# Artificial Intelligence Lab

# Lab1

Code

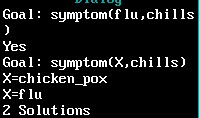
domains

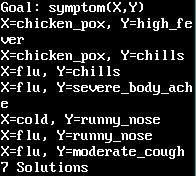
disease,indication=symbol predicates

symptom(disease,indication) clauses symptom(chicken\_pox,high\_fever). symptom(chicken\_pox,chills).

symptom(flu,chills). symptom(flu,severe\_body\_ache). symptom(cold,runny\_nose). symptom(flu,runny\_nose). symptom(flu,moderate\_cough).

OUTPUT





# Lab 2

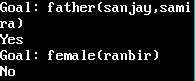
## CODE

domains person=symbol predicates grandfather(person,person) grandmother(person,person) father(person,person) mother(person,person) male(person) female(person) clauses female(ramsarni). female(krishna). female(geetabali). female(jennifer). female(babita). female(ritu\_kapoor). female(nitu). female(reema\_kapoor). male(prithviraj\_kapoor). male(raj\_kapoor). male(shammi\_kapoor).

male(shashi). male(randhir\_kapoor). male(rajeev\_kapoor). male(rajan\_nandan). male(rishi\_kapoor). male(ranbir\_kapoor). male(sanjay). male(saif). grandfather(prithviraj\_kapoor,randhir\_kapoor). grandfather(prithviraj\_kapoor,ritu\_kapoor). grandfather(prithviraj\_kapoor,rishi\_kapoor). grandfather(prithviraj\_kapoor,reema\_kapoor).

grandfather(raj\_kapoor,karishma). grandfather(shammi\_kapoor,karishma). grandfather(shashi,karishma). grandfather(raj\_kapoor,kareena). grandfather(shammi\_kapoor,kareena).

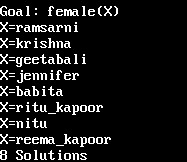
grandfather(shashi,kareena). grandfather(raj\_kapoor,ranbir\_kapoor). grandfather(shammi\_kapoor,ranbir\_kapoor).

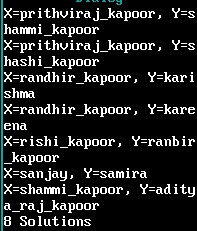
grandfather(shashi,ranbir\_kapoor). grandmother(ramsarani,randhir\_kapoor). grandmother(ramsarani,ritu\_kapoor). grandmother(ramsarani,rishi\_kapoor). grandmother(ramsarani,reema\_kapoor). grandmother(krishna,karishma). grandmother(geetabali,karishma). grandmother(jennifer,karishma). grandmother(krishna,karrena). grandmother(geetabali,karrena). grandmother(jennifer,karrena). grandmother(krishna,ranbir\_kapoor). grandmother(geetabali,ranbir\_kapoor). grandmother(jennifer,ranbir\_kapoor). father(prithviraj\_kapoor,raj\_kapoor). father(prithviraj\_kapoor,shammi\_kapoor). father(prithviraj\_kapoor,shashi\_kapoor). father(randhir\_kapoor,karishma). father(randhir\_kapoor,kareena). father(rishi\_kapoor,ranbir\_kapoor).

father(sanjay,samira). father(shammi\_kapoor,aditya\_raj\_kapoor).

mother(ramsarani,raj\_kapoor). mother(ramsarani,shammi\_kapoor). mother(ramsarani,shashi\_kapoor). mother(geetabali,aditya\_raj\_kapoor). mother(krishna,randhir\_kapoor). mother(krishna,rajeev\_kapoor). mother(krishna,ritu\_kapoor). mother(krishna,rishi\_kapoor). mother(krishna,reema\_kapoor). mother(karishma,samira). mother(neetu,ranbir\_kapoor).

