**Lab-3**

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**Aim: -** Write a program for usage of rules in Prolog.

**Code:-**

domains

predicates

male(symbol).

female(symbol).

parent(symbol,symbol).

grandfather(symbol,symbol).

grandmother(symbol,symbol).

father(symbol,symbol).

mother(symbol,symbol).

aunt(symbol,symbol).

uncle(symbol,symbol).

spouse(symbol,symbol).

sibling(symbol,symbol).

clauses

female(urvashi).

female(shaily).

female(sita).

female(sanjana).

female(kaushalya).

male(abhi).

male(rahul).

male(dev).

male(ram).

male(dhrumil).

male(manan).

male(jay).

parent(kaushalya,ram).

parent(kaushalya,rahul).

parent(dev,ram).

parent(ram,dhrumil).

parent(ram,manan).

parent(sita,manan).

parent(sita,dhrumil).

parent(dev, rahul).

parent(jay,dev).

parent(jay,shaily).

parent(sanjana,dev).

parent(sanjana,shaily).

spouse(jay,sanjana).

spouse(dev,kaushalya).

spouse(abhi,shaily).

spouse(ram,sita).

spouse(rahul,urvashi).

father(X,Y):-parent(X,Y),male(X).

mother(X,Y):-parent(X,Y),female(X).

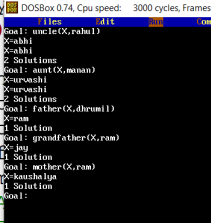
grandfather(X,Y):-father(X,Z),parent(Z,Y).

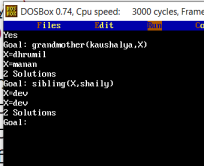
grandmother(X,Y):-mother(X,Z),parent(Z,Y). aunt(X,Y):-spouse(A,X),parent(Z,Y),sibling(Z,A),female(X). aunt(X,Y):-parent(Z,Y),sibling(X,Z),female(X).

sibling(X,Y):-parent(Z,X),parent(Z,Y), not(X=Y).

uncle(X,Y):- spouse(X,A),parent(Z,Y),sibling(Z,A),male(X). uncle(X,Y):-parent(Z,Y),sibling(X,Z),male(X).

**Output:-**

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