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Course Code: INT315

ARTIFICIAL INTELLIGENCE & LOGICAL REASONING LABORATORY

Course Objectives

This course helps the learner to gain practical knowledge in various problem solving approaches for artificially intelligent systems. It also helps the learner to practice knowledge representation and retrieval techniques.

Prerequisite: Basic knowledge in R/ Python/ MATLAB programming as the exercises are to be carried out in these languages

1. Solve path planning problem using Breadth First Search
2. Apply Depth First Search for searching attribute subset space
3. Use Iterative Deepening Depth limited search to solve 8-puzzle problem
4. Implement greedy search for searching attribute subset space
5. Implement A* algorithm for shortest path problem
6. Implement Genetic Algorithm for solving 8-queens' problem
7. Implement Alpha-Beta Pruning for solving Tic-Tac-Toe game
8. Solve crypt arithmetic problem using ALLDIFF Constraints
9. Write simple programs for creating terms variables and atoms
10. Write simple FOL statements for Knowledge Representation

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the learner will be able to

- Choose an appropriate Informed and uninformed search strategy for problem solving
- Demonstrate Local Search Algorithms for solving real world problems
- Implement Adversarial Search algorithms for games
- Choose appropriate ontology and logic for knowledge representation and inference