Katholieke Universiteit Leuven

Data Structures and Algorithms

Assignment 2
8-Puzzle

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1 Introduction

The purpose of this assignment is to study the importance of data-structures, in particular the "priority-queue", by writing a program that solves the 8-puzzle-problem (see section 2).

This puzzle-problem can be solved by implementing the A* algorithm[2]. This algorithm uses priorityfunctions such as the Manhatten priority and the Hamming priority (see sections 3.1 and 3.2), to determine closest path to the goalstate.

In section 3, the priorityfunctions will be discussed and some experimental data will be given. With this data, conclusions will be made and questions can be answered in section 4.

2 8-puzzle

3 Experimental data

3.1 Manhatten priority

3.2 Hamming priority

4 Q&A: Questions and Answers

[1]

5 Conclusion

References

[1] cs.princeton.edu. 8 puzzle - cos 226 programming assignment.

[2] Wikipedia. A* search algorithm.