**Assignment 2 Report – Heuristic Search**

**CSE 415: Introduction to AI, Winter, 2021**

**Group members:**

Name: Sheng Yu Student Number: 1736385 UID: shengy23

Name: Qiaoxue Liu Student Number: 1738204 UID: qiaoxl

**Result with Heuristics for the Eight Puzzle:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Puzzle | Heuristic | Solved? | # Soln Edges | Soln Cost | # Expanded | Max OPEN |
| A | None (UCS) | Yes | 7 | 7 | 166 | 101 |
| A | Hamming | Yes | 7 | 7 | 7 | 6 |
| A | Manhattan | Yes | 7 | 7 | 7 | 6 |
| B | None (UCS) | Yes | 12 | 12 | 1490 | 898 |
| B | Hamming | Yes | 12 | 12 | 94 | 72 |
| B | Manhattan | Yes | 12 | 12 | 33 | 25 |
| C | None (UCS) | Yes | 14 | 14 | 4070 | 2290 |
| C | Hamming | Yes | 14 | 14 | 189 | 127 |
| C | Manhattan | Yes | 14 | 14 | 56 | 39 |
| D | None (UCS) | Yes | 16 | 16 | 7982 | 4700 |
| D | Hamming | Yes | 16 | 16 | 589 | 368 |
| D | Manhattan | Yes | 16 | 16 | 148 | 96 |

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]