Artificial Intelligence Course Project: The 8-

and The 15- Puzzle

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* Hypothesis

This is the report for the semester project for CS:4420 Arti cial Intelligence. The project is divided into 2 parts. On the rst part, we propose to compare two heuristics on the 8-puzzle problem with the Manhattan distance heuristics, using the A\* search strategy for testing. We then compare the average solution depth for each case. In the second part, we implement the 15-puzzle problem using the IDA\* and SMA\* search strategies for testing.

Keywords:

* Report

a. Part 1

Description of how we generated 8-puzzles:

Description of how we wrote the A\* code:

Description of Manhattan distance implementation:

Description of Misplaced Tiles and implementation:

Description of Max Swap and implementation.

Results

Analysis of Results

b. Part 2

Description of how we generated 15-puzzles:

Description of IDA\* code and why it’s used in this application.

Description of how we wrote the IDA\* code.

Results

Analysis of Results

c. Conclusion

3 Acknowledgements

* References

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