Department of Computer Science & IT

UNIVERSITY OF SARGODHA

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Mini Project:

Develop an intelligent agent to solve the problem at hand

Experiment No.1

Experiment the vacuum cleaner world example

- Understand the Vacuum Cleaner World given at the following link: http://web.ntnu.edu.tw/~tcchiang/ai/Vacuum%20Cleaner%20World.htm

- Download the source code, configure it and execute it. After having hands on experience, submit the output screenshots with complete discussion of steps you made to make this source code executable.

Experiment No.2

Implement the Romanian Example using the Depth First Search

- Implement the Romanian Example using the Depth First Search.

- For reference look at the following URL: http://centurion2.com/AIHomework/AI200/ai200.php

Experiment No.3

Design a program for the greedy best first search or A* search

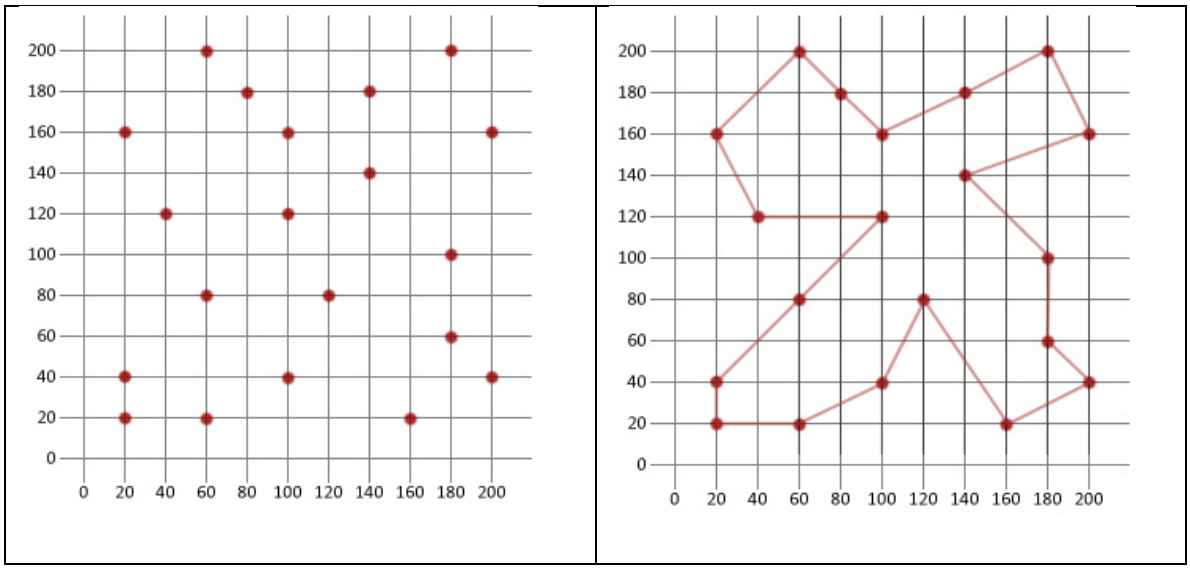
- Implement the greedy best first search using the following link https://www.geeksforgeeks.org/best-first-search-informed-search/

- Implement the A* search using the following link https://www.geeksforgeeks.org/a-search-algorithm/

Experiment No.4

Construct the simulated annealing algorithm over the travelling salesman problem.

- Go to http://www.theprojectspot.com/tutorial-post/simulated-annealing-algorithm-for-beginners/6
- Run and understand the Simulated Annealing in case of Travelling Salesman problem. Also augment the code with these maps as input and output.
- After hands on experience, submit the report along with the source code and screenshots.



Experiment No. 5

Implement a basic binary genetic algorithm for a given problem

- Visit the following link and study and understand the genetics algorithm. http://www.theprojectspot.com/tutorial-post/creating-a-genetic-algorithm-for-beginners/3

- Java source code is given there, configure it, execute it and submit the report accordingly.

Experiment No. 6

Experiment the Graph Coloring CSP or Cryptarithmetic Puzzle

- Go to the following at https://www.geeksforgeeks.org/backttracking-set-5-m-coloring-problem/
- C/C++, Java and python source code is available, download it, configure & execute it and submit a report accordingly.

Experiment No. 7

Implement the Tic-Tac-Toe game using any adversarial searching algorithm

- Visit the following link: https://www.geeksforgeeks.org/minimax-algorithm-in-game-theory-set-3-tic-tac-toe-ai-finding-optimal-move/
- Perform the following operations over it.
    - Download it.
    - Configure and execute it.
    - Submit the final report.