Knight on the Chess Board

Can the chess piece called the knight move around an empty chessboard and touch each of the 64 squares once and only once?

The knight makes L-shaped moves (over two in one direction and then over one in a perpendicular direction). Thus, from a square in the middle of an empty chessboard, the knight can make eight different moves (numbered 0 through 7) as shown below.

Programming Problem:

Develop a program that will move the knight around a chessboard. The board is represented by an 8-by-8 2D array **board**. Each of the squares is initialized to zero. We describe each of the possible moves in terms of both their horizontal and vertical components. For example, a move of type 0 as shown below consists of moving two squares horizontally to the right and one square vertically upward. Move 2 consists of moving one square horizontally to the left and two squares vertically upward. Horizontal moves to the left and vertical moves upward are indicated with negative numbers. The `horizontal[]` and `vertical[]` arrays indicate the *change* in the knights current position on the `board[][]`. You should also check to make sure your knight does not move off the board, which would give you an out-of-bounds error.

(Note: your screen will not look like this, these are your available moves)

	0	1	2	3	4	5	6	7
0								
1				2		1		
2			3				0	
3					K			
4			4				7	
5				5		6		
6								
7								

horizontal [0] = 2
horizontal [1] = 1
horizontal [2] = -1
horizontal [3] = -2
horizontal [4] = -2
horizontal [5] = -1
horizontal [6] = 1
horizontal [7] = 2

Vertical [0] = -1
Vertical [1] = -2
Vertical [2] = -2
Vertical [3] = -1
Vertical [4] = 1
Vertical [5] = 2
Vertical [6] = 2
Vertical [7] = 1

Keep a counter that counts up to 64. Record the latest count in each square the knight moves to. Remember to test each potential move to see if the knight has already visited that square, and test every potential move to make sure that the knight does not land off the chessboard.

Display the chess board placing the numbers 1 – 64 in each of the spaces as the knight makes its moves. For example pace a 1 in the starting position of the knight, place a 2 in the knights second spot, 3 in its third spot and so on. The game should end when the knight either lands on all 64 spaces of the chess board, or can not longer make any moves.