

2. Requirements

Team 10 | YorkKorsairs

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User Requirements

Category	ID	Description	Priority
Game setting	UR_PLATFORM	The user shall use a standard laptop PC to play the game	Shall
Game setting	UR_GAME_INIT	The user shall begin a new game from an initial state	Shall
Game setting	UR_SHIP_CONTROL	The user shall control a ship sailing across the great Lake of York	Shall
Game setting	UR_COMPETING_COLLEGES	The user shall encounter at least 3 other colleges	Shall
Game setting	UR_LEARNING_CURVE	The user shall play the game without training	Shall
Game setting	UR_GAME_DURATION	The user shall be able to complete the game within a ~5 minute timespan	Shall
Game setting	UR_GAME_OBSERVABILITY	The game shall accommodate onlookers in the PCs surroundings	Shall
Encounters	UR_FRIENDLY_SHIP_ENCOUNTER	The user shall encounter friendly NPC ships	Shall
Encounters	UR_HOSTILE_SHIP_ENCOUNTER	The user shall encounter hostile NPC ships	Shall
Encounters	UR_FIRE_WEAPONS	The user shall be able to fire weapons from the ship	Shall
Encounters	UR_BULLET_DODGE	The user shall be able to manoeuvre their ship to dodge fired munitions	Shall
Encounters	UR_FRIENDLY_BUILDING_INTERACT	The user shall interact with friendly buildings	Shall
Encounters	UR_HOSTILE_BUILDING_COMBAT	The user shall engage in combat with hostile buildings	Shall
Encounters	UR_HOSTILE_COLLEGE_CAPTURE	The user shall capture other colleges via combat	Shall
Earnables	UR_EARN_MONEY	The user shall earn money	Shall
Earnables	UR_EARN_XP	The user shall earn XP	May
Progress	UR_QUEST_PROGRESS	The user shall progress through a series of quests	Shall
Progress	UR_GAME_WIN	The user shall win the game through achieving an ultimate objective unlocked by the fulfilment of preceding requirements/quests	Shall
Progress	UR_GAME_LOSE	The user shall lose the game through being defeated in combat	Shall
Encounters	UR_SHIP_COMBAT	The user shall engage in combat with other ships	Assessment 2
Encounters	UR_OBSTACLE_ENCOUNTER	The user shall encounter obstacles while sailing in game	Assessment 2
Encounters	UR_WEATHER_ENCOUNTER	The user shall encounter bad weather while sailing	Assessment 2
Earnables	UR_SPEND_MONEY	The user should be able to spend the money earned	Assessment 2
Earnable	UR_POWER_UP	The user should be able to acquire 5 unique powerups	Assessment 2
Game setting	UR_DIFFICULTY	The user shall be able to choose between 3 difficulties	Assessment 2
Game setting	UR_SAVE_STATE	The user shall be able to save their game state and resume later	Assessment 2

Functional Requirements

ID	Description	User requirement	Risks	Priority
FR_GAME_RESET	The game shall allow restarting play from an initial configuration	UR_GAME_INIT		Shall
FR_MENU_KB_INPUT	The game shall accept keyboard input for menu navigation	UR_PLATFORM		Shall
FR_VIEWPORT_SCALING	The game shall render on a 13"-27" monitor	UR_PLATFORM	R6	Shall
FR_MIN_FPS	The game shall render at a minimum of 30 FPS	UR_PLATFORM	R7, R3	Shall
FR_CROSS_PLATFORM_WIN	The game shall be playable on Windows	UR_PLATFORM		Shall
FR_CROSS_PLATFORM_LIN	The game shall be playable on Linux OS	UR_PLATFORM	R9, R10	May
FR_SHIP_KB_INPUT	The game shall accept keyboard input for ship control	UR_SHIP_CONTR OL		Shall
FR_COLLEGE_ENTITY_TRACKING	The game shall keep track of ships and buildings for a minimum of 3 distinct factions	UR_COMPETING_ COLLEGES		Shall
FR_FRIENDLY_AI	The game shall control the actions of friendly AI ships	UR_FRIENDLY_SH IP_ENCOUNTER		Shall
FR_FRIENDLY_INTERACT	The game shall allow user collisions with friendly ships	UR_FRIENDLY_SH IP_ENCOUNTER		Shall
FR_HOSTILE_AI	The game shall control the actions of enemy ships	UR_HOSTILE_SHI P_ENCOUNTER	R1	Shall
FR_PLAYER_FIRE	The game shall enable the user to fire ship weapons	UR_FIRE_WEAPO		Shall

