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Project Team

Our project team consists of four students. Stefan Krasser is our project leader and will plan the project together with the team. He is responsible for the communication between the lecturer and the team. All four team members are involved in the planning and review of the project. We decided to split up our project in the following three main parts: planning, implementation and review. These phases are used for the whole project and for each main task (e.g. EditMode) which must be coordinated by one responsible person.

Main tasks and responsible persons:

1. Planning (Documentation)   →   Stefan Krasser

2. startup/welcome Screen/GUI   →   Miriam Grainer

3. Edit Mode   →   Christoph Mali

4. Game Mode   →   Stefan Krasser

5. Highscore   →   Thomas Ortner

To coordinate and plan upcoming tasks we use the online tool Trello. Trello is connected to our communication messenger Slack. We try to focus on much communication that's why we take use of 3 meetings per week.

Tasks and Time Estimation

| Title	Subtask	Description	Due	Time Estimation
Planning				=15
Planning	project team	a description of your project team. it should comprise an explanation of how you partitioned your work. it should answer questions like: Who fulfills which role? Who implements which component? How is the work partitioned? What methodology is used?	11.01.2018	3
Planning	Time estimation	You have to provide a time estimation which states how long it will take to complete your project. You have to plan your project and give descriptions about the work packages in question.	11.01.2018	1
Planning	Mockups erstellen für Forms	you have to provide a chapter about your paper mockups of your application. This is part of the first deadline, so be sure you publish a report containing a mockup chapter timely.	11.01.2018	4

Planning	Project cost estimation	think about the project as being a software product, how much money would you charge? why? give an explanation about your cost calculation.	11.01.2018	2
Planning	Manual	You have to write a manual for your application. This manual should comprise all steps necessary to get and start the application. It should contain a description on how to use your software product, along with screenshots such that it is easy to understand your application.	23.01.2018	3
Planning	time expenditure	your project report has to contain a time expenditure document. it should clearly list all activities along with date, student id and description.	25.01.2018	2
Startup / Splash Screen		The screen displayed before the welcome screen (image)		=2
Welcome Screen		After the splash screen the real application site appears. There the user can decide between a "new Game" a highscore list of all played games and a credits page.		=2
GUI NewGame		This form is displayed a click on the "New Game" button. In this form the generated game name is displayed and the players have to enter their name. With a click on the "Create Game" button the application goes into "Edit Mode".		=2
Edit Mode		This mode is displayed after a game has been created and the players have been entered. At first player A sets the fleet by selecting the ships from a list and afterwards player B. If both players have set their fleet the game can be started by clicking "Start Game". The application then goes into "Game Mode".		=16
Edit Mode (12)	GUI EditMode			4
Edit Mode (12)	Start Game			2
Edit Mode (12)	Place Ship			8
Edit Mode (12)	List with ships (available)	check if list empty (all ships are placed)		2
Game Mode		This Phase of the game displays the real game. both players have 2 fields displayed (the own field and the opponents field). The players play after each other and click on the opponents field to hit a vessel.		=20
Game Mode (18)	GUI GameMode			3
Game Mode (18)	ProtoMessage Logfile			2
Game Mode (18)	ProtoMessage GameState			2
Game Mode (18)	Game state	program logic		10
Game Mode (18)	Sync game log			3

High Score		there a list of all games is displayed with the number of shots, the winner of the game, the battle name, and the date and a replay button		=18
Highscore (12)	GUI Highscore			2
Highscore (12)	ProtoMessage Highscore			2
Highscore (12)	Implement number of moves			2
Highscore (12)	Replay			10
Highscore (12)	GameMode Form Replay (with Slider)			2
Tasks creation		like mentioned in 'time estimation', you have to identify work packages and describe them, along with the estimated time to complete those work packages.		=4
			sum:	=79

Project Cost Calculation

Planned hours	79		
	à 20 € per person (4 persons)		
Costs	€ 6 320,00		
Selling price	15 € per unit	=6320/15	421,33 units
Break-even-Point	422 units		
Revenue	€ 14 000,00	=14000/15	933,33 units
Revenue at	934 units		
Profit	€ 7 680,00		
Profit per person	€ 1 920,00		

