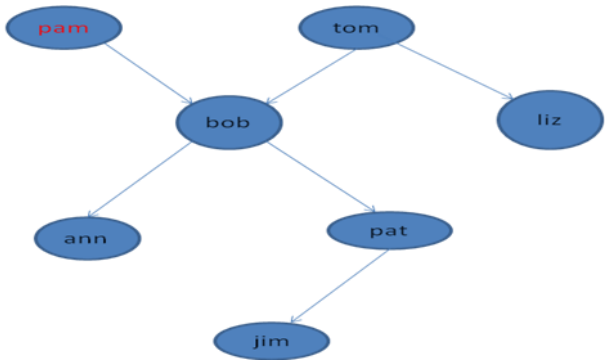
Computational Intelligence Laboratory

CMSA 6th Semester

SOFTWARE REQUIREMENT: Prolog / LISP

Book: Prolog Programming for Artificial Intelligence by Ivan Bratko

1. From the following family tree define the fact for the bellow given problem:



Females are pam, ann, pat, liz.
Males are tom, bob, jim.

a) Who are the parents of bob?
b) Find out who is the parent of whom?
c) Who is the parent of jim?
d) Who is the grandparent of jim?
e) Who are tom's grand children?
f) Do ann and pat have common parent?
g) Who is the sister of pat?
h) Who is the mother of bob ?
i) Who is the father of whom?
j) Who is the grandfather of whom?
k) Who is the mother of whom?

2. Write a prolog program to determine whether in a list, the first two elements are same.
3. Write a prolog program that checks whether a list does not contain exactly two elements.
4. Write a prolog program to determine whether the two lists are of same length.
5. Write a prolog program to determine length of a list.
6. Write a prolog program to find the last element of a list.
7. Write a prolog program to check whether two elements are consecutive elements in a list.

8. Write a prolog program to determine whether an element is a member of a list.
9. Write a prolog program to append two lists to generate a 3rd list.
10. Write a prolog program to reverse a list.
11. Write a prolog program to determine whether a list is a palindrome.
12. Write a program in PROLOG for sum, subtraction, multiplication, division, square root using function.
13. Write a prolog program to find gcd of two +ve integers.
14. Write a prolog program to find the maximum between two numbers.
15. Write a prolog program to find the maximum number of a list.
16. Write a prolog program to check whether a list is ordered list.
17. Write a prolog program to remove duplicate element from a list.
18. Write a prolog program that selects an element from a list, saving the remaining elements in another list.
19. Write a prolog program to find the square root of a number using function.
20. Write a prolog program to find the modulus of two number using function.
21. Write a prolog program to find the cube of a number.
22. Write a prolog program whether a number is positive or negative or zero.
23. Write a prolog program to find even-odd number using function.
24. Write a prolog program to print n to m numbers using for loop.
25. Write a program to calculate the sum of n natural numbers.
26. Write a prolog program to find the sum of square of each number of n natural number.
27. Write a prolog program to find the sum of inverse of each number of n natural number.
28. Write a prolog program to find factorial of a number.
29. Write a prolog program to find Fibonacci series.
30. Write a prolog program to find out whether a list is subsist of a list.