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FR_PLAYER_AMMO	The game shall maintain the state of the user's ship armament and ammunition	UR_FIRE_WEAPONS		Shall
FR_BULLET_TRAVEL	The game shall render the travel of a ship's fired munition	UR_BULLET_DODGE	R2	Shall
FR_MONEY_TRACKING	The game shall keep track of a player's money	UR_EARN_MONEY		Shall
FR_MONEY_SPENDING	The game will implement a shop, which allows a player to spend their money in exchange for items	UR_SPEND_MONEY		Shall
FR_WEATHER	The game will implement 'bad weather' obstacles that will hinder the user in some form	UR_WEATHER_ENCOUNTER		May
FR_OBSTACLES	The game will implement obstacles that will hinder the user in some form	UR_OBSTACLE_ENCOUNTER		May
FR_MONEY_UPDATE	The game shall give money on success in quests and encounters	UR_EARN_MONEY		Shall
FR_XP_TRACKING	The game shall keep track of a player's XP	UR_EARN_XP		May
FR_XP_UPDATE	The game shall give XP on successful combat encounters completed	UR_EARN_XP		May
FR_QUEST_TRACKING	The game shall maintain the state of the user's progress through multiple objectives	UR_QUEST_PROGRESS		Shall
FR_QUEST_RANDOMISE	The game shall randomise user's objectives between different playthroughs	UR_QUEST_PROGRESS		May
FR_QUEST_OBJECTIVE	The game shall associate quest objectives with game entities	UR_QUEST_PROGRESS		Shall
FR_BOSS_UNLOCK_TRACKING	The game shall allow the user to monitor quest progression status prior to unlocking final objective	UR_GAME_WIN		Shall
FR_FINAL_OBJECTIVE	The game shall activate a final objective upon final objective ready status	UR_GAME_WIN		May
FR_GAME_WIN	The game shall display game stats upon successful completion of boss encounter	UR_GAME_WIN		May
FR_PLAYER_DEFEAT	The game shall display game stats upon player defeat	UR_GAME_LOSE		May
FR_SCENARIO_FAIL	The game shall display game stats upon game over scenario completion	UR_GAME_LOSE		Shall

Non-Functional Requirements

ID	Description	User requirement	Fit criteria	Risks
NFR_SHIP_COLLISIONS	The game shall detect collisions between different ships	UR_HOSTILE_SHIP_ENCOUNTER	Distance between drawn assets <5px	R4
NFR_WORLD_COLLISIONS	The game shall detect collisions between ships and world objects	UR_COMPETING_COLLIGES	Distance between drawn assets <5px	
NFR_BULLET_COLLISIONS	The game shall detect collisions between game entities and fired munitions	UR_BULLET_DODGE	Distance between drawn assets <5px	
NFR_USER_INPUT_LAG	The game shall be responsive to user input	UR_SHIP_CONTROL	Input lag <200ms	
NFR_AI_LAG	NPC actions' responsiveness shall approximate that of player actions	UR_HOSTILE_SHIP_ENCOUNTER	AI response time <200ms	R3
NFR_RENDER_SMOOTHNESS	The game world shall render smoothly during player movement	UR_SHIP_CONTROL	Visual render lag <200ms	R8
NFR_COLOURBLINDNESS	Game map and assets should be distinguishable by a colourblind person	UR_PLATFORM	Subjective screenshot test via colourblind accessibility evaluation app	
NFR_EASE_OF_USE	The game shall be self-explainable and feature obvious controls	UR_LEARNING_CURVE	Tester must be able to pick up and play with no prior instruction	
NFR_GAME_DURATION	The game shall finish within ~5 mins in a win or loss for the player	UR_GAME_DURATION	Tester must reach the game stats screen within 4-6 mins	