

Description of Requirement:	How To Test:	Result and Reasons:
FR: The system shall have sharks in a water level that the player must avoid to survive.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click start</li> <li>3. Select Level 2</li> <li>4. If you see a shark in level 2 this passes otherwise fails</li> </ol>	FAIL - This test fails because you are unable to access level 2 due to it not being implemented so you cannot test this.
NFR: The system shall use royalty-free music.	<ol style="list-style-type: none"> <li>1. Check that all audio files are royalty-free property</li> <li>2. Check that all audio files are acknowledged in credits if required</li> <li>3. If steps 1 and 2 are true, this passes otherwise fails.</li> </ol>	PASS - All audio files are from royalty-free sources and the source is acknowledged on the credits screen.
FR: The system shall have a button to return to the main menu on every screen.	<ol style="list-style-type: none"> <li>1. Go to every menu screen</li> <li>2. If every menu screen has a button to return to the main menu when clicked, this passes otherwise fails</li> </ol>	PASS - Every menu screen has a button to return to the main menu.
FR: The system shall play music within 2 seconds of the user starting or continuing the game.	<ol style="list-style-type: none"> <li>1. Log the system time upon game start</li> <li>2. Log the system time when music is loaded</li> <li>3. If the difference between the times logged in step 2 and 3 and ensure the difference is less than 2 seconds, this passes otherwise fails</li> </ol>	PASS - The system initiates music within 2 seconds of starting the game.
FR: The system shall provide a jumping, crouching, and running action for the game character.	<ol style="list-style-type: none"> <li>1. Check that there is at least one key mapped to each character action</li> <li>2. Check that each character action is animated in gameplay</li> <li>3. If step 1 and 2 are true, this passes otherwise fails</li> </ol>	FAIL - The game character has a jumping and running action, but not a crouching action.

NFR: The system shall take no more than 10 minutes for the general user to learn how to play the game.	<ol style="list-style-type: none"> <li>1. Get a sample of 5 users</li> <li>2. Let users play the tutorial and navigate the menu screens</li> <li>3. If all 5 users take no more than 10 minutes to start playing level 1, this passes otherwise fails</li> </ol>	FAIL - The tutorial is not implemented.
FR: The system shall override the user's previous high score after the user ends the game only if the current score is greater than the previous high score.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select start</li> <li>3. Earn a high score greater than any previous high score</li> <li>4. Go to high scores</li> <li>5. If the new high score overrides the previous high score on the high score table, this passes otherwise fails</li> </ol>	FAIL - High scores table is not fully implemented and is currently filled with temporary values.
FR: The system shall display success within 10 seconds of the user defeating the final boss level.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select level 6</li> <li>3. Defeat the final boss</li> <li>4. If system displays success within 10 seconds, this passes otherwise fails</li> </ol>	FAIL - Level 6 has not been implemented.
NFR: The system shall comply with intellectual property rights and copyright policies defined by the Digital Millennium Copyright Act of 1998.	<ol style="list-style-type: none"> <li>1. Check that all audio and image files are royalty-free property</li> <li>2. Check that all audio and image files are acknowledged in credits if required</li> <li>3. If steps 1 and 2 are true, this passes otherwise fails</li> </ol>	PASS - All visuals and audio are from royalty-free sources or created by team members.
NFR: The system shall use at most 1GB of RAM.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select various levels</li> <li>3. If the RAM usage exceeds 1GB this test fails, otherwise it passes</li> </ol>	PASS - At its current state, the program uses significantly less RAM than 1GB.

