BIRMINGHAM CITY
University

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" Super Minesweeper"

Software Development Final Project

Computing and Digital Technology School

Birmingham City University
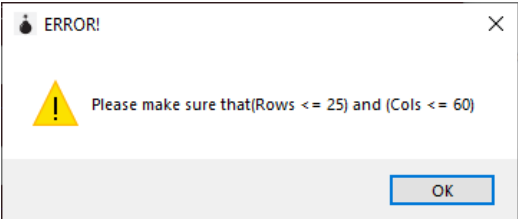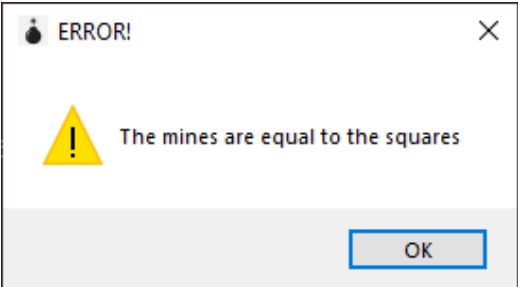
Birmingham, United Kingdom

May 2022

Minesweeper the game
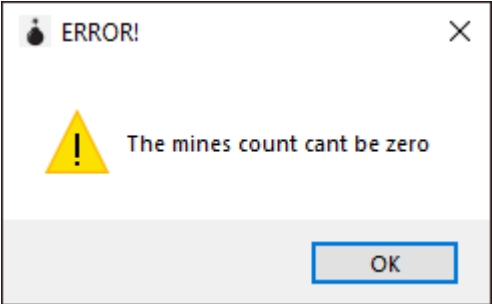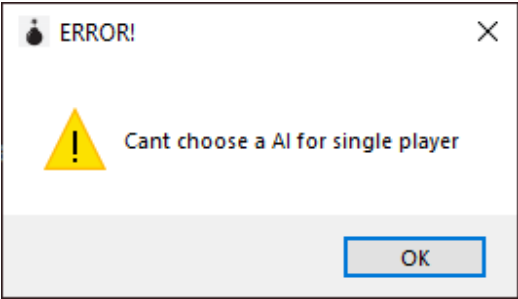
Game Description

Minesweeper is a single-player logic-based computer game played on a rectangular board in which the goal is to identify a specified number of randomly placed "mines" in the lowest amount of time by clicking on "safe" squares while avoiding mine-filled squares.
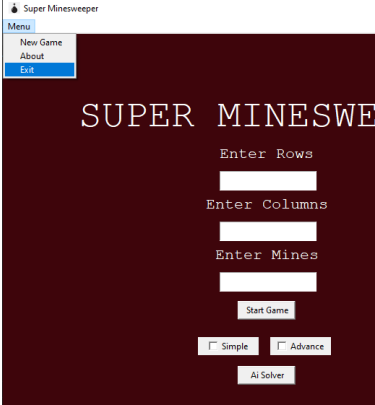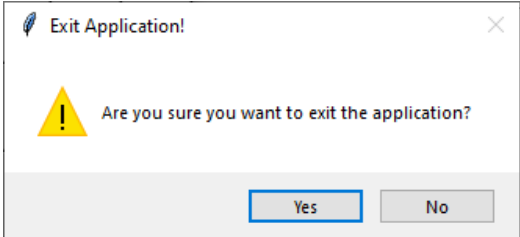
Testing Cases

