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DEPARTMENT OF COMPUTER ENGINEERING

SUBJECT: Artificial Intelligence and Machine Learning

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Experiment 5	
AIM :	To design and implement an intelligent system, incorporating the matching algorithm and the rule language. (family tree & knowledge generation) using Swish Prolog. 1. It should provide a fact base updating function. 2. It should provide a function that checks the rules' LHS and return which rules were matched. 3. It should support firing RHS according to matches.
CODE:	/* Facts */ male(manish). male(shashikant). male(mahadev). male(narayan). male(subhash). male(nishant). female(nivedita). female(madhuri). female(mandakini). female(shrijal). parent_of(subhash,nishant).

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parent_of(subhash,shrijal).

parent_of(shashikant, manish).

parent_of(nivedita, manish).

parent_of(narayan,nivedita).

parent_of(madhuri, nivedita).

parent_of(mandakini, shashikant).

parent_of(mahadev, shashikant).

parent_of(narayan, subhash).

parent_of(narayan, nivedita).

parent_of(madhuri, nivedita).

parent_of(madhuri, subhash).

relation(shashikant, nivedita).

relation(narayan,madhuri).

relation(mahadev,mandakini).


/* Rules */

husband_of(X,Y):-

 female(Y),male(X),relation(X,Y).


wife_of(X,Y):-

 male(Y),female(X),relation(Y,X).
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father_of(X,Y):- male(X),
 parent_of(X,Y).

mother_of(X,Y):- female(X),
 parent_of(X,Y).

grandfather_of(X,Y):- male(X),
 parent_of(X,Z),
 parent_of(Z,Y).

grandmother_of(X,Y):- female(X),
 parent_of(X,Z),
 parent_of(Z,Y).

sister_of(X,Y):- %(X,Y or Y,X)%
 female(X),
 father_of(F, Y), father_of(F,X),X \= Y.

sister_of(X,Y):- female(X),
 mother_of(M, Y), mother_of(M,X),X \= Y.
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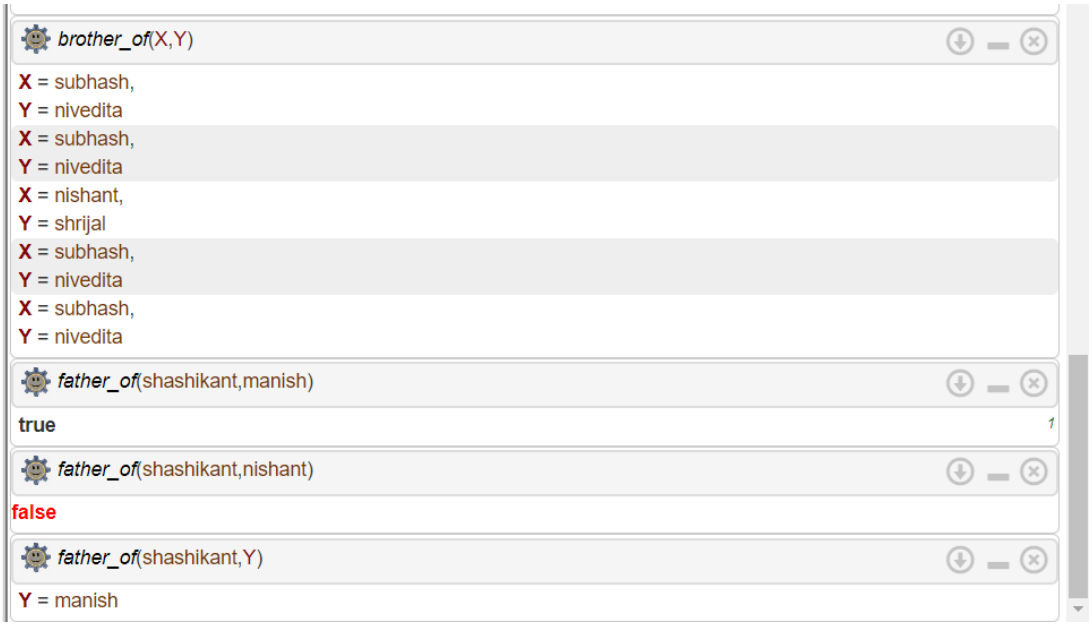
	aunt_of(X,Y):- female(X), parent_of(Z,Y), sister_of(Z,X),!. brother_of(X,Y):- %(X,Y or Y,X)% male(X), father_of(F, Y), father_of(F,X),X \= Y. brother_of(X,Y):- male(X), mother_of(M, Y), mother_of(M,X),X \= Y. uncle_of(X,Y):- parent_of(Z,Y), brother_of(Z,X). ancestor_of(X,Y):- parent_of(X,Y). ancestor_of(X,Y):- parent_of(X,Z), ancestor_of(Z,Y).
Output:	

Output:


father_of(X,Y)
X = shashikant,
Y = manish
wife_of(X,Y)
X = nivedita,
Y = shashikant
X = mandakini,
Y = mahadev
X = madhuri,
Y = narayan
mother_of(X,Y)
X = nivedita,
Y = manish
grandfather_of(X,Y)
X = mahadev,
Y = manish
X = narayan,
Y = manish
X = narayan,
Y = nishant


sister_of(X,Y)
X = nivedita,
Y = subhash
X = nivedita,
Y = subhash
X = shrijal,
Y = nishant
X = nivedita,
Y = subhash
X = nivedita,
Y = subhash
aunt_of(X,Y)
false



CONCLUSION:	Hence by completing this experiment I came to know about implement an intelligent system, incorporating the matching algorithm and the rule language. (family tree & knowledge generation) using Swish Prolog.