CLASSICAL AND QUANTUM COMPUTING
EXERCISE XVII

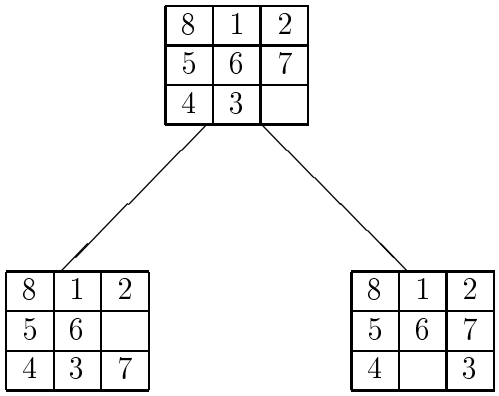
Consider the eight puzzle depicted in the figure below. This is a familiar game with eight tiles arranged in a 3-by-3 configuration with one open square. Tiles can be moved up, down, left or right into the open square, creating a new open square in the space that is vacated. The problem is to find a sequence of moves that convert the initial scrambled configuration of tiles into a goal configuration in which the tiles are arranged in numerical order. The brute force method would be to use trees to obtain all possible configurations.

6	1	2
5	8	7
4	3	

Initial configuration

1	2	3
8		4
7	6	5

Goal configuration



Write a C++ program which finds the solution by expanding the tree.