

ENG1 Team Project

Deliverable 2: Requirements

Team 13 – Team Unlucky

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Requirements

To assess the customer's requirements and needs, we had to elicit the requirements of the project.

This started off by having an initial customer meeting with our customer, the primary stakeholder for the project. This was done in order to ask about requirements for the game along with preferences for various game features. Actual future users of our system could not be consulted due to them currently being unknown to both the developers and customer as the product is intended for use on open days.

This was done so we as a team had an understanding of what was needed from the product and what the development process would require. After this meeting, the information obtained in combination with the product brief provided allowed us to set out attainable requirements based on what was requested by the stakeholders. This was split into 3 sections:

- Functional requirements
- Non-functional requirements
- User requirements.

The team was split into 3 groups, each one initially working on one section, before they were assembled and refined into a clear set of requirements. Alterations were made as requirements were clarified with the customer via follow up meetings and emails.

These are presented in the following tables, which also address any risks or assumptions made about them. They use IEEE 29148 [1] as a loose baseline for their structure

References:

1. <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8559686>

User requirements

ID	Description	Priority	Assumptions	Risks
UR_GAMEPLAY_MODE	Single player mode exploration and combat with AI-controlled opponents	Shall	none	none
UR_USAGE_MODE	Game to be played during open-day demonstrations by prospective students and their families	Shall	player age range/skill is very wide	game may be too difficult for some players
UR_OS_REQUIREMENT	Playable on all major operating systems as a standalone desktop application.	Shall	Windows/Linux/Mac as a standalone executable	none
UR_TECHNOLOGY	The game should be able to run on a laptop with at least 4GB RAM	Should	none	none
UR_DESKTOP	Game must be a desktop application	Shall	Work as standalone executable	none
UR_COLOURS	Game should be brightly coloured to help attract players, with colourful design elements	Should	none	none
UR_COLOURBLIND	The game should be colourblind friendly by making use of symbols and not identifying by simply colour	Should	none	some colour choices risk making little sense
UR_EASE_GAMEPLAY	The game should be easy to pick up and play for a first-time user, taking around 5 mins per play with invariant difficulty.	Should	none	none
UR_DISPLAY	The game should be playable on a monitor of 13-27in dimensions, making proper use of the provided space.	Should	Work on all CS department monitors in full screen	may not fit future equipment
UR_INTERACTION	Game is controlled through keyboard interaction	Shall	No need for controller support	may limit disability access.
UR_RATING	Game is PG-rated (no blood, swearing, gore)	Shall	none	none
UR_NETWORK	The game must be completely offline, with no network connectivity	Shall	none	none
UR_FPS	The game should have reasonable and stable FPS and shouldn't crash often	Should	at least 30 FPS on minimum	may compromise some areas of game in name of stability
UR_MAP	The map must be a lake, with colleges on islands	Shall	none	none

Functional Requirements

ID	DESCRIPTION	RELATED USER REQUIREMENTS	TYPE	Assumptions	Risks
FR_SOUND	The system shall have no sound	UR_USAGE_MODE	FAILURE	none	not as engaging
FR_LEADERBOARD	There shouldn't be a leader board or any references for previous games (saves etc)	UR_USAGE_MODE	FAILURE	none	none
FR_NO_DEMO	The game shall not have a demo	UR_USAGE_MODE	FAILURE	none	none
FR_ONE_SHIP	The user shall only control one ship using keyboard with an unspecified camera angle	UR_INTERACTION	FAILURE	top down fixed on boat	none
FR_TUTORIAL	Game must have a tutorial of some sort at the start of the game	UR_EASE_GAMEPLAY	INVARIANT	Timed text-based instruction on game launch	none
FR_FIRE	There shall be an action where the user can fire at a ship/building, this should be implemented through the keyboard	UR_GAMEPLAY_MODE	TRANSFORMATION	Projectile weapons with 360-degree angle of aim depending on boat angle	none
FR_BUILDINGS	Enemy college buildings should engage in combat once you reach within a specific distance. Minimum of 3 and a max of not too many for 5 mins of gameplay	UR_GAMEPLAY_MODE	TRANSFORMATION	Colleges are fixed in place but fire back and have health	may feel barren if map is too big
FR_MENU	The menu system should be small and simple	UR_INTERACTION	FAILURE	Idle screen with controls shown for between games	none
FR_ANIMATION	Animations should be obvious, but only as far as indicating the user has completed an action. Child friendly, with no gore/inappropriate styling	UR_RATING	TRANSFORMATION	Not over the top for no reason PG, nothing a young child would find scary	none
FR_BOUNDARIES	The boundaries of the map should be fixed, the player should not be able to leave the map	UR_MAP	FAILURE	Fixed map, not generated at random	none
FR_POINTS	Points can be accumulated from defeating colleges	UR_GAMEPLAY_MODE	TRANSFORMATION	none	none
FR_ONE_SCREEN	All of the gameplay must occur on one screen, there shouldn't be any separate screens for combat etc	UR_WINDOW_SIZE	FAILURE	no separate pop-up windows	none

FR_TASKS	The game should have a set of tasks for the player to complete before challenging boss college (Endgame objective)	UR_GAMEPLAY_MODE	TRANSFORMATION	capture colleges allows player to fight boss college	none
FR_AI_DIFFICULTY	The AI must remain at a constant difficulty level	UR_EASE_GAMEPLAY	INVARIANT	none	none
FR_COLORBLIND	Icons, dynamic sprites (ships, land etc) should be identifiable with but not just colours	UR_COLORBLIND	INVARIANT	different ship/college sprites per college	none

Non-Functional Requirements and Constraint Requirements

Requirement (ID)	Description	Type	Fit criteria	Assumptions	Risks
NFR_CERTIFICATION	The game doesn't need to fit any certification schema	Constraint	N/A	none	none
NFR_SECURITY	The game doesn't require any fixed security requirements, but should not cause any issues.	Security	Game should not be flagged by security programs present on the host system.	not flagged by antivirus or firewalls	none
NFR_RELIABILITY	The game shouldn't crash very often	Reliability	The game shouldn't crash during testing	none	none
NFR_PERFORMANCE	Game should run at a decent frames per second on the specified minimum specs	Reliability	Game should not dip below 30 FPS	should not drop below this for long if at all	none
NFR_SCREEN_COMPATIBILITY	Game should work on any screen between 13 - 27 inches without issues and make good use of the space	Design Constraint	Game should fit a screen of 13, 27 and all testable sizes in between.	scalable to fit any screen/resolution	none
NFR_TIMING	The game shouldn't last more than 5 minutes	Timing	One playthrough should take around 5 mins for an inexperienced player	easy to pick up and play	may feel too short
NFR_CLARITY	In game interactions should be obvious and clear to the user, not relying on just colour to signify things	Accessibility	The in-game interactions should be clear to see, everything has a symbolic identifier and not just colours	icons/unique shapes	may bloat game size
NFR_USABILITY	Tutorials/in-game guides should be easily understood.	Usability	No technical jargon	Usable by young child	Unclear Tutorials