FR: The system shall display the time during gameplay from when the game starts until the player dies.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select any level</li> <li>3. If there is a timer in the level, this test passes, otherwise it fails</li> </ol>	FAIL - This test fails as the timer has not yet been implemented.
FR: The system shall provide a page that contains user achievements.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select achievements</li> <li>3. If there are achievements available, this test passes, otherwise it fails</li> </ol>	PASS - User achievements can be accessed from the menu.
FR: The system shall provide an input during the game that allows the user to pause and resume the game.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select any level</li> <li>3. If there is a functional pause icon, this test passes, otherwise it fails</li> </ol>	FAIL - The pause functionality has not yet been implemented.
FR: The system shall indicate numerically the user's lives during gameplay.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Select any level</li> <li>3. If player lives are shown throughout gameplay and update after interactions with enemies, this test passes, otherwise it fails</li> </ol>	FAIL - Lives have been changed to health.
FR: The system shall allow the user to remap their preferred controls.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Access options</li> <li>3. Access controls</li> <li>4. If the user can click on a specific action and press a key to change that action to the desired key, this test passes, otherwise it fails</li> </ol>	FAIL - This fails as key remapping has not yet been implemented.
FR: The system shall provide an instructions page that the user can reference.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click on help</li> <li>3. You should be able to see information regarding the game including companions</li> </ol>	FAIL - This fails because there is only filler text within the instructions page.

FR: The system shall have coral reef obstacles the player must avoid.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click on start</li> <li>3. Select level 2</li> <li>4. If there is no coral reef in this level this fails, otherwise it passes</li> </ol>	FAIL - This fails because you cannot access level 2. The level is not implemented.
FR: The system shall have a water level.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click on start</li> <li>3. Select level 2</li> <li>4. If the level is underwater or contains a blue overlay this passes otherwise it fails</li> </ol>	FAIL - This fails because you cannot access level 2. The level is not implemented.
FR: The system shall show the player's final score when the player dies at any point in the game.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click on start</li> <li>3. Select any level</li> <li>4. Play the game and reach 0 health</li> <li>5. If your score is displayed this passes otherwise it fails</li> </ol>	FAIL - This fails because when you die in the game you only get shown options to play again or return to the main menu.
NFR: The system shall store the high scores in minutes and seconds.	<p>(Requires Access to DB)</p> <ol style="list-style-type: none"> <li>1. If you query the highscore table the scores column should be shown as a time in minutes and seconds, this passes otherwise fails</li> </ol>	FAIL - This fails because the score is an integer.
FR: The system shall provide a means of adjusting the audio level.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click options.</li> <li>3. Take note of the audio level before adjusting audio</li> <li>4. Click the "+" or "-" symbols to adjust audio level</li> <li>5. If the audio level differs from what was initially outputted, this passes, otherwise it fails</li> </ol>	PASS - Audio level outputted is changed when "+" and "-" are clicked.
FR: The system shall create a new user account between one to five seconds of the	<ol style="list-style-type: none"> <li>1. Click on create account</li> <li>2. Enter a username and password</li> </ol>	FAIL- This fails because Create Account is not fully implemented.

user submitting their account information via the user sign-up page.	3. Click on create account 4. Log in with this new account information 5. If sent to the main menu this passes otherwise it fails.	
FR: The system shall set the user's current score to zero within 1 second of the user starting a new game.	1. Go to main menu 2. Click start 3. Select level 1 4. If score is zero this passes otherwise it fails	FAIL - This fails because scores are not implemented.
FR: The system shall save the user's game data between one to five seconds of the user triggering a save point.	1. Go to main menu 2. Click start 3. Select level 1 4. Play the game until a save point is triggered 5. Have player die and choose to play again 6. If the level starts at the save point this passes otherwise it fails	FAIL - This fails because points are not implemented.
FR: The system shall remove the user's game data between one to five seconds of the user requesting that their data be deleted.	1. Go to main menu 2. Click on options 3. Select remove account 4. If on the log in prompt and attempts to log in with user credentials fail, this passes otherwise it fails	FAIL - This fails because delete account is not implemented.
NFR: The system shall require that the user have an account to play the game.	1. Exit out of the log in prompt 2. Click start. 3. Select level 1 4. If the user cannot play the game, then this passes, otherwise it fails	FAILS - This fails because the user can access all screens accessible from the menu by exiting out of the login prompt.
NFR: The system shall take between one and three seconds to refresh the high scores table.	1. Go to the main menu 2. Click on high scores 3. If the high scores table is populated by up-to-date	FAILS - This fails because the table is filled with temporary values.

