	SSON: A single-player boat racing game that captures the excitement of the annual York Dragon Boat Race	
ID	**Description**	**Priority**
UR_PLAYABILITY	The game must be playable with a keyboard and mouse	M
UR_BOAT_SPECS	Every boat must have a unique spec in terms of speed, acceleration, maneuverability and robustness.	M
UR_TIRED_OVER_TIME	Over time paddlers get tired, speed, acceleration and meneuverability decrease progressively during every leg	M
UR_LANE_PENALTY	Every boat must remain in its lane for the duration of the race. Leaving the lane may result in a penalty at the discretion of the chief race official.	M
UR_OBSTACLES	Teams may find obstacles in the river during the race, like clueless ducks and geese, or tree branches floating down the river.	M
UR_COLLISIONS	Colliding against obstacles will progressively reduce the robustness of the boat, until it breaks down (resulting in the end of the game).	M
UR_DIFFICULTY	Every subsequent leg will increase in difficulty level.	M
UR_LEGS	The competition must consist of 3 'heat' legs and a final, with the fastest from the 3 heats racig in the final.	M
UR_AWARDS	In the final, the 1st place team will receive a Gold medal, the 2nd a Silver medal and the 3rd a Bronze medal.	M
UR_PERFORMANCE	The game must look smooth whrn played (30fps +).	M
UR_JAVA	Must be coded in Java programming language.	M
UR_BOATS_NO	The number of teams should be consistent with the number of legs so that races have an appropriate no. of boats and the race should not be cluttered.	S
UR_INFO_DISPLAY	During races, the user should be able to information such as position in race, distance to go, acceleration, stamina and damage taken.	S
UR_ACCESSIBILITY	The first leg/level should be more accessible so that beginners can learn the dynamics of the game.	S
UR_FINALS_PLACING	The fastest time of the three legs will be used to place teams in the finals.	M
UR_EXCITEMENT	The game must be exciting and engaging to the player, simulating the experience of the real York dragon race.	M
UR_LEVELS	The game must allow players to choose between different levels of difficulty: Easy, Normal and Hard.	M
UR_SAVE	The game must provide facilities that allow players to save the state of the game at any point and resume the saved game later.	M
UR_POWER_UP	Must have five power-up packs, which can be found floating down the river and be picked up by boats.	M

ID	Description	UR reference
FR_PLAYABILITY	The game must take the user's key-presses as input for controlling their boat in-game.	UR_PLAYABILITY
FR_SPEED_STAT	The speed specification of each boat should refer to its terminal velocity	UR_BOAT_SPECS
FR_STATS	The game has different properties for boat specification in terms of speed, acceleration, stamina, maneuverability and robustness	UR_BOAT_SPECS
FR_STAM_DECR	Stamina decreases over the duration of the race	UR_TIRED_OVER_TIME
FR_STAM_USAGE	How much maneuvering and changes of speed (acceleration) a boat is doing should further contribute to the increase in tiredness	UR_TIRED_OVER_TIME
FR_STAM_REGEN	Stamina replenishes if movements are conservative and stamina is fully restored between the legs	UR_TIRED_OVER_TIME
FR_STAM_EFFECT	Stamina would restrict movements (changes of speed or maneuverability) and this effect would increase as stamina decreases	UR_TIRED_OVER_TIME
FR_LANE_PENALTY	Boats must remain in their lane for the duration of the race. Leaving the lane should result in a penalty at the discretion of the chief race official.	UR_LANE_PENALTY
FR_COLLISION	Colliding against obstacles will progressively reduce the robustness of the boat, until it breaks down (resulting in the end of the game).	UR_COLLISION
FR_MOVING_OBSTACLES	Some obstacles should start stationary, but then in later legs start becoming more dynamic and moving left to right. Some obstacles e.g. bridge pillars are permanently stationary.	UR_OBSTACLES
FR_OBSTACLE_CLUTTER	Game should not display too many obstacles in order to not clutter the screen.	UR_OBSTACLES
FR_OBSTACLES	Game should display obstacles in the river during the race, like clueless ducks and geese, or tree branches floating down the river	UR_OBSTACLES
FR_DIFFICULTY	The game should increasing the difficulty level with every subsequent leg by changing the number, speed and type of obstacle (dynamic or static).	UR_DIFFICULTY
FR_DIFFICULTY_DISPLAY	During gameplay the game should overlay/display the difficulty level clearly and this should update to show any changes to the difficulty level based on the leg of the race.	UR_DIFFICULTY
FR_CONTROLS	The user should be able to see the controls for how to move the boat by pressing a certain key.	UR_DIFFICULTY
FR_TUTORIAL	At the start of the race there should a tutorial and/or overlay of controls that are clearly visible and understandable to a new player.	UR_ACCESSIBILITY
FR_LEGS	The competition must consist of 3 "heat" legs and a final, with the fastest from the 3 heats racing in the final	UR_LEGS
FR_AWARDS	n the final, the 1st place team will receive a Gold medal, the 2nd a Silver medal, and 3rd a Bronze medal.	UR_AWARDS
FR_BOATS_NO	Each race should have 3-6 boats.	UR_BOATS_NO
FR_POV	The game view should be fixed in a central position for the user's boat and shows boats around the user's boat (but not all of them).	UR_BOATS_NO
FR_INFO_DISPLAY	During race, screen should display user's position in race, distance remaining, stamina, speed, acceleration, and damage	UR_INFO_DISPLAY

