

Requirements

Single statement of need: A simple boat game for a single user, with the objective to capture colleges in order to win, aimed at showcasing the course to prospective students.

Initially as a group we read the product brief, and discussed our thoughts and opinions on what they were. We made sure everyone had the same idea of what they meant and then started discussing ideas around how we should approach the project. To ensure we could meet all the customers requirements, we booked a meeting with our customer to discuss what they wanted the app to be like.

In order to prepare for the meeting we decided to prepare a list of questions that would allow us to meet all different aspects of potential requirements. Using Mural, we created a shared idea board with 4 different types of questions to look at: Who (e.g. Who is the ideal target market), What (e.g. What should the final objective be?), When (e.g. When will you be able to capture a college?) and How (e.g. How long should the game last?). Inside these 4 components, we discussed and created tiles which we then simplified into a list of questions to ask within the meeting with our customer.

We have presented our requirements in 3 tables: User requirements, Functional Requirements and Non-Functional Requirements. The functional requirements show what the system should do and the non-functional requirements show the qualities a system should have. In the user requirements there is the Requirement, the ID (determined by User Requirements shortened to USR), Importance (the importance of each requirement represented either High, Medium or Low), Risks (linked to the risks table, the risk ID is of that in Risk1.pdf), and environmental assumptions. The functional and non-functional requirement tables contain the Requirement, the ID (determined by either functional (FR) or non-functional (NF)), the user requirement ID (the ID that relates to the user requirement its derived from), the priority of the task (represented by either High, Medium or Low) and the Risk ID (the ID from the risk table, that the requirement links to).

How				
How will the player engage in contact with other ships or colleges?	How do you want us to represent bad weather?	How long should the game be/ easy to complete/ win?	Should there be a finishing point/ how long should it last on average? Play on forever?	Should it get harder as it goes along?
How would you like the capture to be represented?	How many objectives?	If set amount - what?	How do you want the AI for the boats to work?	How should players interact with obstacles?
Should some colleges be more friendly than others? get more points for capturing certain ones?	Bribing to be allies? with gold?	How do you want it to look?	Neverending map?	How should the game be different each time its played?
Will a player be able to 'lose' or 'fail' the game? How would that come about or be represented?	At what point will the player lose the game? When there is a majority of captures?	How long should the game last? Or forever?		

Constraint Requirements :

Requirements	ID	Notes
The system must run on a minimum of Linux and Windows, preferably platform independent.	CR1	This will be achieved through the use of LibGDX.
The system must scale to fit on any size screen.	CR2	Customer intends to execute the game on a number of different machines with different screens.

User Requirements :

H = High Priority

M = Medium Priority

L = Low Priority

Requirements	ID	Importance	Risks	Notes / Environmental Assumptions
The game must be suitable for an audience of potential students and families visiting the department.	USR3/16	M	R9	N/A
The game should be intuitive and easy to learn.	USR15	H	R9, R6	A wide range of different people with differing levels of prior knowledge will be playing the game on busy open days.
Should last 5-10 minutes	USR4	H	R9	There may be many people waiting to play, so it's important it's implemented
Challenging but easily winnable	USR5	M	R9	Don't want to frustrate users in a busy crowd
Goal is to 'capture' or 'destroy' other colleges	USR7	M	R9, R3	Assessment 1 Requirement
Should be an option of controls the player wants to use	USR9	H	R9, R3, R7	We are using conventional controls - should be easy to pick up
The game must contain collision mechanics.	USR10	M	R9, R3	N/A
Should run on varying screen sizes	USR11	H	R9, R3	Needed for demonstrations
2D Game	USR12	M	R9, R3	N/A
Experience points to increase capability	USR13	M	R9	N/A

Clear graphics	USR14	M	R9, R6, R8	We can't make assumptions on the ability of the players
College Combat	USR19/17	H	R9	Assessment 1 Requirement
Users must have the ability to save their game.	USR20	H		Assessment 2 Requirement
User must be able to adjust difficulty.	USR21	H		Assessment 2 Requirement
There must be powerups available within the game.	USR22	H		Assessment 2 Requirement
Combat with enemy ships.	USR23	H		Assessment 2 Requirement
The user should encounter obstacles or bad weather.	USR24	H		Assessment 2 Requirement
There must be ways to spend plunder	USR25	H		Assessment 2 Requirement

Functional Requirements:

Description	ID	User Requirement ID	Priority	Risk ID
The game should have a start page	FR01	USR15	M	R6
The user should be able to control the boat	FR02	USR2	H	R7
There should be numerous colleges that will need to be captured, minimum of 3.	FR04	USR7	M	R9
The colleges should shoot at the user's boat	FR05	USR19	M	R9
The user should be able to shoot from their boat	FR07	USR7	H	R7
There should be an option for controls that the user wants to use	FR08	USR9	L	R7
The game should fit on any sized screen	FR09	USR11	H	R9
The more the player moves, the more experience points they should get, increasing game capabilities	FR10	USR13	L	R7
To win the game users need to capture all the colleges	FR12	USR7	H	R9

There should be sound effects	FR13	USR8	L	R6
The player should collide with enemy boats.	FR14	USR10	H	
There must be collision detection on cannonballs to know when a college or play is hit.	FR15	USR10	H	
If a boat/college hits a user the user should take health damage.	FR06	USR7	H	R9
If a user hits a boat/college the boat/college should take damage.	FR016		H	
There should be a simple AI for enemies.	FR17		H	

Non-functional Requirements :

Description	ID	User Requirement ID	Priority	Risk ID	Fit Criteria
The game should be family friendly and exclude violence/gore.	NF01/03	USR3	H	R9	The game will contain no violent graphics or animations.
Intended for visiting potential students and families.	NF02	USR3	H	R9	The game will contain no violent animation or graphics.
Should be accessible for people who have colour blindness	NF04	USR3	L	R6	The game will contain colour blind options in the menu settings.
The controls for the game should be intuitive and easy to use.	NF05	USR15	M	R6	At the beginning of the game a prompt will appear telling the users the movement keys and shooting controls. It will also follow common control standards such as WASD.