



Ontario Tech University (UOIT)
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Principles of Software and Requirements (SOFE 2720)

Major Project | Deliverable #3 | Document of Integration Tests

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Integration testing

Note: Get and Set -BoardIndexValue functions are in the same Integration test with another function as they work parallel to each other, without GetBoardIndexValue you cannot SetBoardIndexValue. Even though they are separate functions they are used together. Same with Row/Column Swap Functions

Integration Test 1

Testing RandomNumberGenerator function integration with ColumnSwap and RowSwap functions.

According to Unit Test of RandomNumberGenerator function,

RandomNumberGenerator function works as instructed to:

Successfully generates random number such that it is less than equal to the max when called.

According to Integration Testing of RandomNumberGenerator function integrated with ColumnSwap and RowSwap functions.

ColumnSwap and RowSwap functions integrated with RandomNumberGenerator work together as expected:

Both successfully define 2 variables and set their values equal to a random number provided by the integrated function RandomNumberGenerator, Both functions successfully check if variables have equal values if so the variable values are randomly generated again by the RandomNumberGenerator function.

Overall The Integration Testing of RandomNumberGenerator, Row/ColumnSwap functions are a success, thus approved.

Integration Test 2

Testing Change function Integration with GenerateTable function.

According to Unit Test of Change function ,

Change works as expected to:

It successfully detects user input and responds accordingly.

It successfully checks if the user has won the game or not.

According to Integration Testing of change function integrated with GenerateTable function.

Both work together as planned:

When table has already been generated, there are drop down selection input types on each square of the 9 by 9 table, when clicked on drops down a list of selection options and upon selection the input method will acknowledge that change has been made and calls the change function. When this happens the change will first check the row and column and 3 by 3 box to see if input is valid. If it is it will be inputted into the square. This scenario happens successfully.

Overall The Integration Testing of Change and GenerateTable function are a success, thus approved.

Integration Test 3

Testing RandomNumberGenerator function Integration with OpenSeveral function.

According to Unit Test of RandomNumberGenerator function,

RandomNumberGenerator works as instructed to:

Successfully generates random number such that it is less than equal to the max when called.

According to Integration Testing of RandomNumberGenerator integrated with OpenSeveral.

Both work together as planned:

Function successfully generates random fixed values pre-filled at the start of the sudoku game, up to a cap, the cap is defined by the variable many and it successfully limits the amount of pre - filled values.

Overall The Integration Testing of RandomNumberGenerator and OpenSeveral functions are a success, thus approved.

Integration Test 4

Testing GetQuadrantData function Integration with Change function.

According to Unit Test of GetQuadrantData function,

GetQuadrantData function works as instructed to:

Successfully returns the quadrant row and quadrant column of the given row and column

According to Integration Testing of GetQuadrantData function integrated with Change function.

Both work together as planned:

Function change when called to change the value of a row and column / square of 9 by 9 table it needs to look at what quadrant of the sudoku game as there are 3 by 3 quadrants or 9 quadrants. Look if the Quadrant it is in has the value already thus providing a pop up message. This integration work as a success.

Overall The Integration Testing of GetQuadrantData and Change function are a success, thus approved.

Integration Test 5

Testing RowSwap and ColumnSwap function Integration with GenerateBoard function.

According to Unit Test of RowSwap and ColumnSwap functions,

They both work as instructed to:

Successfully makes a Row Swap / Column Swap on the board.

According to Integration Testing of RowSwap and ColumnSwap functions integrated with GenerateBoard function.

Both work together as planned:

Function GenerateBoard when called to set up the Sudoku Board game and Define the Board of the game, it needs to perform column swaps and rows swaps each 100 times. When the function calls the integrated functions RowSwap and ColumnSwap it swaps the rows and columns to generate a new exciting board to play with each time and it does so successfully.

Overall The Integration Testing of RowSwap and ColumnSwap and GenerateBoard function are a success, thus approved.

Integration Test 6

Testing GetBoardIndexValue and SetBoardIndexValue functions Integration with RowSwap and ColumnSwap functions.

According to Unit Test of GetBoardIndexValue and SetBoardIndexValue functions,

They both work as instructed to:

SetBoardIndexValue successfully sets a particular square of table to a certain value.

GetBoardIndexValue successfully gets the value at a particular square of the puzzle

The GetBoardIndexValue helps with SetBoardIndexValue.

According to Integration Testing of SetBoardIndexValue and GetBoardIndexValue functions integrated with RowSwap and ColumnSwap functions.

Both work together as planned:

Function RowSwap and ColumnSwap when called to swap a column or swap a row successfully use GetBoardIndexValue to create a temporary value with that index, once that is completed the functions RowSwap and ColumnSwap setBoardIndexValue to the rows/columns being swapped, thus it is swapping the values from one row/column to another row/column using the GetBoardIndexValue for location.

Overall The Integration Testing of GetBoardIndexValue and SetBoardIndexValue and RowSwap and ColumnSwap functions are a success, thus approved.