A3 Report

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**Heuristics for Eight Puzzle**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Puzzle | Heuristic | Solved? | # Edges | Cost | # Expanded | Max OPEN |
| A | Non (UCS) | Yes | 7 | 7 | 166 | 101 |
| A | Hamming | Yes | 7 | 7 | 7 | 6 |
| A | Manhattan | Yes | 7 | 7 | 7 | 6 |
| B | Non (UCS) | Yes | 12 | 12 | 1490 | 898 |
| B | Hamming | Yes | 12 | 12 | 95 | 72 |
| B | Manhattan | Yes | 12 | 12 | 34 | 25 |
| C | Non (UCS) | Yes | 14 | 14 | 4070 | 2290 |
| C | Hamming | Yes | 14 | 14 | 195 | 127 |
| C | Manhattan | Yes | 14 | 14 | 56 | 39 |
| D | Non (UCS) | Yes | 16 | 16 | 7982 | 4700 |
| D | Hamming | Yes | 16 | 16 | 592 | 368 |
| D | Manhattan | Yes | 16 | 16 | 155 | 98 |

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]

**A-Star Implementation to FranceWithDXHeuristic**

A screenshot of a cell phone

Description automatically generated