Mock Ups
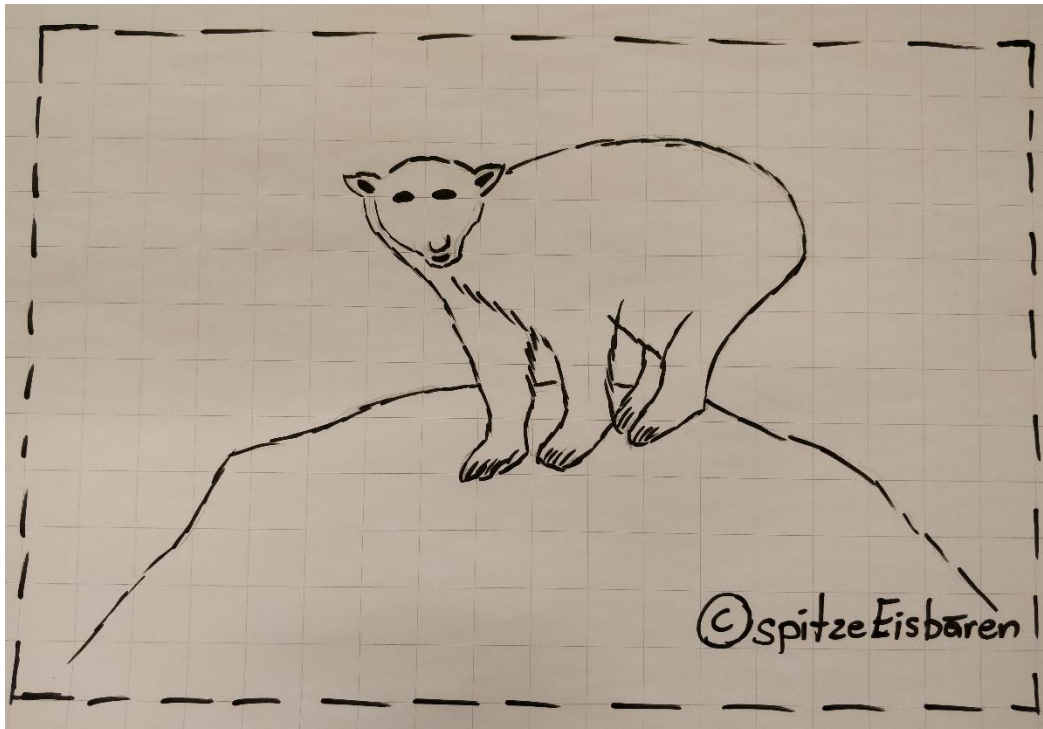
The **splash screen** is shown when the game is started and disappears after a few seconds.
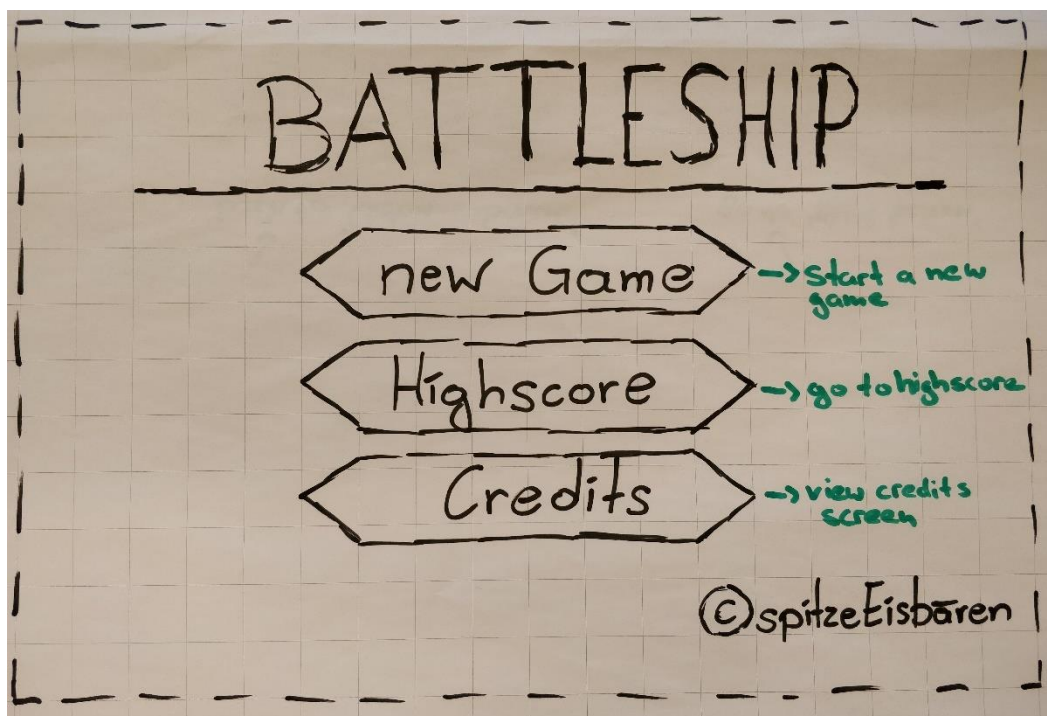
This is the **welcome screen**. From this screen you can start a new game, go to the highscores and view the credits.

