System Test Plan: Connect Game

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Introduction:

All tests are executed running ConnectGame from the csc116-601-CE-02/ConnectGame/bin directory. Test files and redirected output are in the csc116-601-CE-02/ConnectGame/test_files directory.

Output for some tests can be very lengthy. The expected results only include the information required for determining if the test passes. Usually, this will be the end of the output unless the test specifically requires intermediate checks.

Test Files: Used for console input

test Create Eight By Eight Board.txt

test Create Ten By Ten Board. txt

test Create Twelve By Twelve Board.txt

testThirdArgument.txt

testFourthArgument.txt

testInvalidInputString.txt

testInvalidInputZero.txt

testInvalidInputGreaterThan.txt

testAddPieceToFullColumn

testValidInputPlayer1.txt

testValidInputPlayer2.txt

testIncrementLongestConnect.txt

testMaxContiguousHorizontalAndVerticaltxt

testMaxContiguousDiagonal.txt

testVerticalVictory.txt

testHorizontalVictory.txt

testForwardSlashVictory.txt

testBackSlashVictory.txt

testExtraLongHorizontalVictory.txt

testExtraLongDiagonalVictory.txt

testDraw.txt

testStartNewGameError.txt

testStartNewGameNo.txt

testStartNewGameYes.txt

testMultiGameStatIncrease.txt

Output corresponding to these input files is piped to files with the same name prefixed with output.

Test Cases:

Test ID	Description	Expected Results	Actual Results
testCreateEigh	\$ java ConnectGame 4	Welcome to Connect Four	As expected:
tByEightBoard	Player1 Player2	Player1 plays first with symbol X	, is expected.
15,1.8500.0	,	Player2 plays next with symbol O	See
Author:	(display game board)	.,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	/test_files/output_testCreateEightByEigh
Christine Weld	(display game board)	1 2 3 4 5 6 7 8	tBoard.txt
	Enter the column to place your X piece (1 - 8): q		
		Player Player1 (X) has 0 connected	
		pieces.	
		Enter the column to place your X piece (1	
		to 8) or q to quit:	
	1	Thank you for playing today. Good bye!	
testCreateTen	\$ java ConnectGame 5	Welcome to Connect Five	As expected:
ByTenBoard	Player1 Player2	Player1 plays first with symbol X	Coo
Author: Christine Weld	(display game board)	Player2 plays next with symbol O	See /test_files/output_testCreateTenByTenB oard.txt
	Enter the column to	1 2 3 4 5 6 7 8 9 10	
	place your X piece (1 to		
	10) or q to quit: q		
	10) of q to quit. q	_ _ _ _ _	
		- - - - - - - -	
		'-'-'-'-'-'-'-'-'-'	
		'-'-'-'-'-'-'-'-	
		_ _ _ _ _ _ _ _	
		- - - - - - -	
		Player Player1 (X) has 0 connected	
		pieces.	
		Enter the column to place your X piece (1	
		to 10) or q to quit:	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testCreateTwe	\$ java ConnectGame 6	Welcome to Connect Six	As expected:
lveByTwelveB	Player1 Player2	Player1 plays first with symbol X	
oard	/diamless serves becaud)	Player2 plays next with symbol O	See
Author:	(display game board)		/test_files/output_testCreateTwelveByT welveBoard.txt
Christine Weld	Enter the column to	1 2 3 4 5 6 7 8 9101112	welveboard.txt
	place your X piece (1 to	_ _ _ _ _ _	
	12) or q to quit: q		
		- - - - - - - - -	
		- - - - - - - - -	
		'-'-'-'-'-'-'-'-'-'-'-'	
		'-'-'-'-	
		Player Player1 (X) has 0 connected	
		pieces.	
		Enter the column to place your X piece (1	
		to 12) or q to quit:	
		Thank you for playing today. Good bye!	
testInvalidGa	\$ java ConnectGame 3	Usage: java ConnectGame (4 - 6) player1	As expected:
meSizeSmall		player2	
Author:			Usage: java ConnectGame (4 - 6) player1 player2
Christine Weld			player2
testInvalidGa meSizeLarge	\$ java ConnectGame 7	Usage: java ConnectGame (4 - 6) player1 player2	As expected:
IllesizeLarge		player 2	Usage: java ConnectGame (4 - 6) player1
Author:			player2
Christine Weld			
testInvalidFirst	\$ java ConnectGame X	Usage: java ConnectGame (4 - 6) player1	As expected:
Argument	+ jara somicocounic A	player2	
			Usage: java ConnectGame (4 - 6) player1
Author: Christine Weld			player2
Ciristine weid			
testSecondArg	\$ java ConnectGame 4	Usage: java ConnectGame (4 - 6) player1	As expected:
ument	Alpha	player2	
Author:			Usage: java ConnectGame (4 - 6) player1 player2
Christine Weld			piayei 2

