

## Black-Box Testing Evidence

All black-box tests were run on a university computer using the final .jar executable in Windows 10.

Test Group	Test Name	Test ID	Description	Result	Comments
General	The game loads from a .jar.	5.1	Running the Desktop Launcher starts the game and takes you to the main menu.	PASS	
User Interface: Menu	Start button takes you to select level screen.	6.1		PASS	
	Exit button stops the game safely.	6.2		PASS	
User Interface: Select Level	Back button takes you back to the main menu.	7.1		PASS	
	Save button creates a text file containing the current game state.	7.2	Creates the save file in the directory zepr/saves/ with the current date/time as the file name. Prompts the user that a save file was created. Creates a save file in the directory in which the executable is stored.	PASS	Although this button exists the functionality has not been implemented.
	Load button gives you the option to load any of the save files.	7.3	Pressing the load button should present you with a list of all the save files. Loads the save file from the directory in which the executable is stored, updating points and the current progression. Then it reloads the page to show the changes.	PASS	Although this button exists the functionality has not been implemented.
	Town button selects the town level.	7.4	This test passes if the text below the level buttons changes to a description of the level and the level has	PASS	

			the town map when it is played.		
	Halifax button selects the town level.	7.5	The town level must be completed. Then this test passes if the text below the level buttons changes to a description of the level and the level has the Halifax map when it is played.	PASS	Depending on the the users progress in the game this button may be greyed out. In this case the button shouldn't select this level.
	Courtyard button selects the courtyard level.	7.6	The Halifax level must be completed. Then this test passes if the text below the level buttons changes to a description of the level and the level has the Courtyard map when it is played.	PASS	Depending on the the users progress in the game this button may be greyed out. In this case the button shouldn't select this level.
	Bus Stop button selects the bus stop level	7.7	The Courtyard level must be completed. Then this test passes if the text below the level buttons changes to a description of the level and the level has the Bus Stop map when it is played.	PASS	Depending on the the users progress in the game this button may be greyed out. In this case the button shouldn't select this level.
	Comp Sci button selects the computer science level	7.8	The Bus Stop level must be completed. Then this test passes if the text below the level buttons changes to a description of the level and the level has the Comp Sci map when it is played.	PASS	Depending on the the users progress in the game this button may be

					greyed out. In this case the button shouldn't select this level.
	Glasshouse button selects the glasshouse level	7.9	The Comp Sci level must be completed. Then this test passes if the text below the level buttons changes to a description of the level and the level has the Glasshouse map when it is played.	PASS	Depending on the the users progress in the game this button may be greyed out. In this case the button shouldn't select this level.
	Minigame button selects the minigame level	7.10	This button simply navigates to the minigame screen	PASS	
	Nerdy button sets the player type to nerdy.	7.11	This test passes if the text below the player option changes to a description of the player and the player has a blue shirt and 150HP when a level is played.	PASS	
	Sporty button sets the player type to sporty.	7.12	This test passes if the text below the player option changes to a description of the player and the player has a red shirt and moves faster when a level is played.	PASS	
	StJohn button sets the player type to StJohn	7.13	This test passes if the text below the player option changes to a description of the player and the player has a green and moves slower and has less health than the other types when a level is played.	PASS	
User Interface: Pause Menu	Pressing escape in any level takes you to the pause menu.	8.1	Try pressing escape in each level. It should change the screen to one with a "Resume" and "Exit" button	PASS	

			for every level.		
	Pressing the resume button should continue the level.	8.2	Check the game state before pausing and after resuming is the same.	PASS	
	Pressing the back button should return you to the level select screen.	8.3	If the back button is used there should be no change to the game progress.	PASS	
	Start a level after pausing and exiting it should give a fresh version of the level.	8.4	A fresh version of the level will start you from the player spawn point on wave 1 with all the zombie remaining.	PASS	
User Interface: Minigame	Pressing any of the buttons on the board changes it's text to "0", unless the button's text is already "X" or "0".	9.1	Try pressing each button while it's in its 'empty' state. It should change the text from its old number to "0".	PASS	
	On the AI player's turn, one of the buttons, whose text is not yet "0" or "X", changes its text to "X".	9.2	When the turn counter is even, the text of one of the buttons should change to "X", as long as its text is not already "0" or "X".	PASS	
	Pressing the exit button should return you to the level select screen.	9.3	This button should return you to the level select screen and should not alter the game progress or current amount of points.	PASS	
	When the player reaches a win condition, the screen changes to the win screen.	9.4	When the player reaches one of the win conditions, the screen should change to a screen with text informing the player that they've won and a back button.	PASS	