The **new game screen** makes it possible to enter the names of both players, create a new random game name, go to the edit screen a go back to the welcome screen.

In the **edit screen** it is possible to place ships on the battlefield by selecting the desired ship from a list and entering the starting positions and choosing horizontal or vertical. It is also possible to delete a ship by selecting it in the list and clicking the delete button.
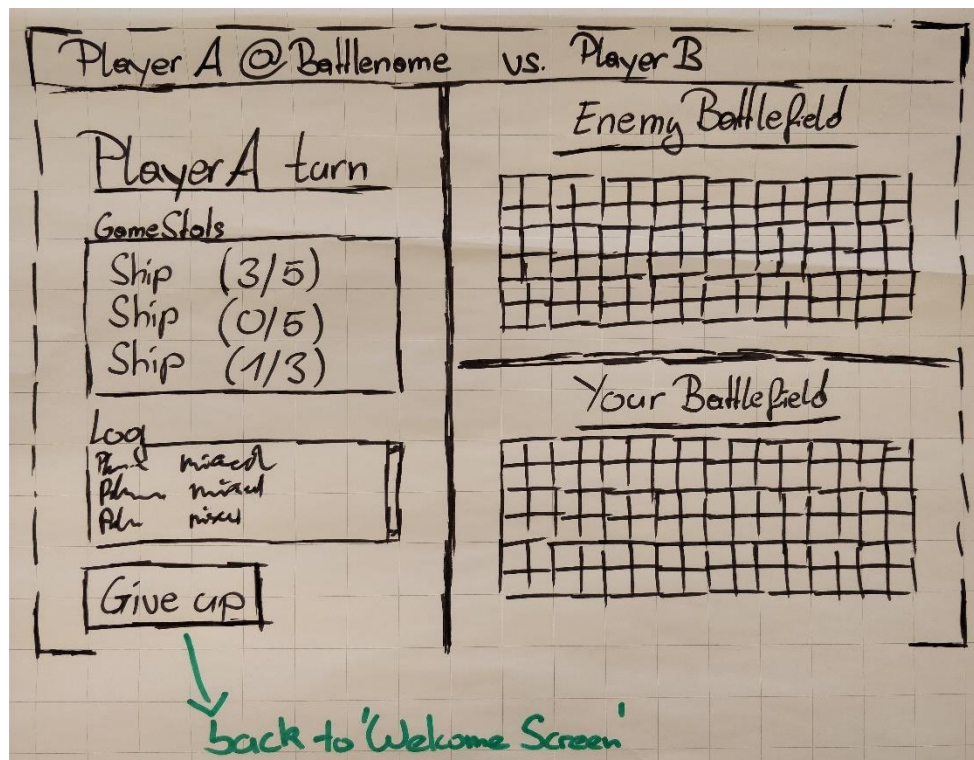
The actual game takes place in the **game screen**. The player whose turn it is has to click onto the enemy battlefield. The