Hangman Testing

Кеу

Green - Typical Interaction Orange - Erroneous Interaction Red - Extreme Interaction

Test Table

Test	Data Type	Expected Outcome	Actual	Corrective	Evidence
No.			Outcome	Action/Notes	
		1	Set	up	4
<u>No.</u>	Typical	The difficulty should change respective of the difficulty radio buttons	Outcome Setu The difficulty does indeed change correctly	Action/Notes up None (00:21)	Image: Setup × Hangman Eary Medum Herd Ure Present, Movie Tales and Book Tales? Begin Scoreboard Reset Welcome to Hangman Medum Herd Welcome to Hangman Begin Scoreboard Reset Welcome to Hangman Netwer Head Ure Preset, Movie Tales and Book Tales? Kortonuc Hangman Setup Kortonuc Hangman Hangman Eaw Medum Hangman Kortonuc Terms_Hangman.exe' (CLR v4.0.30319: 'Forms_Hangman.exe' (CLR v4.0.30319:

2	Typical	The 'UsePhrases'	The	None (1:04)	Retup X					
		Boolean should	'UsePhrases'		Welcome to					
		change respective	Boolean value							
		of its checkbox	is updated		Hangman					
			appropriately		• Easy					
					O Medium					
					O Hard					
					☑ Use Phrases, Movie Titles and Book Titles?					
					Begin Scoreboard Reset					
					Output					
					Show output from: Debug					
					'Forms_Hangman.exe' (CLR v4.0.30319: For					
					Updated difficulty to: Easy					
					'Forms_Hangman.exe' (CLR v4.0.30319: For					
					Updated difficulty to: Medium Updated difficulty to: Medium					
					Updated difficulty to: Hard					
					Updated difficulty to: Hard					
					Updated UsePhrases to False					
					Updated UsePhrases to True					
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					Call Stack Breakpoints Command Window Im					
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3	rypical	When there is	When there is	None (1:46)	No 'scoreboard.txt' file					
3	гурісаг	when there is either no	When there is no	None (1:46)	No 'scoreboard.txt' file Name Date modified Type Size ① forms_Hangman.exe 04/01/2020 1647 Application 50 K8					
3	гурісаі	When there is either no 'scoreboard.txt' file, or the file is	When there is no 'scoreboard.txt'	None (1:46)	Name Date modified Type Size It rom _t-tangmana.exe 0407/2020 1647 Application. 56 KB If rom _tangmana.exe 0407/2020 1647 McConfiguration 1KB If roms_tangmana.exe 0407/2020 1647 McConfiguration 1KB If roms_tangmana.exe 0407/2020 1647 McConfiguration 1KB					
3	Гурісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the	When there is no 'scoreboard.txt' file, the 'Scoreboard'	None (1:46)	Name Date modified Type Size Itom, Hargman.ee 04/97/2003 18-13 SML Configuration. 50.85 Øf form, Jargman.ee 04/97/2003 18-13 SML Configuration. 1.80 Øf form, Jargman.ept 04/97/2003 18-17 SML Configuration. 1.80 Øf form, Jargman.ept 04/97/2003 18-17 SML Configuration. 1.80 Øf form, Jargman.ept 04/97/2003 18-17 Text Document 1.80 Øf form, Jargman.maxill 04/97/2003 18-27 Text Document 4.60 Øf workstrt 04/97/2003 18-27 Text Document 4.60					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard'	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset'	None (1:46)	Nor Score board.txt* file Name Date modified Spec Itomu, Langman,exee 04/07/2003 13:33 Soft Score 06 (mm, Langman,exee) 04/07/2003 14:67 Program Devision D. 90 KB 06 (mm, Langman,exee) 04/07/2003 14:67 Program Devision D. 90 KB 06/07/2003 11:05 Text Document 4 KB 05/07/2003 11:05 Text Document 6 KB					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both	None (1:46)	No Score board.txt' file Name Date modified Type Size If rom, Lingman.exe 0407/2020 16.47 Application. 1.60 If rom, Lingman.exe 0407/2020 16.47 Program Debug D 9.60 If rom, Lingman.exe 0407/2020 16.47 Program Debug D 9.60 If rom, Lingman.exe 0407/2020 16.47 XML Countert 1.80 If rom, Lingman.exe 0407/2020 16.47 XML Countert 1.80 Intrase.stat 0407/2020 14.23 Test Document 4.83 Intrase.stat 03/07/2020 11.05 Test Document 6.83					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Type See 1 from, Jangmanane 0407/2020 1131 50.80 1 from, Jangmanapab 0407/2020 1131 50.80 1 maxestat 0407/2020 1137 Test Document 4.83 1 wordstat 0407/2020 1137 Test Document 6.83					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Spec Imme Date modified Spec Immediation 1404/202013133 Att Configuration 118 Immediation 0407/202011471 Test Document 4.83 Immediation 0407/20201105 Test Document 4.83 Immediation					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Type See Image: See See See See See See See See See S					
3	турісат	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Type See Image: International Systems Mark modified Type See Image: International Systems Mark Mark Mark Mark Mark Mark See Image: International Systems Mark Mark Mark Mark Mark Mark Mark Mark					