## OUTPUT





### **Lab 3** CODE

domains person=symbol predicates grandfather(person,person) grandmother(person,person) father(person,person) mother(person,person) male(person) female(person) happy(person) sister(person,person) have2children(person) son(person,person) grandchild(person,person) aunt(person,person)

clauses female(ramsarni). female(karishna). female(kareena). female(geetabali). female(jennifer). female(babita). female(ritu\_kapoor). female(nitu). female(reema\_kapoor). male(prithviraj\_kapoor). male(raj\_kapoor). male(shammi\_kapoor).

male(shashi). male(randhir\_kapoor). male(rajeev\_kapoor). male(rajan\_nandan). male(rishi\_kapoor). male(ranbir\_kapoor). male(sanjay). male(saif).

grandfather(prithviraj\_kapoor,randhir\_kapoor). grandfather(prithviraj\_kapoor,ritu\_kapoor). grandfather(prithviraj\_kapoor,rishi\_kapoor). grandfather(prithviraj\_kapoor,reema\_kapoor).

grandfather(raj\_kapoor,karishma). grandfather(shammi\_kapoor,karishma). grandfather(shashi,karishma). grandfather(raj\_kapoor,kareena). grandfather(shammi\_kapoor,kareena).

grandfather(shashi,kareena). grandfather(raj\_kapoor,ranbir\_kapoor). grandfather(shammi\_kapoor,ranbir\_kapoor).

grandfather(shashi,ranbir\_kapoor).

grandmother(ramsarani,randhir\_kapoor). grandmother(ramsarani,ritu\_kapoor). grandmother(ramsarani,rishi\_kapoor). grandmother(ramsarani,reema\_kapoor).

grandmother(krishna,karishma). grandmother(geetabali,karishma). grandmother(jennifer,karishma). grandmother(krishna,karrena). grandmother(geetabali,karrena). grandmother(jennifer,karrena). grandmother(krishna,ranbir\_kapoor). grandmother(geetabali,ranbir\_kapoor). grandmother(jennifer,ranbir\_kapoor).

father(prithviraj\_kapoor,raj\_kapoor). father(prithviraj\_kapoor,shammi\_kapoor). father(prithviraj\_kapoor,shashi). father(raj\_kapoor,randhir\_kapoor). father(raj\_kapoor,ritu\_kapoor). father(raj\_kapoor,rishi\_kapoor). father(raj\_kapoor,reema\_kapoor). father(randhir\_kapoor,karishma). father(randhir\_kapoor,kareena). father(rishi\_kapoor,ranbir\_kapoor). father(sanjay,samira). father(shammi\_kapoor,aditya\_raj\_kapoor).

mother(ramsarani,raj\_kapoor). mother(ramsarani,shammi\_kapoor).

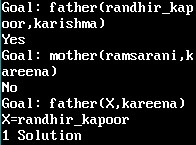
mother(ramsarani,shashi). mother(geetabali,aditya\_raj\_kapoor). mother(krishna,randhir\_kapoor). mother(krishna,rajeev\_kapoor). mother(krishna,ritu\_kapoor). mother(krishna,rishi\_kapoor). mother(krishna,reema\_kapoor).

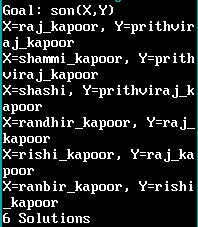
mother(karishma,samira). mother(neetu,ranbir\_kapoor).

happy(X):-father(X,Y);mother(X,Y),male(X);female(X). sister(X,Y):-father(Z,X),father(Z,Y),female(X),X<>Y. have2children(X):-father(X,Y),father(X,Z),sister(Y,Z),Y<>Z. son(X,Y):-father(Y,X),male(X).

grandchild(X,Y):-father(X,Z),father(Z,Y). aunt(X,Y):-father(Z,Y),sister(X,Z).

### **OUTPUT**







**Lab4**

## To check whether component is a member of a list or not

### CODE

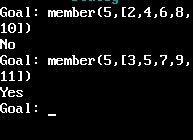
domains

integerlist=integer\*

predicates member(integer,integerlist)

clauses member(X,[X|\_]). member(X,[\_|Tail]):-member(X,Tail).

**OUTPUT**



# To combine two Lists

## CODE

domains symbollist=symbol\*

predicates conc(integerlist,integerlist,integerlist)

clauses conc([],L,L) conc([X|L1],L2,[X|L3]):-conc(L1,L2,L3)

## OUTPUT