own battlefield is only meant to show information about the players own fleet. The game stats on the right show which ships are alive and how often they have been hit. By clicking the give up button the welcome screen is opened and the other player wins the game.
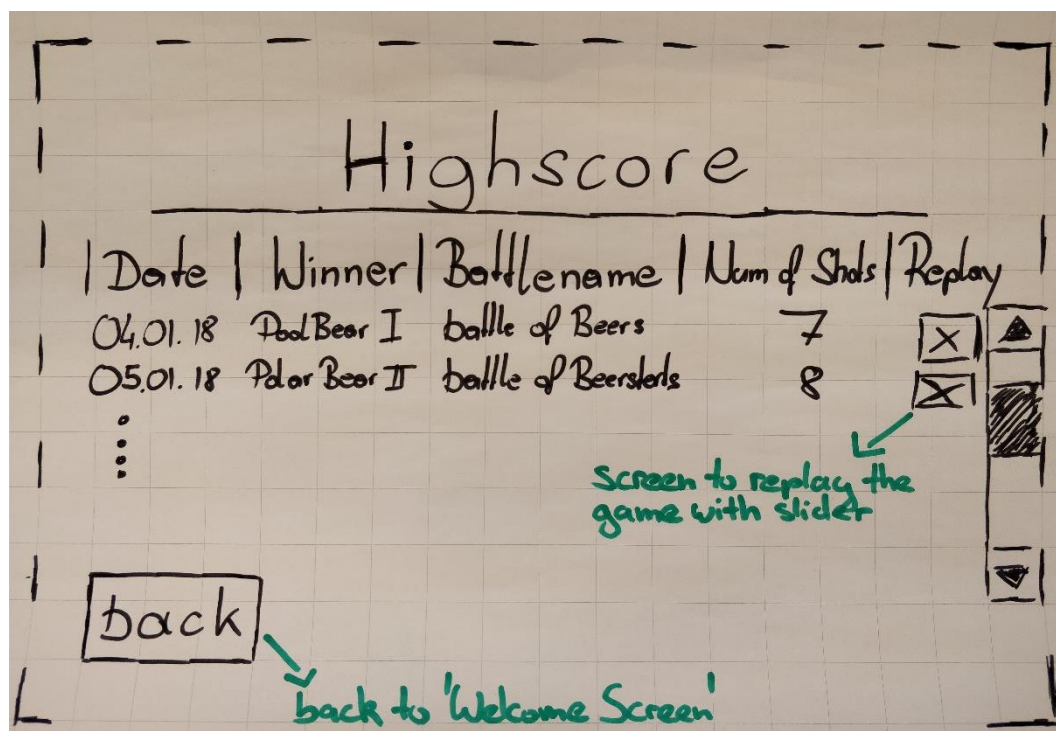
The **highscore screen** shows all the games ordered by the number of shots. By clicking the replay button the game screen opens and the game can be viewed by using the slider.
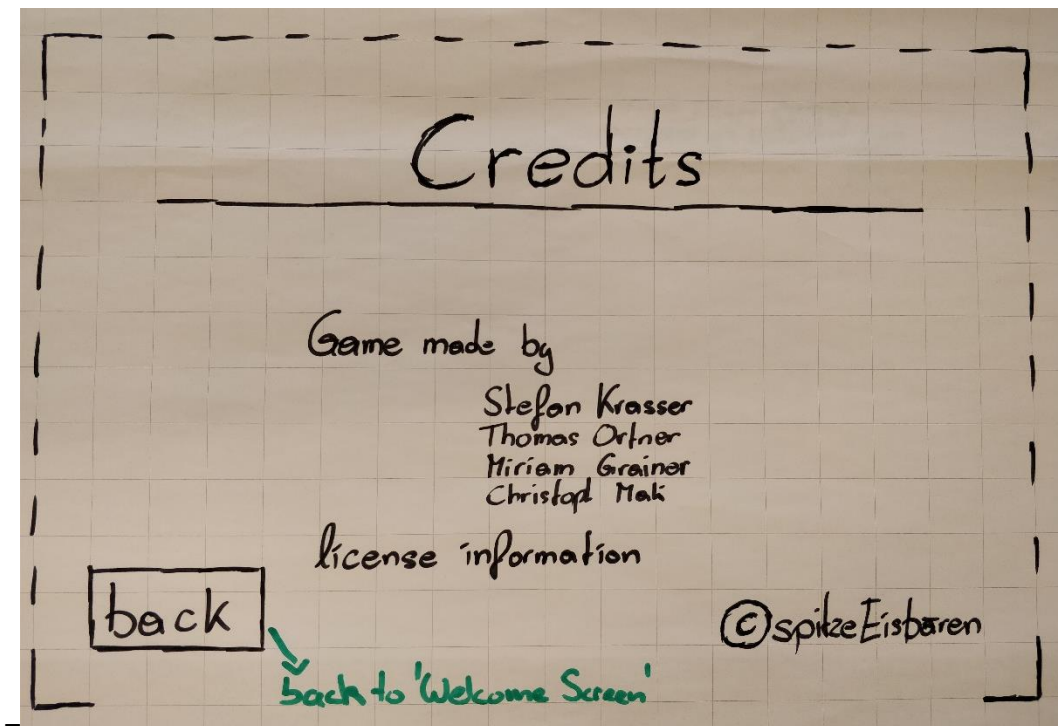
The **credits screen** shows information about the developers and the license.