3	турісаї	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Type Sce Item 0447020011333 5018 Item (Jappmanezee 0449702011333 7016 Item (Jappmanezee 0449702011333 7016 Item (Jappmanezee 0449702011333 7016 Item (Jappmanezee 0449702011333 7016 Item (Jappmanezee 044970201143 7016 Item (Jappmanezee 0449702011647 7018 Item (Jappmanezee) 0449702011647 7018 Item (Jappmanezee) 0449702011647 7018 Item (Jappmanezee) 0449702021105 Text Document 4.83 Item (Jappmanezee) 0449702021105 Text Document 6.83 Item (Jappmanezee) X X X					
3	турісаї	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Type Sce Imme Date modified Type Sce Immediation 0407/2003 11:31 Mc Configuration. 1:83 Immediation 0407/2003 11:31 Test Document 4:83 Immediation 0407/2003 11:31 Test Document 6:83 Welcome to Hangmanan Observe Medum Hard Use Phrases, Movie Titles and Book Titles? Sce					
3	турісаї	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable	None (1:46)	No 'scoreboard.txt' file Name Date modified Spec Spec Imme Date modified Spec Spec Immediate Date modified Spec Spec Immediate Date modified Date modified Spec Immediate Date modified Date modified Spec Immediate Date modified Date modified Spec Both buttons are now disabled Spec Spec Spec Image Date modified Spec Spec Spec Welcome to Hand Spec Spec Spec Image Date modified Spec Spec Spec Begin Scoreboard Reset Spec Spec					
3		When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma	None (1:46)	No 'scoreboard.txt' file Name Outer modified Type Sce Imme Outer modified Type Sce Imme Imme Outer modified Type Sce Imme Imme Outer modified Type Sce Imme Imme Imme Imme Imme Imme Imme Imme Imme Imme Imme Outer Total Imme Imme Imme Imme Outer Total Imme Imme Imme Imme Outer Total Outer Total Imme Imme Imme Outer Total Imme Imme Imme Imme Outer Total Imme Imme Imme Imme Setup X Velocome to Imme Imme Scoreboard Reset Imme					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen	None (1:46) in None (2:52)	No 'scoreboard.txt' file Name Outer modified Spec Spec Imme Outer modified March 2001 Spectation State Imme Outer modified 1402/2001 State State State Imme Outer modified 1402/2001 State					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen keyboard is generated in	None (1:46) in None (2:52)	No 'scoreboard.txt' file Immediation of the modified of the m					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should be generated at runtime when the	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen keyboard is generated in the 'OWERTY'	None (1:46) in None (2:52)	No 'scoreboard.txt' file					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should be generated at runtime when the window first	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen keyboard is generated in the 'QWERTY' keyboard	None (1:46) in None (2:52)	No 'scoreboard.txt' file					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should be generated at runtime when the window first opens, preferably	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen keyboard is generated in the 'QWERTY' keyboard layout as	None (1:46) in None (2:52)	No 'scoreboard.txt' file Name Outer modified Spectrom Score Immediate 040702031333 XML Colfiguration XML Immediate 040702031133 XML Colfiguration XML Immediate 0407020311647 Ymmediate 4.83 Immediate 040702031105 Yest Document 4.83 Immediate 040702031105 Yest Document 4.83 Immediate Wolcome to Hangman 4.83 Immediate Kest Wolcome to Hangman Immediate Scoreboard Reset Kest Immediate Scoreboard Reset Kest Immediate Scoreboard Scoreboard Kest Immediate Scoreboard Scoreboard Kest					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should be generated at runtime when the window first opens, preferably using 'QWERTY'	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable Ma An onscreen keyboard is generated in the 'QWERTY' keyboard layout as intended	None (1:46) in None (2:52)	No 'scoreboard.txt' file Name Date modified Size Imme Hand Note Prases, Movier Titles and Book Titles? Imme Begin Scoreboard Reset					
3	Typical	When there is either no 'scoreboard.txt' file, or the file is empty, both the 'Scoreboard' button and the 'Reset' button should be disabled An onscreen keyboard should be generated at runtime when the window first opens, preferably using 'QWERTY' keyboard layout	When there is no 'scoreboard.txt' file, the 'Scoreboard' and 'Reset' buttons both disable An onscreen keyboard is generated in the 'QWERTY' keyboard layout as intended	None (1:46) in None (2:52)	No 'scoreboard.txt' file Name User Size Immutangmacke 0407/2001147 Apdiction 918 Immutangmacke 0407/20011313 XML Colfiguration 118 Immutangmacke 0407/2001147 Text Document 118 Immutangmacke 0407/2001147 Text Document 018 Immutangmacke 0407/2001105 Text Document 018 Immutangmacke 0407/2001105 Text Document 018 Immutangmacke Welcome to Hangman Immutangmacke Immutange Immutange Medum Hand Immutange Immutange Immutange Immutange Immutange Scoreboard Reset Immutange Immutange Immutange Immutange Immutange Immutange Immutange Immutange Immutange Immutange Immutange Immutange </td					

