2. Requirements

Team 5 | Team Pending

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A. Introduction

Acquisition

For this assessment we did not require a meeting with the stakeholder as our experience from assessment 1 allowed us to successfully elicit requirements from the brief.

Formalisation

- Each point from the brief was broken down into multiple requirements and the description of each was shortened and refined to make them more descriptive.
- As well as descriptive attributes, each requirement also included information for both Relevant Risks and Severity. These provided a framework in which we as a team can work around, while also providing goals we can work towards.
- The links to the risk assessment allows cross referencing and ensures that this documentation is actively considered during development, while also meaning other team members can easily see active and current issues. The severity inclusion allows us to quickly identify key points to work on in the implementation and gives focus to the team.

Research

- Our research for the presentation of the requirements section consisted of Sommerville's 'Software Engineering'[1]. He states that the user requirements should 'describe the functional and non-functional requirements so that they are understandable by system users who don't have detailed technical knowledge.'
- This should be free from technical terminology, but diagrams and tables can be used to assist complex requirements.
- We believe the best method to format our requirements would be in the form of multiple tables, each representing the non-functional and functional requirements as well as their environmental assumptions. We decided on this approach as it's easier to understand than a series of paragraphs.

B. Requirements

Non-Functional				
ID	**Description**	**Requirement Type**	**Priority**	**Env. ID**
NF_Audience	Target the demographic of the open day.	User	Medium	E_Demographic
NF_Timing	Game should be 5-10m long	System	Medium	E_OpenDay
NF_Difficulty	Difficulty shouldn't be too challenging	User	Medium	E_OpenDay
NF_Players	Single player	User	High	N/A
NF_Map	Map is user friendly / easy to navigate	User	Medium	E_OpenDay
NF_Colour	Accommodate for colour-blindness	User	High	E_Disability
NF_Seizure	Ensure seizure-friendliness	User	Med	E_Disability
NF_scale	Graphics need to support between a 13" and 27" monitor whilst looking good proportionally to resolution	User	High	E_System
NF_Reliable	Game needs to run reliably, accounting for problems such as memory leak.	User	High	E_System
NF_Win	Game needs to be able to finish and restart with no transition screen	System	High	E_OpenDay
NF_Help	User needs to learn controls in such a way that doesn't open a separate menu	User	High	E_Demographic E_OpenDay
NF_Stats	Can see stats of the ship on-screen	User	Low	E_OpenDay

Functional			
ID	**Description**	**Requirement Type**	**Priority**
F_Restart_Capable	Restart the game to the start on "tab"	User	High
F_Restart_Consisitent	Reset state and ensure no memory leak on restart or close	System	High

F_WASD	“Wasd” moves the ship in the 4 cardinal directions	User	High
F_WASD_Diagonal	Combining “wasd” moves in diagonal directions	User	High
F_Rewards	When a college is destroyed, the user should be rewarded gold / XP	System	Med
F_XP	As you play the game, you gain XP over time	System	High
F_Collision	The ship cannot move into walls	User	High
F_College_Attack	Colleges attack the ship when nearby	System	High
F_Player_Death	Player ship dies when their health hits 0	System	High
F_College_Death	Colleges die when their health hits 0	System	High
F_End	When the player ship dies, a game over overlay appears	System	Low
F_Attack	With “lmb” or “rmb” the ship attacks in the mouses direction	User	High
F_Particles	Various particles generated while playing, for: behind boat, projectile break	System	Low
F_OBJ_Comp	When the objective is complete the game will end to a victory overlay	System	High
F_Restart_End	When on the victory screen, game can be restarted using “Space”	User	High
F_OBJ_Track	As the player plays the objective will update and keep track of the players progress	User	High
F_Close	Game window closes on escape	System	Med
F_Regen	Players health regenerates over time while outside of combat	System	High
F_Repair	Players health regenerates quickly while near home	System	High
F_Ship_Attack	Enemy ships attack the player ship when nearby	System	High
F_Ship_Death	Player gains experience and plunder from defeating enemy ships.	System	High
F_Plunder	Player can spend their plunder in order to purchase upgrades for their ship	System	High

F_Obstacles	There will be obstacles around the map and bad weather for players to sail through.	System	High
F_Powers	There will be at least five special power-ups around the map that the player can obtain for a temporary boost.	System	High
F_Levels	There should be different levels of difficulty the player can choose from	System	High
F_Saving	Allow the player to save the state of their game at any time so that it can be resumed even after the game is closed.	System	High

Environmental Assumptions

ID	Assumption	Constraints	Risks
E_Demographic	Game must be built for target demographic	- Must be suitable for children. - Must not show specific content.	- Violent content shown to children.
E_OpenDay	Presented at an open day.	- Game must be designed with the atmosphere of an open day in mind.	- Risks of over running / not engaging
E_Disability	Some players might have disabilities	- Features of the game mustn't discriminate those with disabilities	- Potentially causing harm to users - Potentially putting some users at a disadvantage
E_System	Game will be played on the University's computers.	- Game must be able to be played as intended on the university's computer.	- Libraries or software might be not supported - Might not be compatible with required OS