

EX.NO: 6

PROLOG

AIM :

To develop a family tree program using PROLOG with all possible facts , rules and queries.

SOURCE CODE:

KNOWLEDGE BASE:

```
/*FACTS :: */  
male(peter).  
male(john).  
male(chris).  
male(kevin).  
  
female(betty).  
female(jeny).  
female(lisa).  
female(helen).  
  
parentOf(chris,peter).  
parentOf(chris,betty).  
parentOf(helen,peter).  
parentOf(helen,betty).  
parentOf(kevin,chris).  
parentOf(kevin,lisa).  
parentOf(jeny,john).  
parentOf(jeny,helen).  
  
/*RULES :: */  
  
/* son,parent  
* son,grandparent*/  
  
father(X,Y):- male(Y),  
parentOf(X,Y).  
mother(X,Y):- female(Y),  
parentOf(X,Y).  
grandfather(X,Y):- male(Y),
```

parentOf(X,Z), parentOf(Z,Y).

grandmother(X,Y):-

female(Y),

parentOf(X,Z),

parentOf(Z,Y).

brother(X,Y):- male(Y),

father(X,Z),

father(Y,W),

Z==W.

sister(X,Y):- female(Y),

father(X,Z),

father(Y,W),

Z==W.

OUTPUT :

male(peter)	
true	1
father(chris,peter)	1
true	1
father(chris,betty)	1
false	
grandfather(kevin,peter)	1
true	1
grandfather(jerry,peter)	1
true	1
grandmother(jerry,peter)	1
false	
mother(chris,X)	1
X = betty	
brother(helen,chris)	1
true	1
brother(chris,helen)	1
false	
father(X,Y)	1
X = chris,	
Y = peter	
X = helen,	
Y = peter	
X = jerry,	
Y = john	
X = kevin,	
Y = chris	
mother(X,Y)	1
X = chris,	
Y = betty	
X = helen,	
Y = betty	
X = kevin,	
Y = isa	
X = jerry,	
Y = helen	

```
grandmother(X,Y)
X = kevin,
Y = betty
X = jerry,
Y = betty

grandfather(X,Y)
X = kevin,
Y = peter
X = jerry,
Y = peter
```

```
brother(X,Y)
X = Y, Y = chris
X = helen,
Y = chris
X = Y, Y = kevin

sister(X,Y)
X = Y, Y = jerry
X = chris,
Y = helen
X = Y, Y = helen
```

RESULT :

Thus the python code is implemented and the output is verified