Manual

Rules

For this project, we concentrated on making a well functional battleship game and here are the basic rules of the game.

Battleship is a game for two players who try to guess the location of the ships each player hides on his side of the battlefield that cannot be seen by his opponent. Players take turns clicking a row and column on the other player's grid in an attempt to name a square that contains an opponent's ship.

At the start of the game, each player receives a board where he can place five ships horizontal or vertical but not diagonal. The opponent gets the same grid pane where he can place his own ships. The goal of the game is to sink all of the opponent's ships by correctly guessing their location.

Each ship must be placed across grid spaces, and they cannot hang off the grid. Ships can touch each other, but they cannot be on the same space. You cannot change the position of the ships after the game begins.

Players take turns firing shots (by clicking the squares) to attack enemy ships.

On your turn, click a square on your target grid. The program checks that space on the opponent's ocean grid and responds, "Just hit the water" if there is no ship there or "hit a vessel" if you guessed a space that contained a ship.

The program marks each of your shots on your target grid different colours for your hits and misses.

When one of your ships gets hit the colour the that square will change. The ships have different sizes and have different numbers of squares (length). When every square of one of your ships is hit the ship will "sink" -> it is destroyed and the program calls that out to your opponent.

The first player to sink all opposing ships wins the game.

Functionality

In this chapter we are going to tell you how the battleship game especially our implementation works.
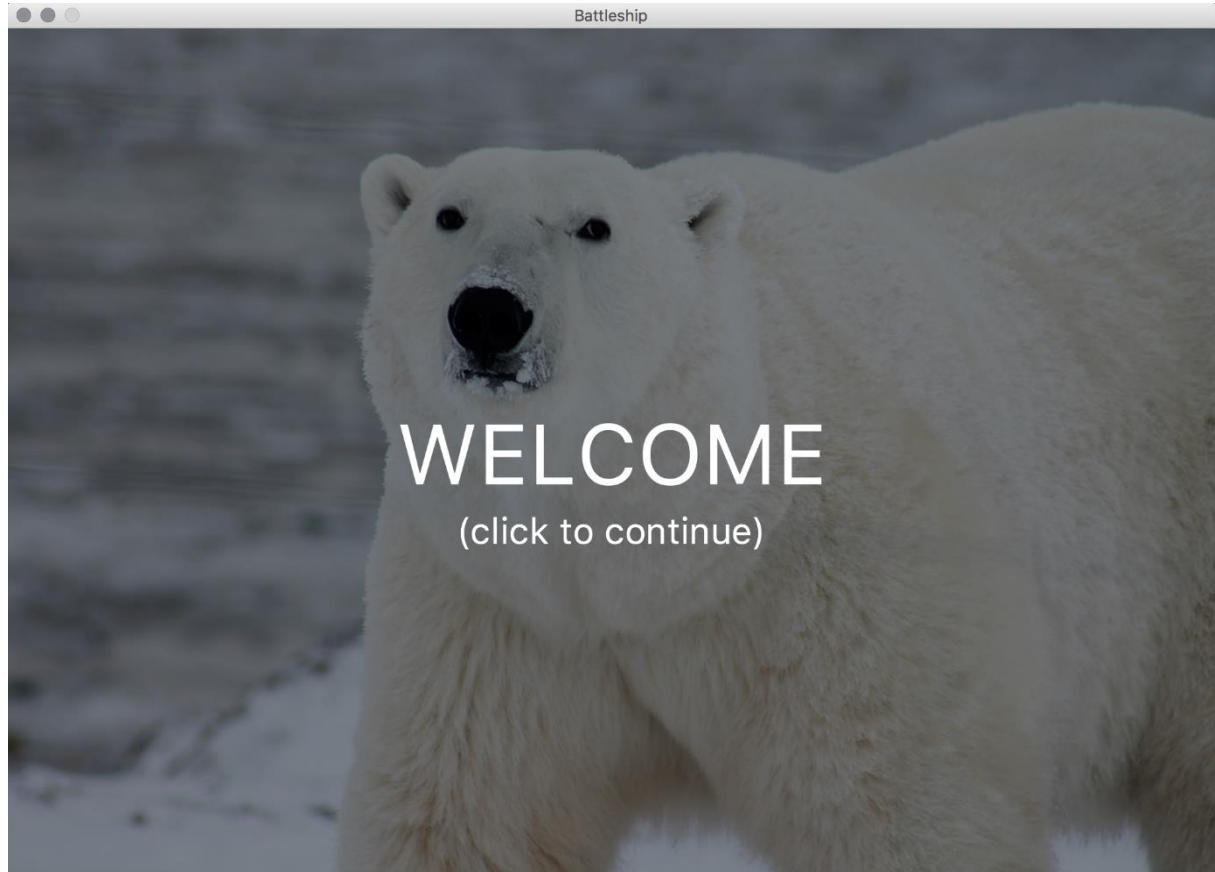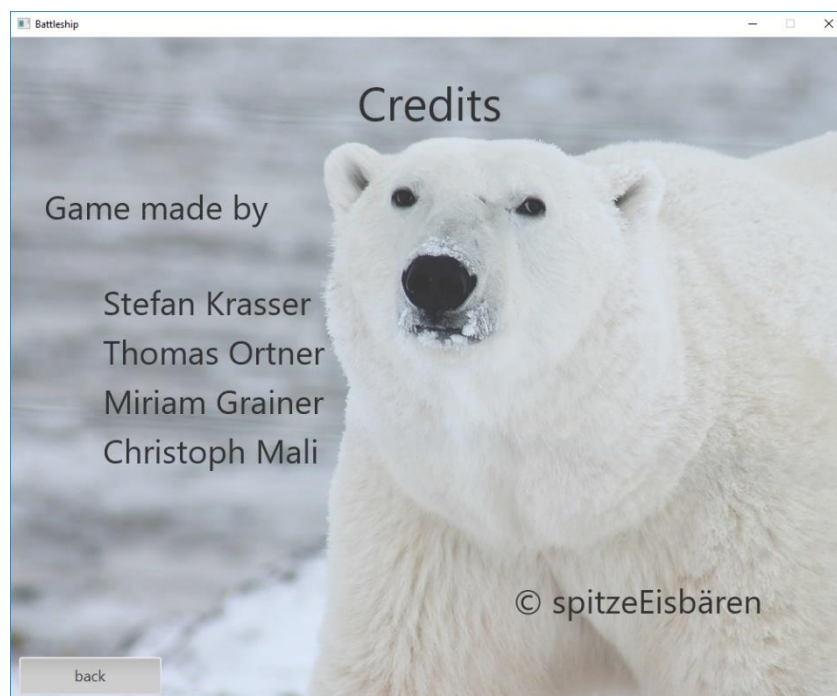

