RESULT : Thus the above execution of the algorithm has been successfully executed.

EX.NO :06

:

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 : Thus the above execution of the algorithm has been successfully executed.

male(peter)
true
father(chris,peter)
true
father(chris,betty)
false
grandfather(kevin,peter)
true
grandfather(jeny,peter)
true
grandmother(jeny,peter)
false
mother(chris,X)
X = betty
brother(helen,chris)
true
brother(chris,helen)
false

father(X,Y)
X = chris,
Y = peter
X = helen,
Y = peter
X = jeny,
Y = john
X = kevin,
Y = chris

mother(X,Y)
X = chris,
Y = betty
X = helen,
Y = betty
X = kevin,
Y = lisa
X = jeny,
Y = helen

grandmother(X,Y)
X = kevin,
Y = betty
X = jeny,
Y = betty

grandfather(X,Y)
X = kevin,
Y = peter
X = jeny,
Y = peter

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

sister(X,Y)
X = Y, Y = jeny
X = chris,
Y = helen
X = Y, Y = helen

RESULT : Thus the above execution of the algorithm has been successfully executed.