Documentation: AI Programming Assignment 1

8-Puzzle with Search

Algorithm	Input State	Goal State	Moves(Easy)		Moves(Medium)		Moves(Hard)	
BFS	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']		['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']		Time Limit Exceeded	
DFS	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']		'UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'DOWN ->', 'LEFT ->', 'UP ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->', 'DOWN ->', 'RIGHT ->', 'UP ->', 'LEFT ->		Time Limit Exceeded	
IDS	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	UP UP LEFT DOWN … LEFT LEFT UP RIGHT]		UP RIGHT DOWN DOWN … LEFT UP RIGHT DOWN		UP LEFT DOWN DOWN … LEFT UP RIGHT DOWN	
Greedy BFS	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	UP LEFT DOWN … LEFT UP RIGHT	UP LEFT DOWN … RIGHT UP LEFT
A*	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	TIME LIMIT EXCEEDED	UP LEFT DOWN … RIGHT UP LEFT
IDA*	Easy:(1 3 4 8 6 2 7 0 5) Medium: (2 8 1 0 4 3 7 6 5) Hard: (5 6 7 4 0 8 3 2 1)	(1 2 3 8 0 4 7 6 5)	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'UP ->', 'LEFT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	['UP ->', 'RIGHT ->', 'RIGHT ->', 'DOWN ->', 'LEFT ->', 'LEFT ->', 'UP ->', 'RIGHT ->', 'DOWN ->']	TIME LIMIT EXCEEDED	UP RIGHT DOWN … UP LEFT DOWN