This is our splash screen, which means that our game is starting. After the splash screen, you find yourself on the welcome screen.

Functionality

Now you see four buttons: "New Game", "Load/ Join Game", "High score" and the "Credits button".
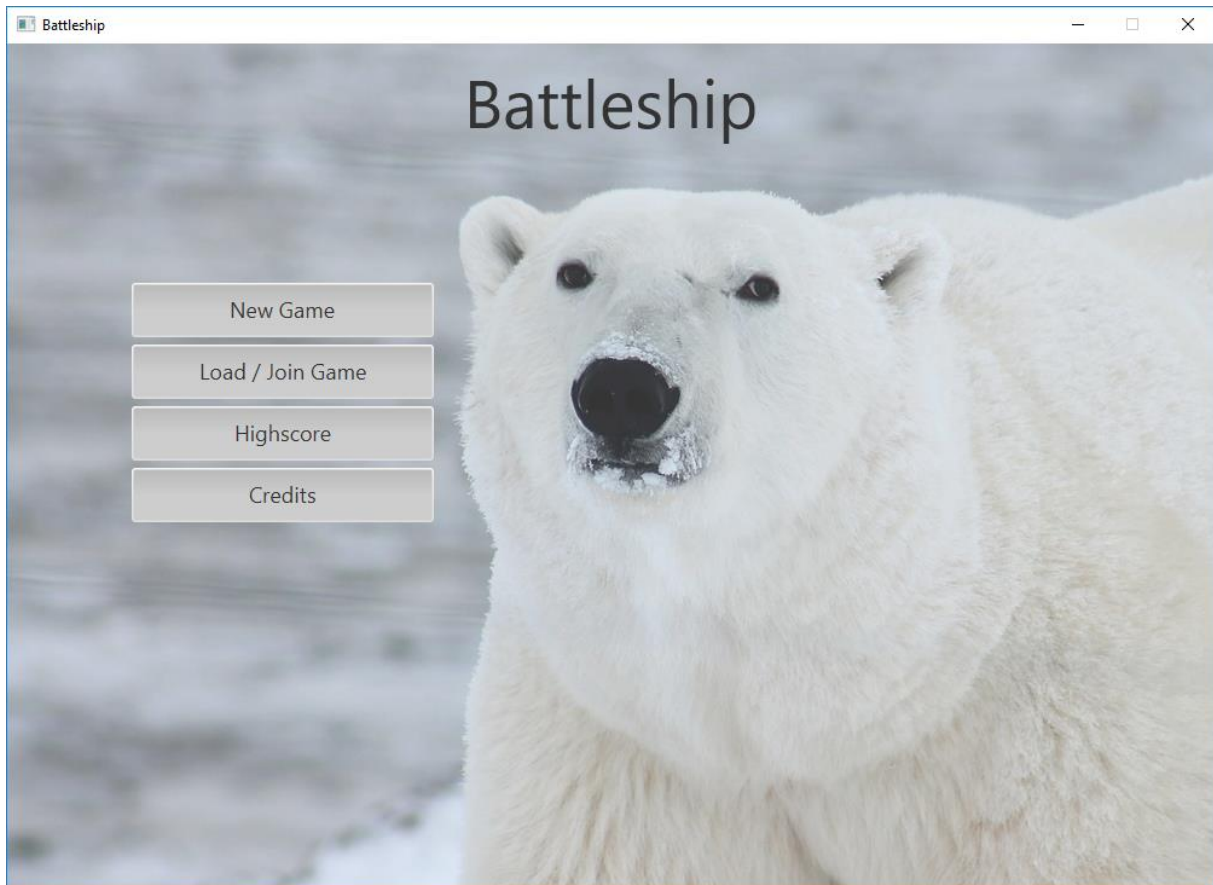
If you click on the "credits" button, you receive all the information about who created the game.

