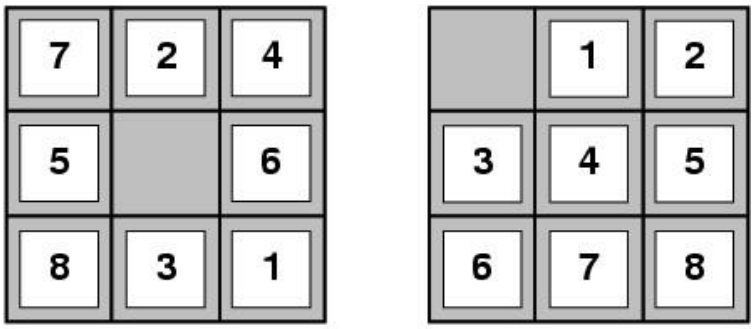
Istanbul University - Cerrahpasa
Computer Engineering Department
Artificial Intelligence And Expert Systems

Project Description

In this project you will use uninformed search methods to solve an 8-puzzle given in your textbook (Russel and Norvig, AI:MA, Pages 65-66)



Start State Goal State

- Consists of a 3x3 board with 8 numbered tiles and a blank space.
- A tile adjacent to the blank space can slide into the space.
- The object is to reach a specified goal state, such as the one shown on the right.

Implement an agent to solve an 8-puzzle with the following search methods:

- Breadth-first
- Depth-first
- Depth limited (depth limit must be an argument, try different depth limits)
- Iterative deepening search

You should also create a random problem generator and try your agent for 10 random problems. You may use any programming language.

You will write a report comparing these algorithms. You must report the following:

- The algorithms which found a solution.
- Maximum size of the fringe
- Number of nodes expanded for solved problems

Your report must not be more than 3 pages !!!

WHAT TO SUBMIT :

Attached to the report, you shoul also submit
a. your source codes,
b. sample input and corresponding output files (Printouts to show that your code works for each algorithm) and
c. an instruction file on how to compile and run the codes.