E	Tunical	Licor interactions	The keybeard	None $(4.2E)$	🗑 Hangman 🛛 🗙
5	турісат	with the onscreen keyboard should insert the respective characters into the text box	successfully types the correct letters into the text box when clicked on	None (4.25)	Cane O UEAI kyot Submit Q WE R T Y U O P A S D E G H J K L Z X C V B N M Pres TETURY is usednet arres the "Safert tuden" Attempts Remaining: 8
6	Typical	After being checked, the contents of the input text box should be cleared	The text box does indeed clear after the submit button is pressed	None (4:54)	W Hangman × Canne
7	Typical	After the submit button is pressed, if a single letter is in the text box, the respective keyboard button should change colour to notify the user that they have already picked that letter	The corresponding buttons do indeed change colour correctly.	None (5:18)	VERTIFIER Remaining: 8
8	Typical	The submit button should be disabled if no text is in the text box	The submit button is disabled when there is no text in the text box (this does not include whitespace)	None (5:59)	El: Hangman × Game - Z - Image: Subme Subme Q V F Image: Subme Subme Q V F Image: Subme Subme Image: Subme Image: Subme
9	Erroneous	Entering numbers and other unexpected characters into the textbox should show an error popup	The error popup did not show, and the unexpected character was added to the list of incorrect characters	The submitted inputs are now checked character-by- character using the 'Asc' method to check whether the letter is in the alphabet (6:37)	Problem ×

10	Extreme	Entering more than one character into the text box should show an error popup, unless the number of characters is the same as the number of characters in the word	The error popup window successfully displays	None (7:45)	Came Vive FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
11	Typical	If a letter or word is correct, it should replace the corresponding dashes in the game view	The correct letter(s) and words are placed in the correct positions in the label	None (8:55)	We Hargman × Gama
12	Typical	If a letter or word is incorrect, it should be inserted in the incorrect inputs label in the game view	Any incorrect inputs are appended to the incorrect inputs label	None (9:39)	We regree X Game X Z GAMMOTHS X * hout X W E R T Y U I O P A S D F C H J K L Z X C Y B N M Press RETURY to advent or press the Tobert' tooten
13	Typical	The number of attempts should decrease if a valid incorrect input is entered	The number of attempts do decrease when incorrect inputs are entered	None (10:39)	We regree X Game Z Z Submat Q W E T Y U O A S D F G X C V N M Press FETURY to advent or press the "Submat" butom! Attempts Remaining: 11
14	Typical	The gallows should update if an incorrect input is entered	The gallows do indeed update when incorrect inputs are entered	None (11:17)	We Hangman X Came Z Z Q X Submit W E R T Y U I O P A S D F G H J K L Z C V B N M Press HETUIN's submit opress the "Submit buton"
15	Typical	The gallows and number of attempts should start at either twelve, eight or six depending on difficulty	The gallows are pre-drawn or partially drawn when using medium and hard difficulties,	None (12:24)	Easy

			which is expected		₩ Hangman ×
					Submit Submit W E A S F G H J K L Z X V N Pease NETURY to advent or press file "Solent" buton
					We magned × Gana Submit Image: Submit Image: Submit </th
					W Hangman × Come Come Submit C W E R T Y U C P A S D F G H J K L Z X O V B N M Press RETURY to udont or press Re "bulon" buton
16	Typical	When the 'UsePhrases' Boolean is true, a phrase, film title or book title should be used to guess instead of a single word	This Boolean value does show either a phrase, film title or book title each time.	None (13:04)	Setup Velcome to Hangman Easy Medium Hard U Use Phrases, Movie Titles and Book Titles? Begin Scoreboard Reset Vergens Vergens Attempts Remaining: 12
17	Typical	When the number of attempts remaining reaches zero, a 'Game Over' popup should appear	A 'Game Over' popup window appears when there are no more attempts remaining	None (13:54)	Register X Conso X ZX QW Kpod The bret bit flip gase of Homgania. The above rules 100FR.c. Would you like to ettry? Q W A D F Q Press V N M Attempts Remaining: 0

