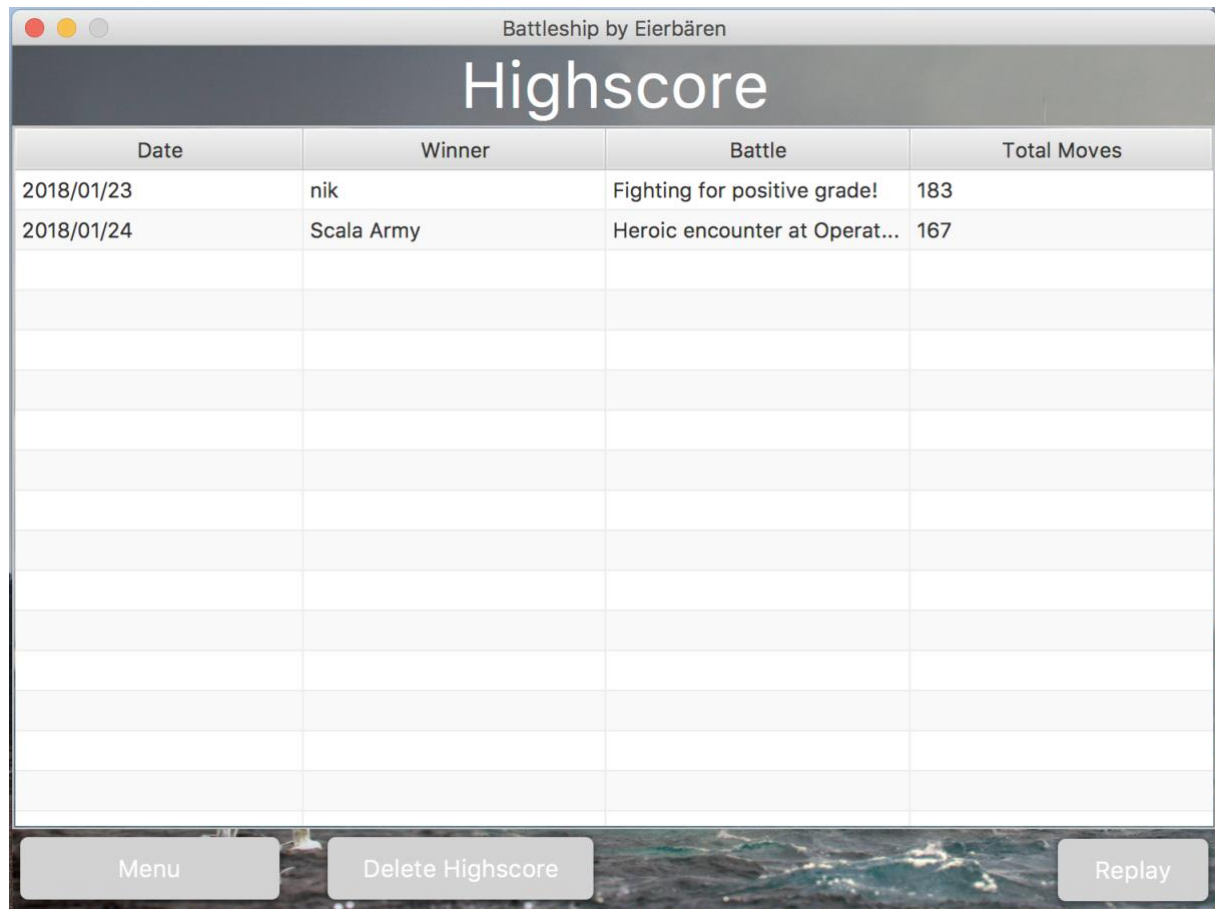


Image 9: Highscore-Screen (Final)

This screen will display the highscore list of previous played games. Additionally three buttons have been added to the bottom:

| Button | Function |
|------------------|---|
| Menu | This button will direct you back to the welcome screen. |
| Delete Highscore | This button allows to delete already stored highscores. |
| Replay | This button allows to replay previous played games. |

Table 8: Highscore-Screen Buttons

Besides the changes in design, the format of each entry has been changed to:

Date | Winner | Battle | Total Moves

3.5 Game Screen

An additional game-screen has been implemented with the following design:

