15 Game

You may recall the popular game where 15 tiles are arranged in a four-by-four layout, and one space is open. The player’s objective is to arrange the numbered tiles in numerical sequence from 1 to 15, by moving tiles into the open space.

Write a program that uses a StringGrid to play the 15-game. The game must include the following features:

* The board is randomly arranged at the start.
* Buttons allow the player to restart and quit the game.
* Score is kept of the number of moves taken by the user to arrange the sequence correctly. The player must use as few moves as possible to arrange the tiles.
* Cheating must not be allowed. Only tiles adjacent to the open space can be moved.

In the game, the block to be moved is clicked. There is only one cell to move to: the empty one. You need to keep a variable to hold the values of X and Y for the empty cell. When a block is clicked, your program checks to see if the stored values are only one away from the given cells. If this is correct, it moves the cell, then updates the values of X and Y for the now empty cell.

Step 1: Design the screen for the game. Consider all the buttons a user needs to play. Draw a rough sketch of the screen layout, labeling each object.

Step 2: Write algorithms to perform each of the actions the user performs. One algorithm per button/event is required.

Step 3: Create an instruction sheet for the player. Type up user instructions, the capabilities of the hardware required, etc. About a page should do it.

Step 4: Write and test the program. Write and test as you gol don’t write huge chunks of code, then try to debug it.

Step 5: Hand in the source code, and the manuals/instructions sheet for marks.