Test ID	Description	Expected Results	Actual Results
testThirdArgu	\$ java ConnectGame 4		As expected:
ment	Alpha Beta	Player Alpha (X) has 0 connected pieces.	
		Enter the column to place your X piece (1	See
Author:	Enter the column to	to 8) or q to quit:	/test_files/output_testThirdArgument.txt
Christine Weld	place your X piece (1 -	1 2 3 4 5 6 7 8	
	8): 1	_ _ _ _ _	
	(display game board) Enter the column to	- - - - - - - - - - - - - - - - - -	
	place your O piece (1	_ _ _ _ _	
	to 8) or q to quit: q	X _ _ _ _	
		Player Beta (O) has 0 connected pieces. Enter the column to place your O piece (1 to 8) or q to quit: Thank you for playing today. Good bye!	
testFourthArg	\$ java ConnectGame 4		As expected:
ument	Alpha Beta Gamma	1 2 3 4 5 6 7 8	,
		_ _ _ _ _	See
Author:	Enter the column to	_ _ _ _ _	/test_files/output_testFourthArgument.t
Christine Weld	place your X piece (1 -	- - - - - - -	xt
	8): 1	_ _ _ _ _ _	
	(display game board)		
	Enter the column to		
	place your O piece (1	Player Beta (O) has 0 connected pieces.	
	to 8) or q to quit: q	Enter the column to place your O piece	
		(1 to 8) or q to quit:	
		Thank you for playing today. Good bye!	
		, , , , , , , , , , , , , , , , , , , ,	
		(Any more than three command line	
		arguments are ignored)	
testInvalidInp	\$ java ConnectGame 4		As expected:
utString	Player1 Player2	Player Player1 (X) has 0 connected	
		pieces.	See
Author:	Enter the column to	Enter the column to place your X piece (1	/test_files/output_testInvalidInputString.
Christine Weld	place your X piece (1 to	to 8) or q to quit:	txt
	8) or q to quit: abc	Not a number, please try again.	
		Enter the column to place your X piece (1	
	Enter the column to	to 8) or q to quit:	
	place your X piece (1 to		
	8) or q to quit: q	Thank you for playing today. Good bye!	
	l	, , , , , , , , , , , , , , , , , , , ,	L