	When the player reaches a lose condition, the screen changes to the lose screen.	9.5	When the player reaches one of the lose conditions, the screen should change to a screen with text informing the player that they've lost and a back button.	PASS	
	When the board reaches a draw state, the screen changes to the draw screen.	9.6	When none of the buttons on the board are in their original state, but the player has neither won or lost, the screen should change to a screen with text informing the player that they're in a draw state and a back button.	PASS	
	Pressing the back button on any of end screens should return the player to the level select screen.	9.7	When the back button is pressed, the game should change screens to the level select screen. This should not alter the game progress or current number of points.	PASS	
Game Logic	Completing the town or Halifax or Courtyard or Bus Stop or Comp Sci level increments game progress.	9.1 10.1	If completing the town or Halifax or Courtyard or Bus Stop or Comp Sci level displays the message "Level complete" and unlocks the next level then the test passes.	PASS	Completing the Halifax level causes a crash inconsistently. This appeared late in the development process and we didn't have time to fix it.
	Completing the Courtyard Glasshouse level completes the game.	9.2 10.2	If completing the Courtyard Glasshouse level displays the message "Game complete" then the test passes.	PASS	In the current implementation of the game Courtyard Glasshouse is the last level. If more were added this test

					would have to change.
	Completing an already completed level does not affect game progress.	9.3 10.3	Complete each level twice before moving on to the next level. Make sure the progress doesn't change after completing each level a second time. If it doesn't change the test should pass.	PASS	
	Killing a zombie decrements the zombies remaining counter.	9.4 10.4	Attack a zombie until it disappears (killed) and compare the number of zombies remaining before and after.	PASS	
	Killing all zombies in a wave increments the wave counter.	9.5 10.5	Attack all zombies until they disappear and compare the wave number before and after.	PASS	
	Completing a level returns you to the select level screen.	9.6 10.6	Completing a level takes the user to a new screen that says "Level completed" with a button that takes them back to the select level screen.	PASS	
	If you die you return to the select level screen.	9.7 10.7	If the player dies the game takes the user to a new screen that says "You died" with a button that takes them back to the select level screen.	PASS	
	More zombies are spawned as the game progresses.	9.8 10.8	Each wave in a level has more zombies than the previous wave. Each equivalent wave across the levels has more zombies than the previous level.	PASS	
	A power up is dropped after completing a wave in a level.	9.9 10.9	Once all the zombies in a wave have been killed a power up should be spawned.	PASS	
	Killing a zombie increases	10.10	Attack a zombie until it disappears (killed) and	PASS	

	the number of points.		compare the point counter to its previous value. This test passes if the value has increased by 100.		
	The player should constantly gain points while being in a stage and avoiding zombies.	10.11	While in a stage, without killing any zombies, look at the point counter. It should be increasing. Take damage from a zombie and the counter should stop increasing for a few seconds, before starting to increase again.	PASS	
	The rate at which the player gains points should increase with time.	10.12	While in a stage, without killing any zombies, look at the point counter. The rate at which it increases the points should increase for a short while before reaching a constant increase.	PASS	
Game Logic: Minigame	When it's the AI's turn, the AI changes the state of one of the buttons to the "X" state.	11.1	When the turn counter is at an even number, the AI should randomly select a state whose text is not yet "0" or "X" button and change its text to "X".	PASS	
	When the board reaches one of the 8 winning conditions, the game ends.	11.2	When the board reaches one of the following end conditions, the game should change the screen to the win screen: (1:0, 2:0, 3:0), (4:0, 5:0, 6:0), (7:0, 8:0, 9:0), (1:0, 4:0, 7:0), (2:0, 5:0, 8:0), (3:0, 6:0, 9:0), (1:0, 5:0, 9:0), (3:0, 5:0, 7:0).	PASS	
	When the board reaches one of the 8 losing conditions, the game ends.	11.3	When the board reaches one of the following end conditions, the game should change the screen to the lose screen: (1:X, 2:X, 3:X), (4:X, 5:X, 6:X), (7:X, 8:X, 9:X), (1:X, 4:X, 7:X), (2:X, 5:X, 8:X), (3:X, 6:X, 9:X), (1:X, 5:X, 9:X), (3:X, 5:X, 7:X).	PASS	
	When the board reaches a draw state, the game ends	11.4	When none of the buttons on the board are in their original state, but the player has neither won or lost,	PASS	

			the game should change the screen to the draw screen.		
	When the player wins at the minigame, the player gains score.	11.5	When the player reaches a win condition, the point counter should be increased by 1000. This can be seen in the level select screen, where the point counter is displayed.	PASS	
Inputs	The player faces in the direction of the mouse pointer at all times.	10.1		FAIL	When holding down the left mouse button to attack, the player won't then change direction until the mouse button is released.
	Clicking causes the player to attack in the direction of the mouse pointer.	10.2 12.1	It will be clear when the player attacks as it has a punching animation.	PASS	
	W, A, S, and D keys move the player up, left, down, and right respectively.	10.3 12.2		PASS	