New Summit College

Artificial Intelligence, BSc. CSIT 4th Semester

Lab work – 1:

   Write python code to simulate the Vacuum Cleaner Agent.

Lab work – 2:

   Write a python program to implement the Breadth First Search uninformed search technique.

Lab work – 3:

   Write a python program to implement the Depth First Search uninformed search technique.

Lab work – 4:

   Illustrate the Uniform Cost Search using python program.

Lab work – 5:

   Implement Greedy Best First Search algorithm using python program.

Lab work – 6:

   Implement A* Search algorithm using python program.

Lab Work on logic programming using prolog.

1. Write a clause for predicate logic for the given sentences.
       Eden likes coffee.
       Simran is a girl.
       Roses are red.
       Luke owns gold.
       Shilu is wealthy.
       Shekhar likes Shila.
   Execute the following queries:
   a. What does Eden like?
   b. Who likes Shila?
   c. What is red?
   d. Who owns gold?
   e. Who is a girl?
   f. Is Shilu wealthy?
   g. What do Pratima own?

2. Write a program in prolog to implement simple arithmetic.
3. Write a program in prolog to compute factorials of any number.

4. Create a knowledge Base for the following family tree.

   Bikash, Roman, Mani and James are male.
   Ramila, Shila, Anu and Shweta are female.
   Bikash and Ramila are parents of Anu and Shweta.
   Roman and Shila are parents of James.
   Mani and Anu are the parents of Simon.
   James and Shweta are the parents of Shekhar.

   And run the following queries:
      1. Who is the mother of Shweta?
      2. Who is the grandmother of Shekhar?
      3. Who are the parents of James?
      4. Does Shila have a sister?
      5. Who is the uncle of Shekhar?
      6. Find all ancestors of Simon.

Lab Work on Machine Learning

1. Write a program to illustrate the implementation of Naive Bayes algorithm in python.
2. Write a machine learning code to implement simple linear regression in python using a toy dataset.
3. Write a program to illustrate working of Hebbian learning for weights and bias update in neural networks in python using your own dataset.
4. Write a program to illustrate working of Perceptron learning for parameter update in neural network in python for AND gate.