CS 411 - Artificial Intelligence I
Fall 2018
Assignment 7
Department of Computer Science, University of Illinois at Chicago

Write a program which performs iterative deepening a-star (IDA*) search to find the solution to any given board position for 15 puzzle using two types of heuristics:

1. **Number of misplaced tiles**
2. **Manhattan Distance**

https://en.wikipedia.org/wiki/Iterative_deepening_A*

Input
The input should be given in form of a sequence of numbered tiles for initial board configuration, '0' indicating the empty space (see example below)

Output

1. Moves
2. Number of Nodes expanded
3. TIme Taken
4. Memory Used

Submission
Please submit a zip file with filename <netid>_idastar.zip including following files:

- Source Code
- Readme.txt including instruction to run the code

Programming Language
You can choose from C++, Java or Python

Rubric
Implement ida* search with heuristic 'number of misplaced tile' => 6
Implement ida* search with heuristic 'manhattan distance' => 6
Print the moves to reach the solution => 3
Print number of nodes expanded => 2
Print total memory usage => 2

Print total time taken => 2
Coding style, comments, readme instruction => 4

AIMA code
You can use the code from the textbook found in following github repo
https://github.com/aimacode