

A3_Report.pdf

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Assignment 3 Report -- Heuristic Search

CSE 415: Introduction to Artificial Intelligence

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1. Results with Heuristics for the Eight Puzzle

| Puzzle | Heuristic | Solved ? | #Soln. Edge | #Soln. Cost | #Expanded | Max OPEN |
|---------------|------------------|---------------------|------------------------|------------------------|------------------|---------------------|
| A | None(UCS) | Y | 7 | 7 | 166 | 101 |
| A | Hamming | Y | 7 | 7 | 7 | 6 |
| A | Manhattan | Y | 7 | 7 | 7 | 6 |
| B | None(UCS) | Y | 12 | 12 | 1490 | 898 |
| B | Hamming | Y | 12 | 12 | 94 | 72 |
| B | Manhattan | Y | 12 | 12 | 33 | 25 |
| C | None(UCS) | Y | 14 | 14 | 4070 | 2290 |
| C | Hamming | Y | 14 | 14 | 189 | 127 |
| C | Manhattan | Y | 14 | 14 | 56 | 39 |
| D | None(UCS) | Y | 16 | 16 | 7982 | 4700 |
| D | Hamming | Y | 16 | 16 | 592 | 368 |
| D | Manhattan | Y | 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]

2. (Optional) Evaluating My Custom Heuristics