NOTES: PLEASE USE THIS GENERAL FORMAT FOR YOUR REPORT.

YOU CAN USE WORD OR SOME OTHER TEXT-PROCESSING TOOL

OR JUST USE THIS TEMPLATE ADDING THE DATA WHERE NEEDED.

PLEASE REMOVE THESE INSTRUCTIONS PRIOR TO CONVERTING

TO PDF AND TURNING THIS IN. BE SURE TO NAME THE NEW

FILE PROPERLY, AS EXPLAINED IN THE A2 SPECIFICATION.

A2\_Report.pdf

partner 1 firstname and lastname: Haokun Cai

partner 1 student number:1832787

partner 1 uwnetid: haokun

partner 2 firstname and lastname:

partner 2 student number:

partner 2 uwnetid:

Assignment 2 Report -- Heuristic Search

CSE 415: Introduction to Artificial Intelligence

Winter, 2021

1. Results with Heuristics for the Eight Puzzle

Puzzle Heuristic Solved? # Soln Edges Soln Cost # Expanded Max OPEN

+------+-----------+-------+--------------+----------+------------+--------+

| A | none (UCS)| Y | 7 | 7 | 166 | 101 |

+------+-----------+-------+--------------+----------+------------+--------+

| A | Hamming | Y | 7 | 7 | 8 | 6 |

+------+-----------+-------+--------------+----------+------------+--------+

| A | Manhattan | Y | 7 | 7 | 27 | 20 |

+------+-----------+-------+--------------+----------+------------+--------+

| B | none (UCS)| Y | 12 | 12 | 1490 | 898 |

+------+-----------+-------+--------------+----------+------------+--------+

| B | Hamming | Y | 12 | 12 | 96 | 72 |

+------+-----------+-------+--------------+----------+------------+--------+

| B | Manhattan | Y | 12 | 12 | 162 | 103 |

+------+-----------+-------+--------------+----------+------------+--------+

| C | none (UCS)| Y | 14 | 14 | 4070 | 2290 |

+------+-----------+-------+--------------+----------+------------+--------+

| C | Hamming | Y | 14 | 14 | 196 | 127 |

+------+-----------+-------+--------------+----------+------------+--------+

| C | Manhattan | Y | 14 | 14 | 386 | 218 |

+------+-----------+-------+--------------+----------+------------+--------+

| D | none (UCS)| Y | 16 | 16 | 7982 | 4700 |

+------+-----------+-------+--------------+----------+------------+--------+

| D | Hamming | Y | 16 | 16 | 617 | 365 |

+------+-----------+-------+--------------+----------+------------+--------+

| D | Manhattan | Y | 16 | 16 | 993 | 593 |

+------+-----------+-------+--------------+----------+------------+--------+

Puzzle A: [3,0,1,6,4,2,7,8,5]

Puzzle B: [3,1,2,6,8,7,5,4,0]

Puzzle C: [4,5,0,1,2,8,3,7,6]

Puzzle D: [0,8,2,1,7,4,3,6,5]

2. (Optional) Evaluating Our Custom Heuristics