	scores this passes, otherwise fails	
NFR: The system shall operate on Windows 8 and newer and OS X Yosemite and newer.	1. If the game properly runs on all operating systems on Windows 8 and newer and OS X Yosemite and newer, this passes otherwise fails	FAILS - This has not been tested on Windows 8.
NFR: The system shall require a keyboard and mouse.	1. Check if the keyboard and mouse needed 2. If step 1 is true, this passes otherwise fails	PASS - The system requires mouse and keyboard input.
FR: The system shall provide a help panel by displaying tips within 10 ms after the user has clicked the Help button.	1. Go to main menu 2. Click on help 3. If help panel is displayed within 10 ms after the user's mouse click, then this passes, otherwise it fails	FAILS - This fails because we did not implement this requirement.
FR: The system shall display the main menu within 10 ms after the program has started.	1. Go to main menu 2. If the main menu is displayed within 10 ms after the start of program, then this passes, otherwise it fails	FAIL - The system first displays the Login within 10 ms after the program has started and not the main menu.
FR: The system shall have a forest level.	1. Go to main menu 2. Click on start 3. Select level 4 4. If the level takes place in a forest background, then this passes, otherwise it fails	FAILS - This fails because a forest level was not implemented.
FR: The system shall provide a multiplayer mode for players to play together.	1. Go to main menu 2. Click on multiplayer mode 3. If the game starts with multiplayers, then this passes, otherwise it fails.	FAILS - This fails because we did not implement this requirement.
FR: The system shall provide a button to exit the game.	1. Select random screen 2. Click on exit button	PASS - This passes because there is a button implemented to exit the game.

	3. If the system exits the game, then this passes, otherwise it fails	
FR: The system shall have a sky level.	1. Go to main menu 2. Click on start 3. Select level 3 4. If the level takes place in a sky background, then this passes, otherwise it fails	FAILS - This test fails because Level 3 has not been implemented yet.
FR: The system shall spawn one new companion at varying intervals between 4 and 6 seconds from the start of the game until the user dies.	1. Go to main menu 2. Click on start 3. Select level 1 4. Use a timer to check that a new companion is spawn every 4 to 6 seconds until the player dies 5. If step 4 is true, then the test passes, otherwise it fails	FAILS - This test fails because companions have not been implemented yet.
FR: The system shall allow the user to turn "Tips" on or off.	1. Go to main menu 2. Click on options 3. There should be a button on the options screen that allows you to turn tips "on" or "off"	FAILS - This test fails because we did not implement a tips option.
FR: The system shall update the high score rankings within ten seconds after a user has died or completed the game.	1. Go to main menu 2. Click on start 3. Select level 1 4. Play the game until 0 health is reached and the user dies 5. Use a timer to check how long it takes for the high score rankings to update 6. If the timer records a time less than 10 seconds, then the test passes, otherwise it fails	FAILS - This test fails because the high scores rankings has not been implemented yet.

FR: The system shall display companions following the main character once the user collects it.	<ol style="list-style-type: none"> <li>1. Go to main menu</li> <li>2. Click on start</li> <li>3. Select level 1</li> <li>4. Play the game and when the user collects a companion, check that the companion follows the user</li> </ol>	FAILS - This test fails because a Companion class has not been implemented.
NFR: The system shall handle exceptions for incorrect user input.	<ol style="list-style-type: none"> <li>1. Check if there are any uncaught exceptions from an incorrect user input</li> <li>2. If the system continues to run this passes, otherwise the test fails</li> </ol>	FAILS - This test fails because we have not implemented exception handling for all incorrect user input.
NFR: The system shall take no longer than 1 second to transition to a different screen.	<ol style="list-style-type: none"> <li>1. For each screen, log the time it takes to transition to a different screen</li> <li>2. If the time is longer than 1 second, then the test fails</li> </ol>	FAILS - This test fails because we did not implement a logger to check the transition time between screens.