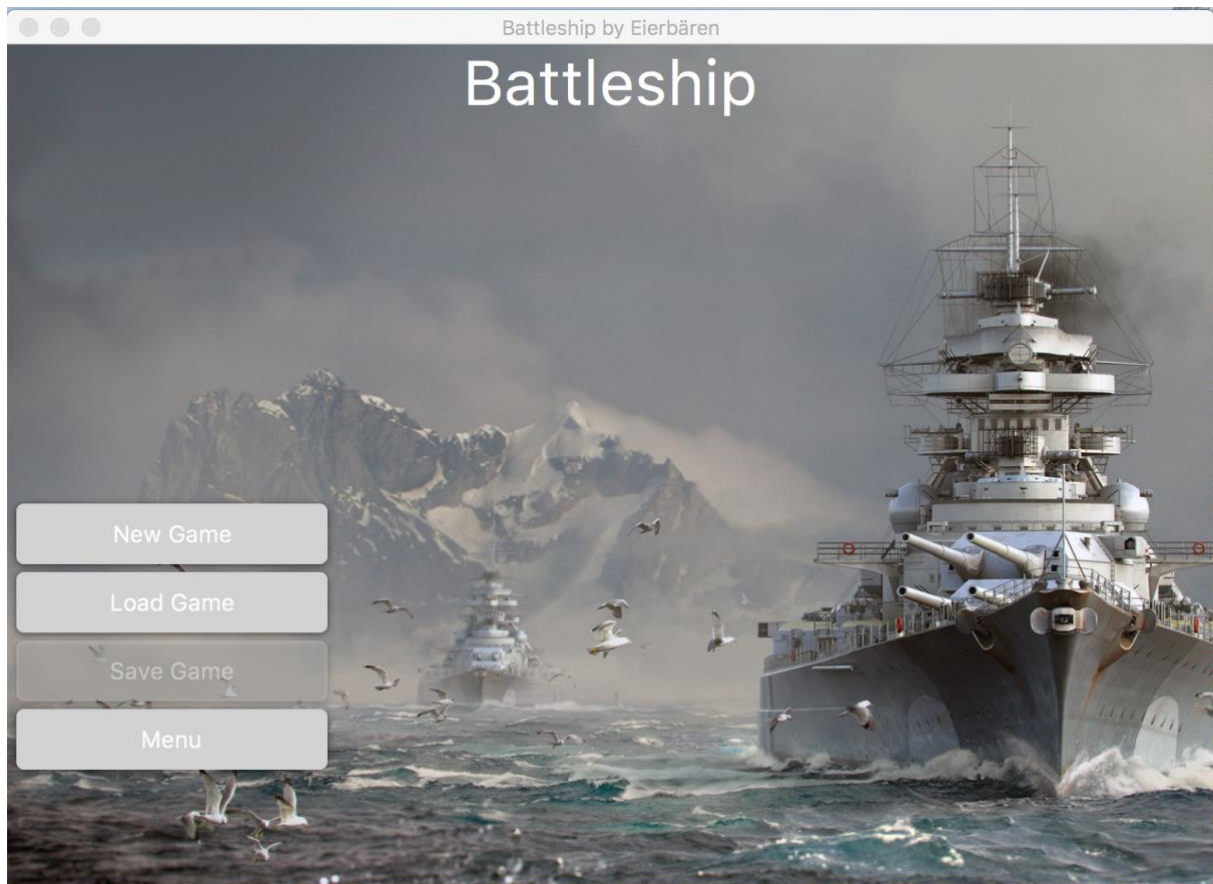


Image 10: Game-Screen (Final)

This screen will be displayed after the “New Game” button is clicked on the welcome-screen. The following options are available:

| Button | Function |
|-----------|--|
| New Game | This button will start a new game and redirect to the edit-screen. |
| Load Game | This button allows to load a previous saved game. |
| Menu | This button will redirect to the welcome-screen. |

Table 9: Game-Screen Buttons

3.6 Edit Screen

The mock-up of the edit-screen has evolved to the following design:

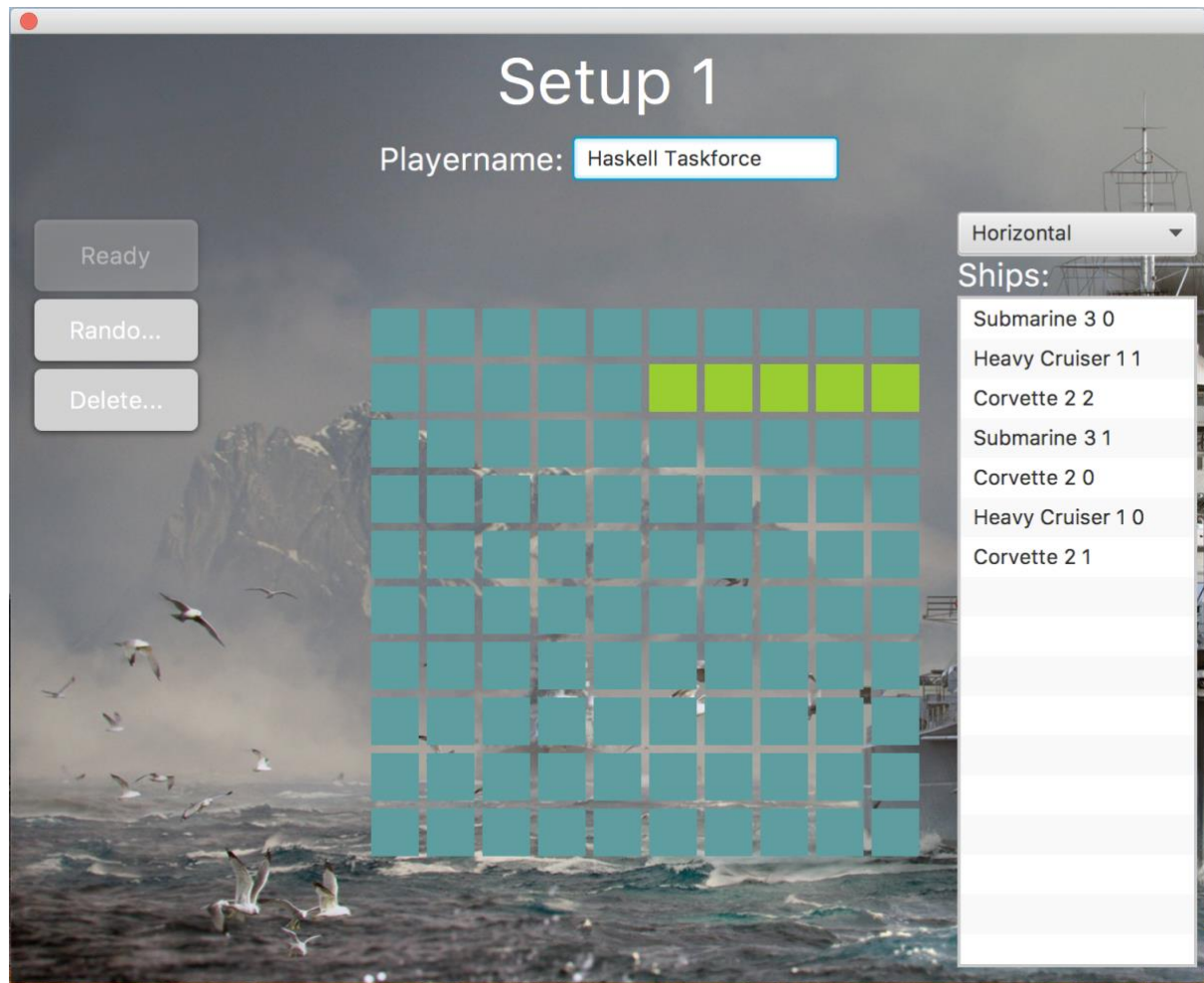


Image 11: Edit-Screen (Final)

This screen will be displayed when you click on “New Game” on the game-screen. On top of the screen the players name can be edited. A list of available battleships is displayed on the right-hand side with the option of changing the direction of the ships. The battleships can be placed on the battlefield which is located in the middle of the screen by first selecting a battleship of the list and then clicking on the position of the battlefield. On the left-hand side, there are several options:

| Button | Function |
|--------------|---|
| Ready | As soon as the first player placed his fleet he has to click on ready to let the second player choose his name and fleet. When both players placed their fleet and clicked on ready the actual battle starts. |
| Random Fleet | Let the game generate a random fleet. |
| Delete Fleet | Delete the fleet and clear the battlefield. |

Table 10: Edit-Screen Buttons

3.7 Battle-Screen

An additional game-screen has been implemented with the following design:

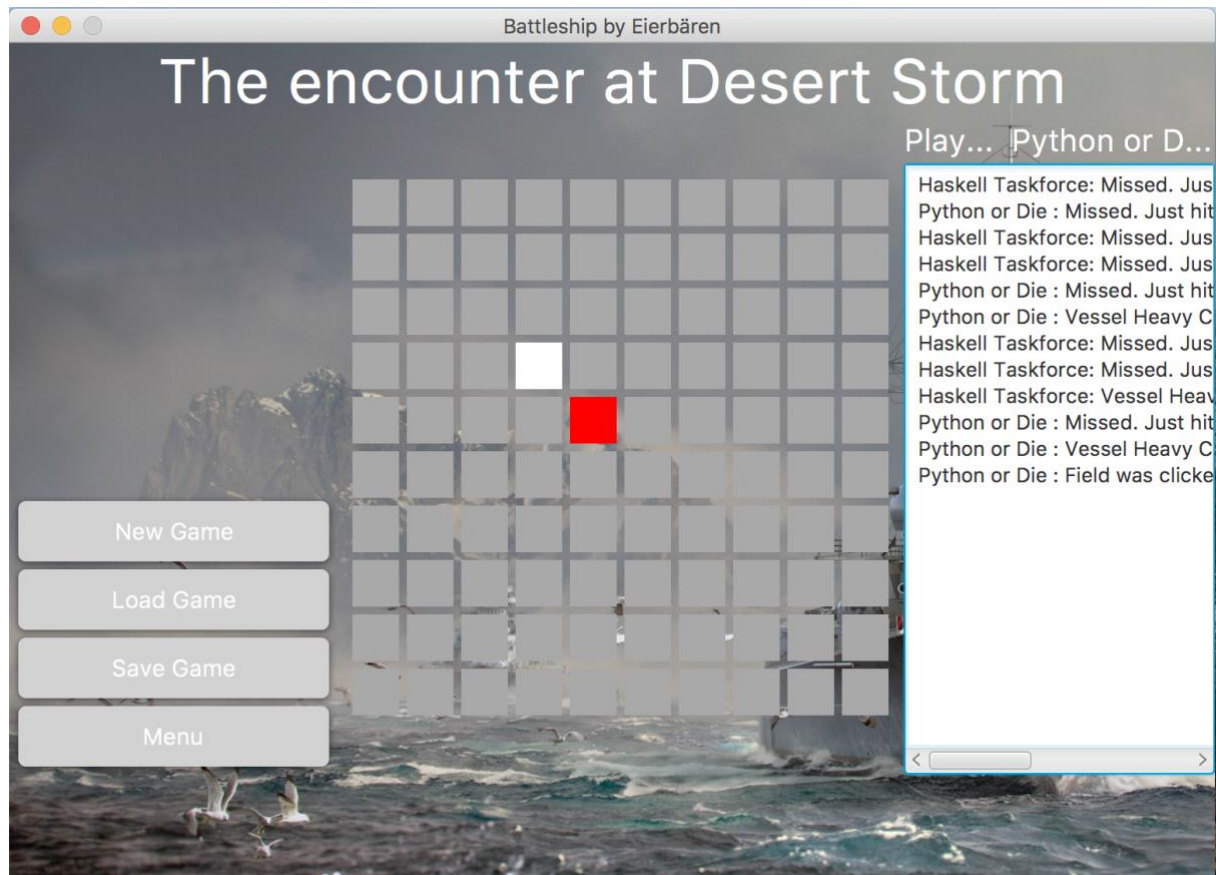


Image 12: Battle-Screen (Final)

On this screen, the actual battle happens. A random generated name for the battle is on top. On the right-hand side a log displays messages if you hit a ship or water or if a ship has been destroyed. In the middle of the screen is the actual battlefield and on the left hand-side there is a menu with the following options:

| Button | Function |
|-----------|---------------------------------|
| New Game | Start a new game. |
| Load Game | Load a previous saved game. |
| Save Game | Save the current game state. |
| Menu | Get back to the welcome-screen. |

Table 11: Battle-Screen Buttons

4 Project Manual

The manual for the Battleship Game is in a separate file which you can find in the Git repository. You can find the file [here](#).

5 Lessons Learned

With every project you participate in, you learn some lessons because no project finishes without any problems. The lessons we learned in this project are listed below:

- Plan the project properly
 - o Start early
- Use agile project management methods
 - o Use e.g. a Kanban board to have an overview about all tasks
- Use the benefits of IntelliJ like
 - o Code completion
 - o Code cleanup
 - o Pattern matching
- Save FXML files when editing them with Scene Builder
 - o To prevent changes to be lost

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