Test ID	Description	Expected Results	Actual Results
testInvalidInp	\$ java ConnectGame 4		As expected:
utZero	Player1 Player2	Player Player1 (X) has 0 connected	, to expected.
		pieces.	See
Author:	Enter the column to	·	/test_files/output_testInvalidInputZero.t
Christine Weld	place your X piece (1 to	Enter the column to place your X piece (1	xt
	8) or q to quit: 0	to 8) or q to quit:	
		Invalid column number, please try again.	
	Enter the column to	Enter the column to place your X piece (1	
	place your X piece (1 to	to 8) or q to quit:	
	8) or q to quit: q		
		Thank you for playing today. Good bye!	
testInvalidInp	\$ java ConnectGame 4		As expected:
utGreaterThan	Player1 Player2	Player Player1 (X) has 0 connected	
		pieces.	See
Author:	Enter the column to	Enter the column to place your X piece (1	/test_files/output_testInvalidInputGreat
Christine Weld	place your X piece (1 to	to 8) or q to quit:	erThan.txt
	8) or q to quit: 13	Invalid column number, please try again.	
		Enter the column to place your X piece (1	
	Enter the column to	to 8) or q to quit:	
	place your X piece (1 to		
	8) or q to quit: q	Thank you for playing today. Good bye!	
testAddPieceT	\$ java ConnectGame 4		As expected:
oFullColumn	Player1 Player2	1 2 3 4 5 6 7 8	
		0 _ _ _ _	See
Author:	Player1: 1, Player2: 1,	<u> </u>	/test_files/output_testAddPieceToFullCol
Christine Weld	Player1: 1, Player2: 1,	0 _ _ _ _	umn.txt
	Player1: 1, Player2: 1, Player1: 1, Player2: 1	X _ _ _ _ _ 0	
	Player 1. 1, Player 2. 1		
	Enter the column to	10	
	place your X piece (1 to		
	8) or q to quit: 1		
		Player Player1 (X) has 1 connected	
	Enter the column to	pieces.	
		Enter the column to place your X piece (1	
	place your X piece (1 to	to 8) or q to quit:	
	8) or q to quit: q	Sorry, that column is full, please try	
		again:	
		Player Player1 (X) has 1 connected	
		pieces.	
		Enter the column to place your X piece (1	
		to 8) or q to quit:	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testValidInput	\$ java ConnectGame 4		As expected:
Player1	Player1 Player2	Player Player1 (X) has 0 connected	7.5 expected.
1.0,0.2	,	pieces.	See
Author:	Enter the column to	Enter the column to place your X piece (1	/test_files/output_testValidInputPlayer1.
Christine Weld		to 8) or q to quit:	txt
Christine Weid	place your X piece (1 - 8): 4 (display game board) Enter the column to place your O piece (1 to 8) or q to quit q	1 2 3 4 5 6 7 8 _ _ _ _ _ _ _ _ _	
		Thank you for playing today. Good bye!	
testValidInput	Using previous test		As expected:
Player2	input	Player Player2 (O) has 0 connected	6
A	Fortantles asluments	pieces.	See
Author:	Enter the column to	Enter the column to place your O piece	/test_files/output_testValidInputPlayer2.
Christine Weld	place your O piece (1 -	(1 to 8) or q to quit:	txt
	8): 2 Enter the column to place your X piece (1 - 8): q	1 2 3 4 5 6 7 8 _ _ _ _ _ _ _ _ _	
		Player Player1 (X) has 1 connected	
		pieces.	
		Enter the column to place your X piece (1	
		to 8) or q to quit:	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
Test ID testIncrement LongestConne ct Author: Christine Weld	Player1: 1, Player2: 2 (display game board) Player1: Enter the column to place your X piece (1 - 8): q	Player Player2 (O) has 2 connected pieces. Enter the column to place your O piece (1 to 8) or q to quit: 1 2 3 4 5 6 7 8 _ _ _ _ _ _ _ _ _	As expected: See /test_files/output_testIncrementLongest Connect.txt
		x 0 _ _ _	
		pieces. Enter the column to place your X piece (1 to 8) or q to quit: Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testMaxContig	\$ java ConnectGame 6		As expected:
uousHorizonta	Player1 Player2	1 2 3 4 5 6 7 8 9 10 11 12	
IAndVertical Author: Christine Weld	Player1: 1, Player2: 8, Player1: 2, Player2: 9, Player1: 3, Player2: 9 Player1: 5, Player2: 11, Player1: 6, Player2: 11 (display game board)		See /test_files/output_testMaxContiguousHo rizontalAndVertical.txt
	Enter the column to place your X piece (1 - 8): 4 (display game board) Would you like to play again (y/n)? n	Player Player1 (X) has 3 connected pieces. Enter the column to place your X piece (1 to 12) or q to quit: 1 2 3 4 5 6 7 8 9 10 11 12 _ _ _ _ _ _ _ _ _	

