Requirements

Group 8 - Delta Ducks

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SSON: The program is to allow users to engage in a single player pirate themed RPG, partaking in combat with other ships and colleges, the game should be intuitive, accessible and entertaining.

Elicitation and Negotiation

- The core game requirements were elicited from a mixture of the product brief and initial customer interviews.
- The final requirements were decided upon together as a team post brainstorming.
- The collected requirements were analysed and assorted first into User and System requirements, then into further sub-requirements; Functional and Non-Functional.

An example of such analysis would be the inclusion of enemy ships. Despite not being initially apparent, it was evident ships of opposing colleges should be controlled via a simple AI enabling them to move independently around the map. Much of our requirements analysis followed this pattern of exploring abstract ideas and deriving detailed, concrete requirements via team deliberation.

Clarifications and stakeholder priorities were established during frequent structured customer interviews using questions prearranged and decided upon by the team. Doing so ensured teams interpretations and stakeholder expectations were in consensus and elucidated requirement priorities.

For example; the project brief was inexplicit regarding the immediacy of the tutorial requirement; with the benefit of customer meetings it was resolved that only basic helping tooltips at the beginning of the game were required. This shifted the team's priorities enabling the focus on requirements of perhaps greater urgency.

A requirements table was used to hold a summarized record of each requirement. Each record encompasses:

- ID
- Description
- Priority (Scale of 1 – 5; Highest priority - Lowest priority)
- Assumptions and the ID of the risks that it could entail (held in a separate table giving way to more comprehensive descriptions)

Separate tables were used to contain system and user requirements; this owes to the alignment of similarities between these types of requirements, for instance: the game should accommodate users who may have colour blindness (a user requirement) – gives way to the system requirement : Use of distinguishable colours for colleges. In the case of change in an existing requirement, it was also made easy through the use of the table to make update reports clear for the team.

User Requirement Table

ID	Description	Priority	Risk ID
UR_JAVA_GAME	The game should be built in Java	1	NULL
UR_PG	The game should be suitable for prospecting students and families	2	NULL
UR_GAME_TIME	New games should last between 5-10 minutes; containing a long lasting objective	2	R5
UR_MIN_ENEMY	There must be a minimum of three enemies to fight in any new game	2	NULL
UR_LOSE	If the user's ship health is reduced to zero or fails to complete the goal they should lose	2	NULL
UR_WIN	Game should end once the user completes the set goal	2	NULL
UR_UNIQUE	It should be clear which boats belong to the player and which belong to the respective enemy colleges.	3	R4
UR_POINT_AQ	The point total should increase upon defeating a college or the passing of time	3	R16
UR_PLUNDER_AQ	The plunder total should increase upon defeating a college.	3	R16
UR_ATTACK	The user must be able to attack and defeat colleges.	1	R11
UR_CON_GRAPHICS	Graphics must be consistent in scale and perspective.	3	R4
UR_ONE_SCREEN	Game must take place on a single screen.	1	R22
UR_BOAT_SHOOT	Boats must be able to be shot at.	2	R11
UR_TUTORIAL	Must be a clear tutorial section at the beginning of the game.	1	R22
UR_COLLEGE_DFT	The user should be able to decide whether they want to destroy or make a defeated college an ally	3	NULL
UR_TUTORIAL	The controls of the game should be made explicit to the user upon starting a new game	4	R6
UR_ANIMATION	Game sprites should be animated	5	NULL

Functional Requirement Table

ID	UR ID	Description	Priority	Risk ID
FR_JAVA	UR_JAVA_GAME	Programming language should be Java	1	NULL
FR_WIN_NOT_OBJ	UR_WIN	A game should never be completed via winning when the objective is not completed	1	R7
FR_WIN_ZERO_HP	UR_LOSE	A game should never be completed via winning when the player's ship has zero health	1	R7
FR_SCALING	UR_CON_GRAPHICS	Graphics must scale to the size of the screen without pixelation or distortion.	2	R4
FR_WASD	NULL	WASD controls should control the ship's movement	1	NULL
FR_ATTACK	NULL	LEFT CLICK should allow the ship to shoot a cannon ball and be aimed with the mouse.	1	NULL
FR_NEW_GAME	NULL	A new game should start shortly after a previous is completed	2	NULL
FR_SHIP	NULL	Ship class updates health attribute in real-time	2	R8
FR_COLLEGE	NULL	College class updates health attribute in real-time	2	R8
FR_AI_ATTACK	UR_ATTACK UR_BOAT_SHOOT	Colleges should be able to track and shoot at the player's ship	2	R9
FR_UI	UR_PLUNDER_AQ UR_POINTS_AQ	A user interface should display the users current amount of points and plunder; continuing to update them in real-time	3	R10
FR_ATTACK_SUCCESS	UR_PLUNDER_AQ	The user will receive plunder and XP upon defeating a college.	3	R16
FR_ATTACK_FAIL	UR_PLUNDER_AQ	On a failed attack the player will not receive plunder but may still gain XP.	3	R16
FR_ACCESS_OPTION	NULL	The user should have clear visible access to a button to enable or disable accessibility features.	1	NULL
FR_COMBAT	NULL	Upon attacking a college the enemy should engage the user in battle.	1	R11

Non-Functional Requirement Table

ID	Description	Priority	Risk ID
NFR_CONTROLS	The games controls should be easy to pick up	1	R6
UR_ONE_SCREEN	Game must take place on a single screen.	1	R22
NFR_COLOURS	The game should make use of colours that take into consideration a player that may have colour blindness/ text being dyslexic friendly	1	R13
NFR_DATA_STORAGE	The game should not store any user data or data pertaining to game progress.	1	R14
NFR_TESTING	The game must be tested with good coverage to aid in documenting and improving the reliability of the code.	2	R15
NFR_DOCUMENTATION	The game must be well documented to aid in maintainability and reusability.	2	NULL
NFR_NO_INTERNET	The system will not rely on or even attempt to contact any external servers or computers over any network.	1	R17
NFR_INTERFACE_READABILITY	The system will have clearly readable text and a bright colour pallet to afford for usability in a busy setting such as a demonstration.	3	R18
NFR_COLOUR_ACCESSABILITY	The game will not use exclusively colour to distinguish between elements in the game.	1	R13
NFR_NO_JARGON	There will be no technical jargon in the language used in UI elements displayed to the user.	3	R19