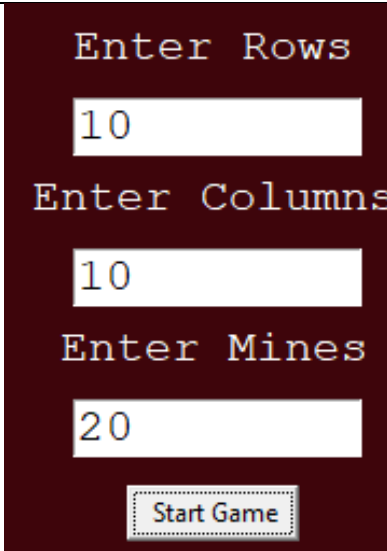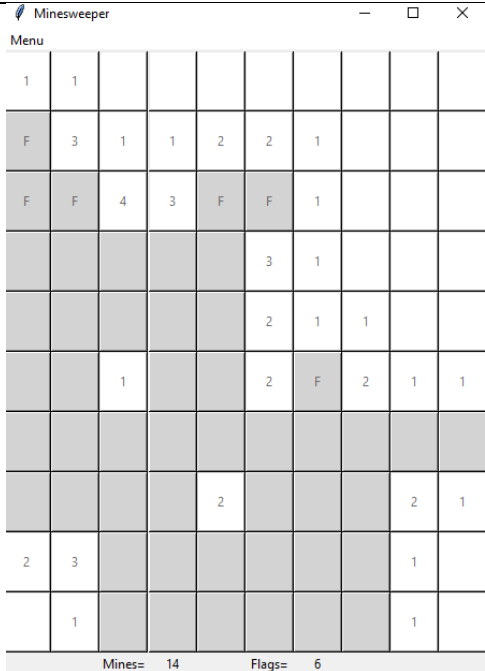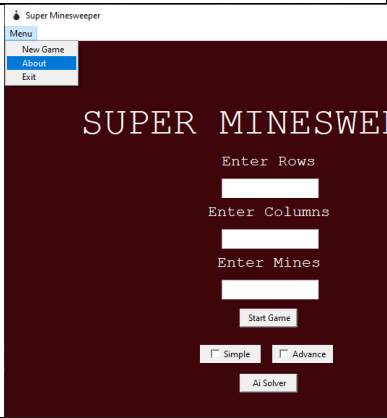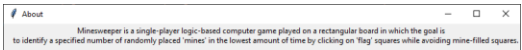| Test Case ID & Software Feature	Input	Expected output	Actual result	Passed/ Failed
TC1 - Enter rows and columns and mines any type other than integer	Enter Rows 10.5 Enter Columns kkk Enter Mines y10x Start Game ☐ Simple ☐ Advance Ai Solver	**The game won't start, and the fields will be cleared**	Enter Rows Enter Columns Enter Mines Start Game ☐ Simple ☐ Advance Ai Solver	**Passed**

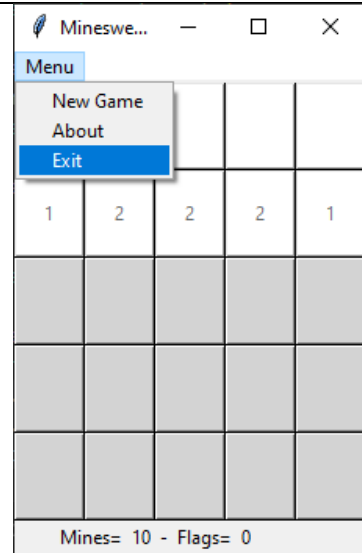|				
TC2 - Enter rows as an integer but more than 25 or/and columns more than 60	Enter Rows 30 Enter Columns 70 Enter Mines 100 Start Game ☐ Simple ☐ Advance Ai Solver	**Error message indicates that the input is wrong with explanation plus an "ok" button then after clicking the fields will be cleared**	ERROR! ✕ ⚠ Please make sure that(Rows <= 25) and (Cols <= 60) OK	**Passed**
TC3 - Enter mines count as an integer but more or equal to the total squares = (rows*columns)	Enter Rows 10 Enter Columns 10 Enter Mines 100 Start Game ☐ Simple ☐ Advance Ai Solver	**Error message indicates that the input is wrong with explanation plus an "ok" button then after clicking the fields will be cleared**	ERROR! ✕ ⚠ The mines are equal to the squares OK	**Passed**

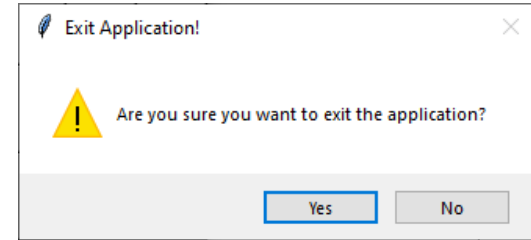|				

TC4 - Enter mines count as zero	Enter Rows
	`15`
	Enter Columns
	`20`
	Enter Mines
	`0`
	Start Game
	☐ Simple ☐ Advance
	Ai Solver
		Error message indicates that the input is wrong with explanation plus an "ok" button then after clicking the fields will be cleared	**ERROR!** ✕
			
			⚠ The mines count cant be zero
			
			OK
				Passed

TC5 - Try to start a single player game with one of the AI options selected	Enter Rows `15` Enter Columns `15` Enter Mines `15` Start Game ☐ Simple ☑ Advance Ai Solver	**Error message indicates that the input is wrong with explanation plus an "ok" button then after clicking the fields will be cleared**	**ERROR!** ✕ ⚠ Cant choose a AI for single player OK	**Passed**

TC6 – playing a single player (10 x 10) grid with 20 mines	Enter Rows 10 Enter Columns 10 Enter Mines 20 Start Game	**Full game with all the functions working**		**Passed**
TC7 – Use the drop-down menu and select About button while on main page		**A new small window will appear with the description about the game**		**Passed**