FR_PEN_NOTIFICATION	When a penalty is incurred a notification should be displayed on screen	UR_LANE_PENALTY	
FR_LEVELS	Before starting the race, players should be able to choose the desired level of difficulty. Difference between levels lies in the number of obstacles, amount of damage received when colliding with them as well as penalty for crossing the lane.	UR_LEVELS	
FR_SAVE	The game must provide facilities that allow players to save the state of the game at any point and resume later by loaing the saved progress. Load option available in the main menu.	UR_SAVE	
FR_POWER_UP	There must be five power-up packs floating down the river (spawned randomly) that can be picked up by boats. These packs should restore robustness, or temporarily improve some other characteristic (e.g., speed).	UR_POWER_UP	

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NFR_PERFORMANCE	The game must run smoothly enough for the game to be enjoyable.	90% of the time the user does not experience dropped frames or stuttering	UR_PERFORMANCE
NFR_CLUNKINESS	No clunkiness in the movement of the objects/sprites.	90% of the time the user does feel the controls are responsive and visuals reflect this with low latency.	UR_PERFORMANCE
NFR_RESILIENCE	The game should not crash at any point during use or impact performance of the computer.	99% of the time the game does not crash.	UR_PERFORMANCE
NFR_LEARNABILITY	The game should be easy to pick up for beginners.	90% of users feel that they can learn the game easily.	UR_ACCESSIBILITY
NFR_RELIABILITY	The game should be available to use all of the time the user's computer is on.	99% of the time the game should be available to use.	UR_PERFORMANCE
NFR_ACCESSIBILITY	The game should be usable for people with impaired vision.	90% of users with impaired vision find the game easy to use.	UR_ACCESSIBILITY
NFR_USABILITY	The game's messages and information should be in plain English and easy to comprehend.	95% of users find the game information easy to understand.	UR_INFO_DISPLAY
NFR_RESPONSE_TIME	The game should respond quickly to any input from the user.	90% of the time the game responds within 16ms.	UR_PERFORMANCE
NFR_MEMORABILITY	The game should be memorable so that users know how to use it when they go back to it.	95% of the users remember how to use the game the second time round.	UR_PLAYABILITY
NFR_SATISFACTION	The game's design should be satisfying to look at and use.	90% of users are satisfied with the design.	UR_PLAYABILITY
NFR_EXCITEMENT	The aqame must be exciting for the player.	When given a 1-5 question on how exciting the game is on average, plavers should give 3 or above	UR_EXCITEMENT