If you click on the "high score" button you see the lowest amount of tries one needed to sink all of the enemy's ships, and the one that needed the second most tries and the third most and so on. It shows all the games that have been played in order.
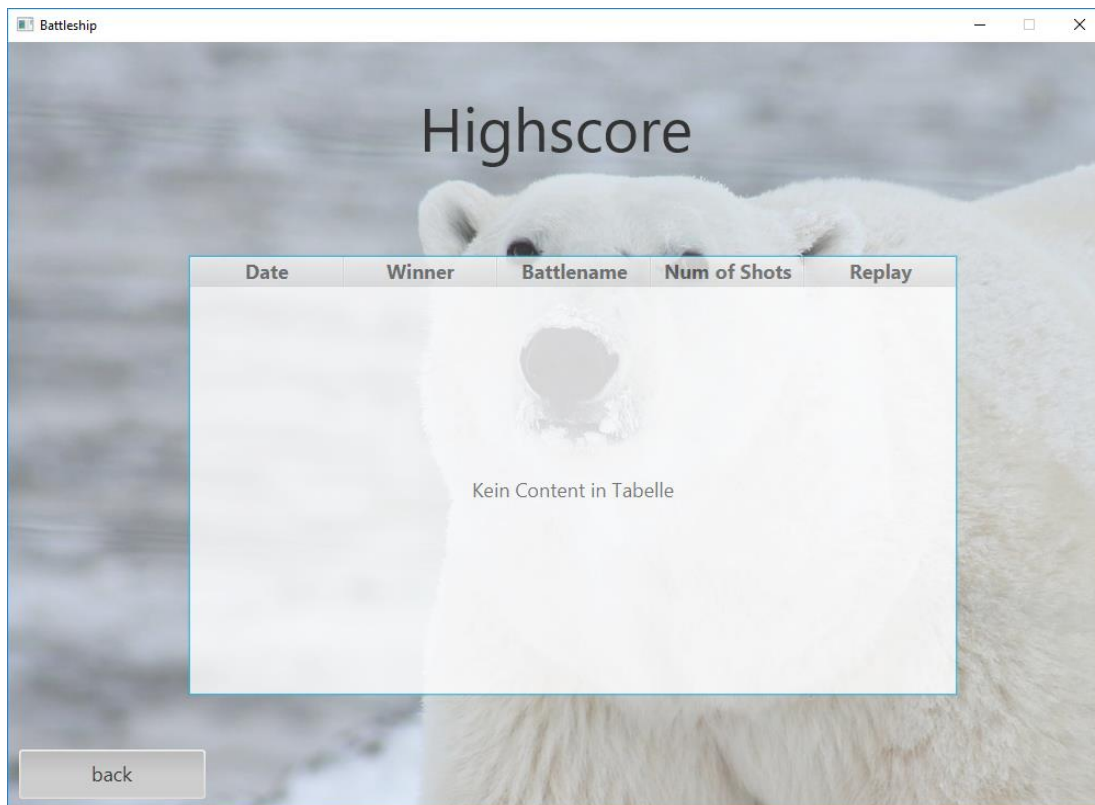
The "New Game" button functions as the start button of a normal game. You then move forward to the New Game Screen.

You can choose a random battle name and the two players that want to play and then press "Next". You will move forward to the Edit screen.