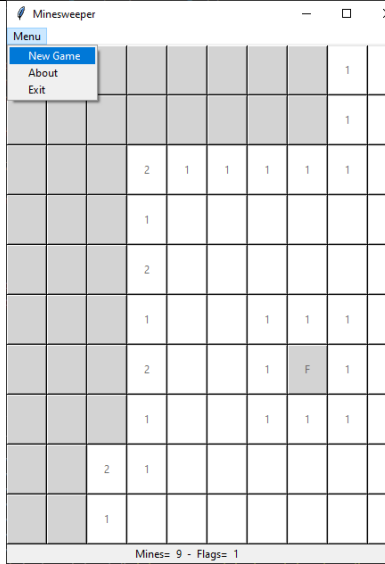|			
TC8 – Use the drop-down menu and select About button while playing		**A new small window will appear with the description about the game**	
			Passed
TC9 - Use the drop-down menu while on the main game page and select Quit button		**A popup window will appear with the option to confirm or reject the quit command** **No button will let you the game stay on the same window**	
			Passed

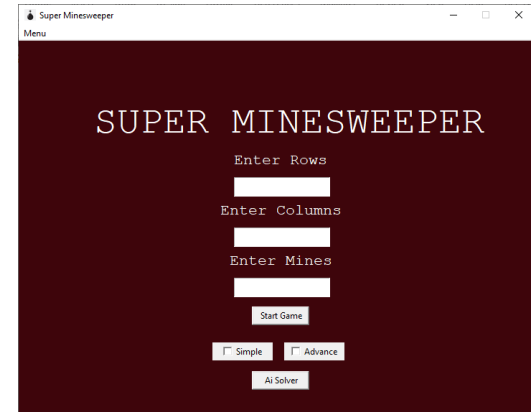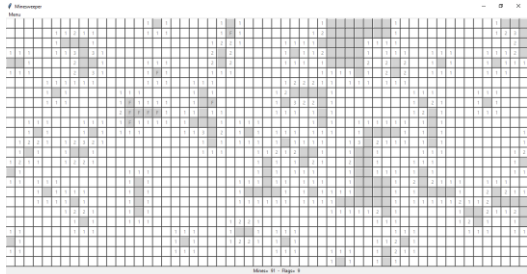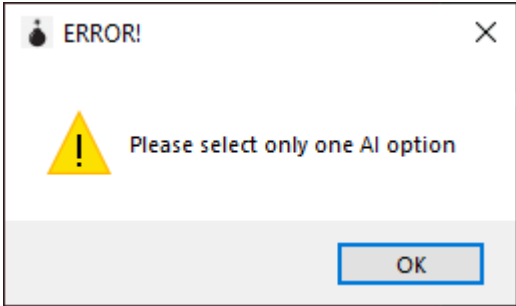|				
TC10 - Use the drop-down menu while on the main game page and select Quit button		**A popup window will appear with the option to confirm or reject the quit command** **No button will let you the game stay on same window**		**Passed**
TC11 - Use the drop-down menu while on the main game page and select new game button		**A new game will start, and the current window will close and the main window will start (Fresh Start)**		**Passed**

TC12 – Testing the full size of the grid (25 x 60)	Enter Rows 25 Enter Columns 60 Enter Mines 100 Start Game ☐ Simple ☐ Advance Ai Solver	**Full screen with no hidden squares and no breakdowns between the squares**		**Passed**
TC13 – The AI computer features cant be both selected	Enter Rows 10 Enter Columns 10 Enter Mines 20 Start Game ☑ Simple ☑ Advance Ai Solver	**A pop up error box will appear with hint that only one option must be selected**	⚫ ERROR! ✕ ⚠ Please select only one AI option OK	**Passed**