18	Typical	If all the letters are the same as the word or phrase to guess, a 'You Win' popup should appear	A 'You Win' popup window appears as expected when the word or phrase is guessed	None (14:49)	Came HEAD IRBML Congratutions Vou here won this gate of fungment Vou here won the won this gate of fungment Vou here won the won t
19	Typical	When a game is won or lost, if the 'scoreboard.txt' file is empty, it should be updated to include the number of games won and lost, and should also include the word and how many attempts it took to guess	The 'scoreboard.txt' updates correctly and shows the relevant information	None (15:21)	
20	Typical	When a game is either won or lost and the 'scoreboard.txt' is not empty, it should be appended and edited to show the newly won or lost words	The 'scoreboard.txt' files updates correctly and overwrites the necessary numeric values at the top	None (16:18)	<complex-block></complex-block>
21	Extreme	If the player re- enters a letter or word, they should receive an error popup	An error popup successfully appears when the same letter or word is re- entered	None (17:20)	We Hangman × Game × Impl × Name ×

		🚆 Hangman 🛛 🕹
		[Game]
		Error ×
		TRADE Trease chose another word.
		Z X C V B N M Press RETURK to submit or press the Submit button Attempts Remaining: 11

A testing video can be found at: <u>https://www.youtube.com/watch?v=umRBDpijxOQ</u>

Hangman Evaluation

 🔡 Hangman							×	Setup	_	×
Letters								 Easy (12 Attemp Medium (8 Attem) Hard (6 Attempts Use Phrases? 	ts) ipts) s)	
						Submit			Begin	
A B C	DE	F (G H	T	JK	L	М			
N O P	QR	S	τU	۷	WX	Y	Ζ			

My original design

My original objectives were to have the gallows be displayed in a picture box, in order to give full control over drawing lines and other primitive shapes, to display letters-to-be-guessed as underscores in a label, and to display the already guessed letters/words above the incomplete word. My original testing plan was to test: the number of attempts depending on the difficulty selected, that erroneous inputs are not accepted and do not cause errors, and that a random word/phrase is picked each time with the gallows being drawn correctly.

I believe I have almost completely met the objectives I set out in my design document, albeit with some necessary design changes to improve the usability of the application. I have displayed the gallows in a picture box and used the Graphics class to draw lines and other primitive shapes to represent the gallows and the hanging man. I used underscores to represent letters-to-be-guessed and replaced the already guessed letters appropriately.

However, I did make a few changes to the User Interface that differ from my original plan. The previous guesses are displayed in a label, but the label is below the main word label. I made this change because if the user enters multiple whole word/phrase guesses, the label truncates and some of the guesses become obscured by the limits of the 'Game' group control. To fix this, I moved the previous guesses label and allowed for a lot of space below the label so that all guesses can be clearly seen. I also changed a number of other User Interface elements. I changed the background colours and the size of all text in the windows in order to abide by Jill's request in her interview: "As long as it's not that boring window grey and reads clearly...", so that the window looks more visually pleasing and is easier for people to read.

For testing, I did stay true to my original tests, but I decided to add some more tests, in order to ensure the application is completely bug-free. I believe that my original tests and the newer tests are all relevant and have helped me to successfully debug the application.

Came OO_ UEAI	Welcome to Hangman	
Submit	, ang ang	
	Easy Medium Hard Use Phrases, Movie Titles and Book Titles? Begin Scoreboard Re	set

My new design

To improve my Hangman game, I feel I could have added some form of background image to all the forms, to make them more visually appealing than a solid colour. I also think that adding other buttons to the onscreen keyboard, such as backspace, return or a spacebar, might have made typing, for Jill, a lot easier than having to constantly alternate between the onscreen keyboard and the physical keyboard. At the moment, the user can simply enter the 'scoreboard.txt' file and alter it how they please. To make this more secure, I should have made a custom class for storing user's scores and then used the

'System.Runtime.Serialization.Formatters.Binary' namespace to serialize the class into a custom binary file, thus somewhat encrypting the file.

To personalise the scoreboard, I think that giving players the ability to give themselves a name would make the game more practical for sharing scores with others. To that effect, having the contents of the file be displayed in a message box simply is simply not enough. Therefore, the creation of a new form in which players can view their scores and give themselves a nickname would be necessary. Another interesting feature might be online multiplayer, where a small "room" of players can take turns to guess a word or phrase together. This and the ability to store players' scores in a database would undoubtedly make the game more interesting.

After sending the game to one of my friends and asking him to test it, he sent this feedback: "works well, no problems, if your looking for stylistic advice id change the background colour depending on the difficulty. it gets the job done, welldone". I think that this is a valid suggestion since, at first glance, changing the difficulty does not appear to have any effect on the game – apart from parts of the gallows being drawn early.