

CSC325 Artificial Intelligence – Lab Exercise 2

Last Sign-off Day: Feb 26, 2021

Task 1

Write a Python program to solve the *8-Puzzle*. Please see

https://en.wikipedia.org/wiki/15_puzzle

for the puzzle description.¹ Specifically, your program needs to do the following:

- Randomly generate an 8-puzzle board that has a solution. (Hint: Use your favourite search engine to find conditions for solvable 8-puzzles.)
- Solve the puzzle.

Run your program multiple times and record the average processing time and the average number of moves.

Task 2

Use a different algorithm to solve the 8-puzzle and compare the result with your solution from Task

1. E.g., if you have used Greedy search in Task 1, use A* in Task 2 or vice versa.

¹Since there is no Wikipedia page for the 8-Puzzle, let's just use the 15-puzzle page instead.