**Ha Viet Pham**

**CSCE420**

**Result**

DFS

Easy puzzle:

Input: (dfs '(1 3 4 8 6 2 7 0 5))

BFS:

Easy puzzle:

Input: (bfs '(1 3 4 8 6 2 7 0 5))

Output: (up right up left down)

Maximum length of the node list is 36

Number of nodes visited is 41

Medium puzzle:

Input: (bfs '(2 8 1 0 4 3 7 6 5))

Output: (up right right down left left up right down)

Maximum length of the node list is 278

Number of nodes visited is 385

IDS:

Easy puzzle:

Input: (ids '(1 3 4 8 6 2 7 0 5))

Output: (up right up left down)

Maximum length of the node list is 7

Number of nodes visited is 42

Medium puzzle:

Input: (ids '(2 8 1 0 4 3 7 6 5))

Output: (up right right down left left up right down)

Maximum length of the node list is 11

Number of nodes visited is 442

Greedy:

Easy puzzle:

Input (with h1): (greedy '(1 3 4 8 6 2 7 0 5) 'h1)

Output: (up right up left down)

Maximum length of the node list is 20

Number of nodes visited is 9

Easy puzzle:

Input (with h2): (greedy '(1 3 4 8 6 2 7 0 5) 'h2)

Output: (up right up left down)

Maximum length of the node list is 25

Number of nodes visited is 10

Running time: 0

Medium puzzle:

Input (with h1): (greedy '(2 8 1 0 4 3 7 6 5) ‘h1)

Output: (up right right down left left up right down)

Maximum length of the node list is 111

Number of nodes visited is 148

Medium puzzle:

Input (with h2): (greedy '(2 8 1 0 4 3 7 6 5) ‘h2)

Output: (up right right down left left up right down)

Maximum length of the node list is 45

Number of nodes visited is 34

Hard puzzle:

Input (with h2): (greedy '(5 6 7 4 0 8 3 2 1) 'h2)

Output: (down left up up right down down left up up right down down left up right right up left left down right right down left up right up left down left up right right down left down left up right right down left left up right down right up left)

Maximum length of the node list is 204

Number of nodes visited is 196

A\*:

Easy puzzle:

Input (with h1): (astar '(1 3 4 8 6 2 7 0 5) 'h1)

Output: (up right up left down)

Maximum length of the node list is 9

Number of nodes visited is 6

Easy puzzle:

Input (with h2): (astar '(1 3 4 8 6 2 7 0 5) 'h2)

Output: (up right up left down)

Maximum length of the node list is 8

Number of nodes visited is 5

Medium puzzle:

Input (with h1): (astar '(2 8 1 0 4 3 7 6 5) ‘h1)

Output: (up right right down left left up right down)

Maximum length of the node list is 29

Number of nodes visited is 31

Medium puzzle:

Input (with h2): (astar '(2 8 1 0 4 3 7 6 5) ‘h2)

Output: (up right right down left left up right down)

Maximum length of the node list is 14

Number of nodes visited is 15