The "Load/ Join Game" button functions as the connector to a game that has been created. So if you want to play you need one person pressing creating a New Game and after filling in the names one person that needs to press "Load/ Join Game". Then both players will be in the Edit screen.
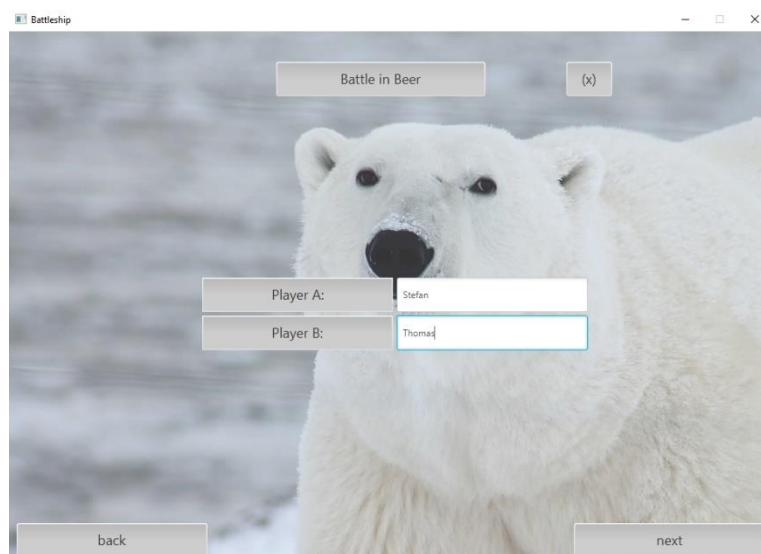
In the Edit Screen each player can choose the positions of his/her own battleships on the battlefield. First you choose which ship (size) you want to place, then if you want to place it horizontal or vertical, then the position(x and y position) and finally you need to click place ship. If you want to delete a ship you have already placed you need to click delete Ship. When both players are ready to play they click start Game and then you move on to the Game Mode Screen.
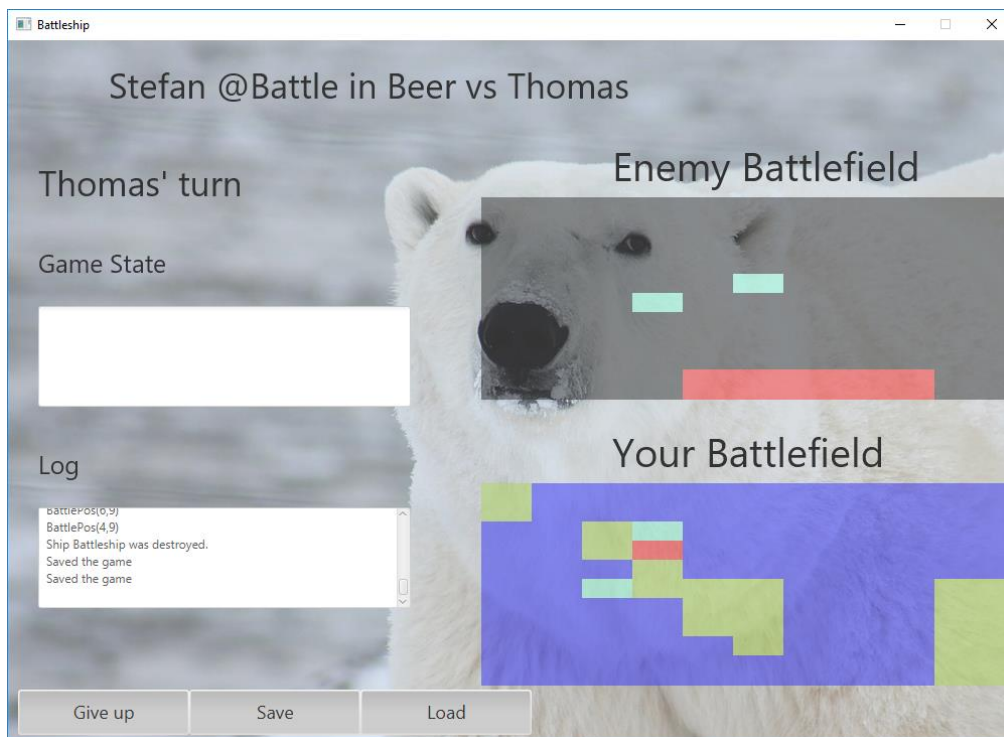
On your turn, you click onto the Enemy Battlefield Zone. The program will check if you hit a vessel or not and colour it either blue if you missed or red if you hit a ship. You can click until you missed once and then you need to click save and load and the opponent turn it is. If you want to end the game earlier, you need to click give up. The game will end when all the vessels have been hit and you will return to the menu and you will see your score in the high score menu.

A good Cause

Our biggest feature is the "Save an Ice Bear initiative". For every game that is bought all of the costs will be donated to save ice bears. So if you buy our game you can do something very special.

Time Expenditure