Test ID	Description	Expected Results	Actual Results
testMaxContig	\$ java ConnectGame 4		As expected:
uousDiagonal	Player1 Player2	12345678	
			See
Author:	Player1: 1, Player2: 2,		/test_files/output_testMaxContiguousDi
Christine Weld	Player1: 2, Player2: 3,	'	agonal.txt
	Player1: 3, Player2: 6	'-'-'-'-'-'-'-'	
	Player1: 3, Player2: 6	'-'-'-'-'-'-'-'	
	Enter the column to		
	place your X piece (1 -	- - - - - - - - _ X X _ _ _ _	
	8): 3		
	0). 3		
	(display game board)	Player Player1 (X) has 3 connected	
	(display game board)	pieces.	
	Enter the column to	Enter the column to place your X piece (1	
	place your X piece (1 -	to 8) or q to quit:	
	8): q		
	0). प	The plane for planing to day. Cood by al	
	Å: 0 10 A	Thank you for playing today. Good bye!	
testVerticalVic	\$ java ConnectGame 4 Player1 Player2		As expected:
tory	Flayeri Flayer2	1 2 3 4 5 6 7 8	See
Author:	Player1: 1, Player2: 2,	- - - - - -	/test_files/output_testVerticalVictory.txt
Christine Weld	Player1: 1, Player2: 2,	- - - - - -	
	Player1: 1, Player2: 2	- - - - - -	
		_ _ _ _ _	
	Enter the column to	X _ _ _ _ _	
	place your X piece (1 -	X 0 _ _ _ _	
	8): 1		
		X O _ _ _ _	
	(display game board)		
		Player1 wins!	
	Would you like to play	Wins Losses Draw	
	again (y/n)? n	Wins Losses Draw Player1: 1 0 0	
		Player2: 0 1 0	
		Would you like to play again (y/n)?	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testHorizontal	\$ java ConnectGame 4		As expected:
Victory	Player1 Player2	12345678	·
	ļ ′		See
Author:	Player1: 2, Player2: 1,	'-'-'-'-'-'-'-'	/test_files/output_testHorizontalVictory.t
Christine Weld	Player1: 3, Player2: 1,		xt
	Player1: 4, Player2: 1		
		- - - - - -	
	Enter the column to		
	place your X piece (1 -		
	8): 5		
	(display game board)		
		Player1 wins!	
	Would you like to play		
	again (y/n)? n	Wins Losses Draw	
		Player1: 1 0 0	
		Player2: 0 1 0	
		Would you like to play again (y/n)?	
		would you like to play again (y/11):	
		Thank you for playing today. Good bye!	
testForwardSl	\$ java ConnectGame 4		As expected:
ashVictory	Player1 Player2	1 2 3 4 5 6 7 8	
_			See
Author:	Player1: 1, Player2: 2,		/test_files/output_testForwardSlashVicto
Christine Weld	Player1: 2, Player2: 3,		ry.txt
	Player1: 3, Player2: 4, Player1: 3, Player2: 4,		
	Player1: 1, Player2: 4		
	Trayers. 1, Frayers. 4	_ _ X O _ _	
	Enter the column to	x x x o _ _ _	
	place your X piece (1 -	x 0 0 0 _ _ _	
	8): 4		
	,	Player1 wins!	
	(display game board)	1.675.2 11113.	
	, , , , , , ,	Wins Losses Draw	
	Would you like to play	Player1: 1 0 0	
	again (y/n)? n	Player2: 0 1 0	
		Would you like to play again (y/n)?	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testBackSlash	\$ java ConnectGame 4		As expected:
Victory	Player1 Player2	12345678	
			See
Author:	Player1: 4, Player2: 3,	'-'-'-'-'-'-'-'	/test_files/output_testBackSlashVictory.t
Christine Weld	Player1: 3, Player2: 2,	_ _ _ _ _ _	xt
	Player1: 2, Player2: 1,	- - - - - -	
	Player1: 2, Player2: 1,		
	Player1: 4, Player2: 1	X _ _ _ _ _	
		0 X _ _ _ _	
	Enter the column to	O X X X _ _ _	
	place your X piece (1 -	0 0 0 X _ _ _	
	8): 1		
		Player1 wins!	
	(display game board)		
		Wins Losses Draw	
	Would you like to play	Player1: 1 0 0	
	again (y/n)? n	Player2: 0 1 0	
		Would you like to play again (y/n)?	
		The plane for planing to day. Cood by al	
testExtraLong	\$ java ConnectGame 4	Thank you for playing today. Good bye!	As expected:
HorizontalVict	Player1 Player2	12245670	As expected.
ory	- Trayer 1 Trayer 2	1 2 3 4 5 6 7 8	See
,	Player1: 1, Player2: 1,	- - - - - -	/test_files/output_testExtraLongHorizont
Author:	Player1: 2, Player2: 2,	- - - - - - -	alVictory.txt
Christine Weld	Player1: 3, Player2: 3,		·
	Player1: 5, Player2: 5	_ _ _ _ _	
		_ _ _ _ _	
	Enter the column to	_ _ _ _ _	
	place your X piece (1 -	0 0 0 _ 0 _ _	
	8): 4	X X X X X _ _	
	(display game board)	Player1 wins!	
	Would you like to play	Wins Losses Draw	
	again (y/n)? n	Player1: 1 0 0	
		Player2: 0 1 0	
		Would you like to play again (y/n)?	
		vvodia you like to play agail (y/11):	
		Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
Test ID testExtraLong DiagonalVictor y Author: Christine Weld	\$ java ConnectGame 4 Player1 Player2 Player1: 1, Player2: 2, Player1: 2, Player2: 3, Player1: 4, Player2: 3, Player1: 3, Player2: 4, Player1: 5, Player2: 5 Player1: 5, Player2: 5 Player1: 5, Player2: 6 Player1: 4, Player2: 7 Enter the column to place your X piece (1 - 8): 4 (display game board)	1 2 3 4 5 6 7 8 - - - - - - - - - - - - - - - -	Actual Results As expected: See /test_files/output_testExtraLongDiagona IVictory.txt
	Would you like to play again (y/n)? n	Would you like to play again (y/n)? Thank you for playing today. Good bye!	

