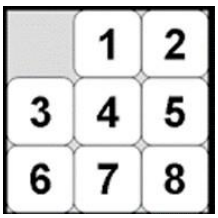
Assignment 1

The 8-puzzle sliding block consists of a 3X3 board with 8 numbered tiles and a blank space. A tile adjacent to the blank space can slide into the space. A state description specifies the location of each of the eight tiles and the blank in one of the nine squares. An example state of the puzzle is shown here.

The object is to reach the specified state called goal state. On such goal state is shown here.



One has to slide the blank space from tile to another slide starting from initiate state to the end state called goal state.

(a) Using the following search algorithms how do reach the goal state from initial state? Clearly show all the successors generated and mark the path.

(1) Breadth first search algorithm
(2) Depth first search algorithm
(3) Depth first iterative deepening search

(b) Draw the comparative table with the following parameters for the above search algorithms: No. successors generated to reach goal state, total cost, path cost and search cost.

Assumptions:

1. You can choose your own initiate state and end state.
2. The path length must be >5

Due date of submission: **5th November.**