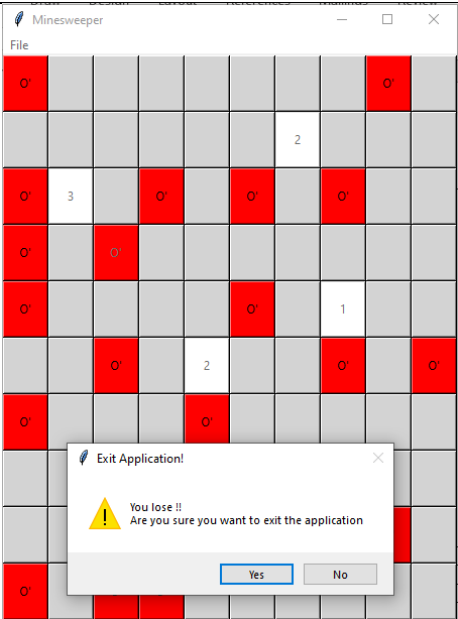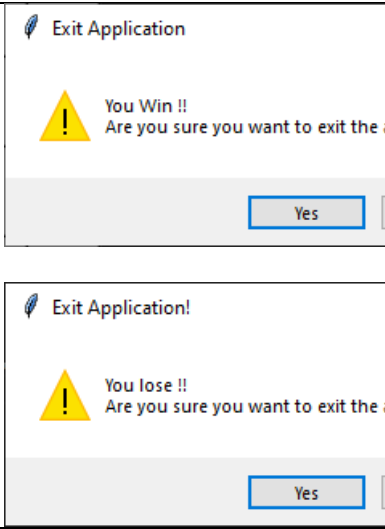| TC14 – Testing the random computer player with (10 x 10) grid and 20 mines and have a small delay between clicks | | The computer will play randomly by clicking on the squares with low chance of winning | | Passed |

