

Artificial Intelligence Lab Assignment 1

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parent(ramesh,nitin).

parent(ramesh,sachin).

parent(ramesh,ajit).

parent(ramesh,savita).

parent(rajni,nitin).

parent(rajni,ajit).

parent(rajni,savita).

parent(rajni,sachin).

parent(sachin,sara).

parent(sachin,arjun).

parent(anjali,arjun).

parent(anjali,sara).

male(ramesh).

male(nitin).

male(sachin).

male(ajit).

male(arjun).

female(rajni).

female(savita).

female(anjali).

female(sara).

grand_parent(X,Y) :- parent(X,Z),parent(Z,Y).

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

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

brother(X,Y) :- parent(Z,X),parent(Z,Y),male(X),X\=Y.

sister(X,Y) :- parent(Z,X),parent(Z,Y),female(X),X\=Y.

has_atleast_two_children(X) :- parent(X,Y),(sister(Z,Y);brother(Z,Y)),Z\=Y.

grand_child(X,Y) :- parent(Y,Z),parent(Z,X).

aunt(X,Y) :- parent(Z,Y),sister(X,Z),male(Z).

uncle(X,Y):- parent(Z,Y),brother(X,Z).

successor(X,Y) :- parent(Y,X).

OUTPUT SCREENSHOTS

```
SWI-Prolog (AMOS6 Multi-threaded, version 9.0.4)
File Edit Settings Run Debug Help
false.

?- parent(ansali,X).
X = arjun ;
X = sara.

?- sister(X,Y).
X = savita.
Y = nitin ;
X = savita.
Y = sachin ;
X = savita.
Y = ajit ;
X = savita.
Y = nitin ;
X = savita.
Y = ajit ;
X = savita.
Y = sachin ;
X = sara.
Y = arjun ;
X = sara.
Y = arjun ;
false.

?- brother(X,Y).
X = nitin.
Y = sachin ;
X = nitin.
Y = ajit ;
X = nitin.
Y = savita ;
X = sachin.
Y = nitin ;
X = sachin.
Y = ajit ;
X = sachin.
Y = savita ;
X = sachin.
Y = ajit ;
X = sachin.
Y = nitin ;
X = sachin.
Y = ajit ;
X = nitin.
Y = savita ;
X = nitin.
Y = sachin ;
X = ajit.
Y = nitin ;
X = ajit.
Y = savita ;
X = ajit.
Y = sachin ;
X = sachin.
Y = nitin ;
X = sachin.
Y = ajit ;
false.
```

```

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Y = sachin ;
X = savita ;
= ajit ;
= savita ;
= nitin ;
= nitin ;
= savita ;
= ajit ;
= savita ;
Y = sachin ;
= sara ;
= arjun ;
= sara ;
Y = arjun ;
false.

?- brother(X,Y) .
X = nitin ;
Y = sachin ;
= sachin ;
= nitin ;
Y = ajit ;
= nitin ;
Y = savita ;
X = sachin ;
= nitin ;
= sachin ;
= ajit ;
Y = sachin ;
Y = savita ;
= ajit ;
= nitin ;
X = ajit ;
= sachin ;
= ajit ;
= sachin ;
= ajit ;
Y = savita ;
= nitin ;
Y = ajit ;
= nitin ;
= savita ;
= nitin ;
= sachin ;
= ajit ;
= nitin ;
Y = ajit ;
= savita ;
X = ajit ;
= sachin ;
= sachin ;
= nitin ;
= sachin ;
= ajit ;
= sachin ;
Y = savita ;
X = arjun ;
= sara ;
= arjun ;
Y = sara ;
false.

?- successor(arjun,raresh).
true ;

```