Test ID	Description	Expected Results	Actual Results
testDraw	\$ java ConnectGame 4	•	As expected:
	Player1 Player2	1 2 3 4 5 6 7 8	
Author:	, ,		See /test_files/output_testDraw.txt
Christine Weld	Player1: 1, Player2: 2		' - ' ' -
	Player1: 1, Player2: 2		
	Player1: 1, Player2: 2		
	Player1: 2, Player2: 1		
	Player1: 2, Player2: 1		
	Player1: 2, Player2: 1	x 0 x 0 x 0	
	Player1: 1, Player2: 2		
	Player1: 1, Player2: 2		
	Player1: 3, Player2: 4		
	Player1: 3, Player2: 4		
	Player1: 3, Player2: 4		
	Player1: 4, Player2: 3	It's a draw!	
	Player1: 4, Player2: 3		
	Player1: 4, Player2: 3	Wins Losses Draw	
	Player1: 3, Player2: 4	Player1: 0 0 1	
	Player1: 3, Player2: 4	Player2: 0 0 1	
	Player1: 5, Player2: 6		
	Player1: 5, Player2: 6	Would you like to play again (y/n)?	
	Player1: 5, Player2: 6		
	Player1: 6, Player2: 5	Thank you for playing today. Good bye!	
	Player1: 6, Player2: 5		
	Player1: 6, Player2: 5		
	Player1: 5, Player2: 6		
	Player1: 5, Player2: 6		
	Player1: 7, Player2: 8		
	Player1: 7, Player2: 8		
	Player1: 7, Player2: 8 Player1: 8, Player2: 7		
	Player1: 8, Player2: 7		
	Player1: 8, Player2: 7		
	Player1: 7, Player2: 8		
	Player1: 7, Player2: 8		
	riayeri. 7, Flayeri. 0		
	Would you like to play		
	again (y/n)? n		
testStartNewG	\$ java ConnectGame 4		As expected:
ameError	Player1 Player2	Would you like to play again (y/n)?	
	.,	Unrecognized response Boo, please enter	See
Author:	Player1: 1, Player2: 2,	y or n.	/test_files/output_testStartNewGameErr
Christine Weld	Player1: 1, Player2: 2,	,	or.txt
	Player1: 1, Player2: 2		
	Enter the column to		
	place your X piece (1 -		
	8): 1		
	, . .		
	Would you like to play		
	again (y/n)? Boo		
	again (y/n/: buu		

Test ID	Description	Expected Results	Actual Results
testStartNewG ameNo	Using the previous test input	 Player1 wins!	As expected:
Author: Christine Weld	Would you like to play again (y/n)? n	Wins Losses Draw Player1: 1 0 0 Player2: 0 1 0	See /test_files/output_testStartNewGameNo .txt
		Would you like to play again (y/n)? Thank you for playing today. Good bye!	
testStartNewG ameYes	Using the previous test input	Would you like to play again (y/n)?	As expected:
Author: Christine Weld	Would you like to play again (y/n)? Yes (display game board) Enter the column to place your O piece (1 - 8): q	1 2 3 4 5 6 7 8 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	See /test_files/output_testStartNewGameYes .txt
		Player Player2 (O) has 0 connected pieces. Enter the column to place your O piece (1 to 8) or q to quit: Thank you for playing today. Good bye!	
		(Second player starts second game)	

Test ID	Description	Expected Results	Actual Results
testMultiGam eStatIncrease	Using the previous test input twice	 Player1 wins!	As expected:
Author: Christine Weld	Would you like to play again (y/n)? Yes (display game board) Enter the column to place your O piece (1 - 8): q	Wins Losses Draw Player1: 2 0 0 Player2: 0 2 0 Would you like to play again (y/n)? 1 2 3 4 5 6 7 8 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	/test_files/output_testMultiGameStatInc rease.txt