

**VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING(AI&ML)**

SKILL DEVELOPMENT COURSE (PROLOG)

II Year B.Tech. CSE (AI & ML) II Sem.

List of Programs:

1. Write simple fact for following:
 - A. Ram likes mango.
 - B. Seema is a girl.
 - C. Bill likes Cindy.
 - D. Rose is red.
 - E. John owns gold
2. Write predicates one converts centigrade temperatures to Fahrenheit, the other checks if a temperature is below freezing.
3. Write a program to solve the Monkey Banana problem
4. WAP in turbo prolog for medical diagnosis and show the advantages and disadvantages of green and red cuts.
5. Write a program to solve the 4-Queen problem.
6. Write a program to solve traveling salesman problems.
7. Write a program to solve water jug problems using Prolog.
8. Write simple Prolog functions such as the following. Take into account lists which are too short.
-- remove the Nth item from the list. -- insert as the Nth item.
9. Assume the prolog predicate `gt(A, B)` is true when A is greater than B. Use this predicate to define the predicate `addLeaf(Tree, X, NewTree)` which is true if `NewTree` is the Tree produced by adding the item X in a leaf node. Tree and `NewTree` are binary search trees. The empty trees are represented by the atom `nil`.
10. Write a Prolog predicate, `countLists(Alist, Ne, Nl)`, using accumulators, that is true when `Nl` is the number of items that are listed at the top level of `Alist` and `Ne` is the number of empty lists. Suggestion: First try to count the lists, or empty lists, then modify by adding the other counter.

11. Define a predicate `memCount(AList,Blist,Count)` that is true if `AList` occurs `Count` times within `Blist`. Define without using an accumulator. Use "not" as defined in `utilities.pro`, to make similar cases are unique, or else you may get more than one count as an answer.

Examples:

`memCount(a,[b, a],N).N = 1 ;`

`nomemCount(a,b,[a,a,[a],c],a,N).N = 4 ;`

`nomemCount([a][b,[a,a,[a],c],a],N).N = 1 ;` **No REFERENCE BOOK:**

1. PROLOG: Programming for Artificial Intelligence, 3e, by BRATKO, WILEY