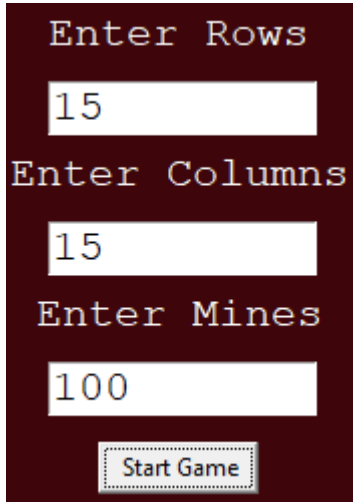|			
TC15 – Testing Advance AI with really high chance of winning when the first clicks are not mine squares With delay Grid (20 x 20) with 100 mines		**The computer will play and sign flags on mines by clicking on the squares with high chance of winning**	**Passed**
TC16 – After winning or losing you have the choice to choose if you want to quit the game or start a new one		**If you choose (No) another pop up msg will appear to till you that you will return to the starting window with (OK) button to confirm**	**Passed**
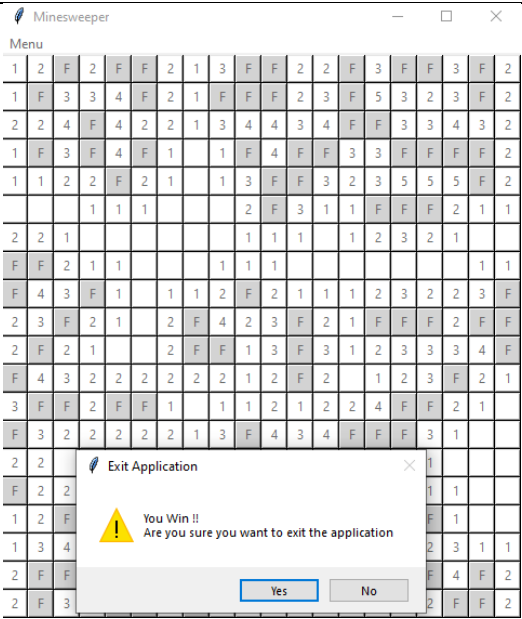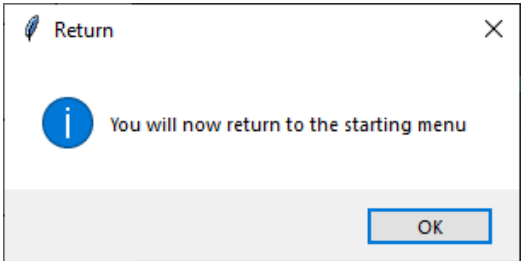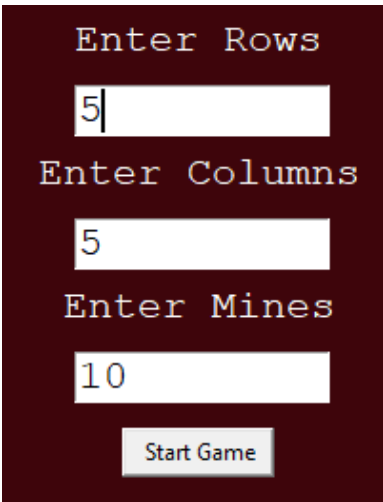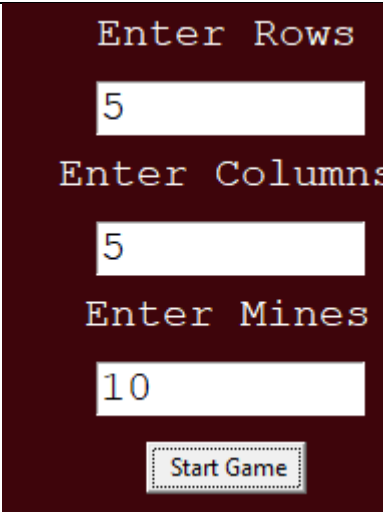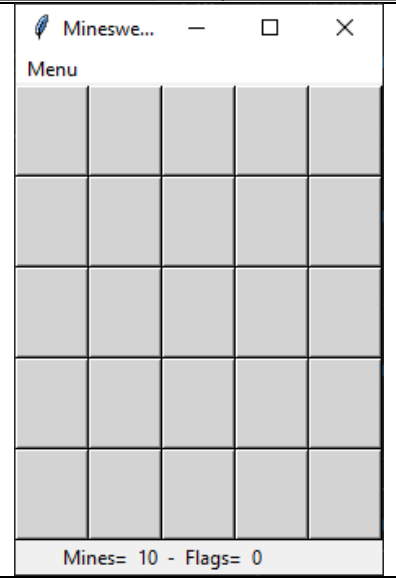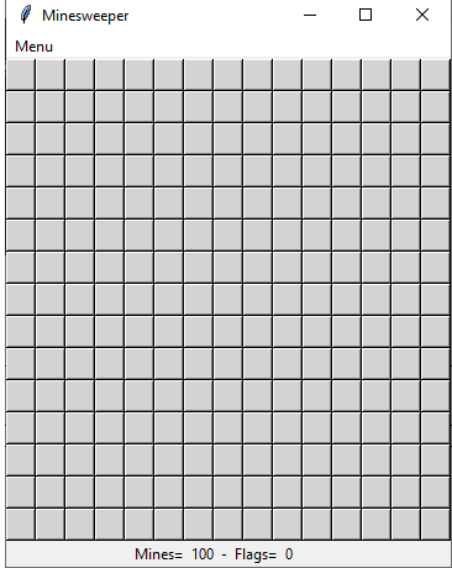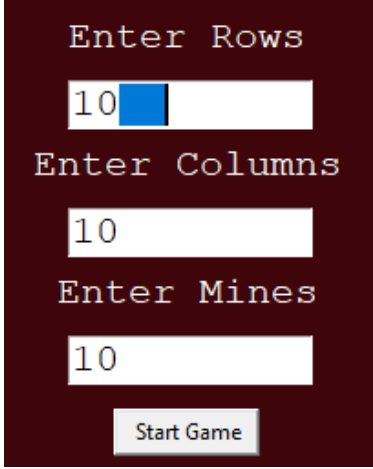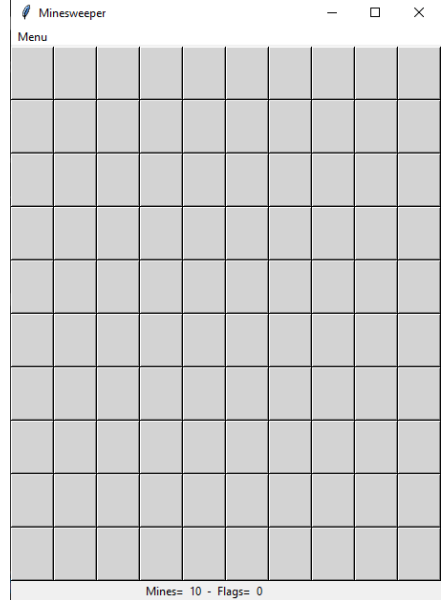
TC17 – mines count will not go below Zero even though the Flags are more than the mines	Enter Rows 5 Enter Columns 5 Enter Mines 10 Start Game	**Flags are more than 10 but mines count are capped at Zero**	Mineswe... — □ × Menu F F F F 1 F F F F F F F F F F F F F F F F Mines= 0 - Flags= 20	**Passed**
TC18 – IF the rows and cols are less than 15	Enter Rows 5 Enter Columns 5 Enter Mines 10 Start Game	**Buttons size will be (bigger)** `height=3, width=5`	Mineswe... — □ × Menu Mines= 10 - Flags= 0	**Passed**

TC19 – IF the rows and cols are equal or more than 15	Enter Rows 15 Enter Columns 15 Enter Mines 100 Start Game	**Buttons size will get smaller** `height=1, width=2`		**Passed**
TC20 – If the rows , cols and mines integer contain space after or before number	Enter Rows 10 Enter Columns 10 Enter Mines 10 Start Game	**No Errors and the game will start normal**		