

EX.NO :

DATE :

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)	1 - 2
true	
father(chris,peter)	3 - 4
true	
father(chris,betty)	5 - 6
false	
grandfather(kevin,peter)	7 - 8
true	
grandfather(jimmy,peter)	9 - 10
true	
grandmother(jimmy,peter)	11 - 12
false	
mother(chris,X)	13 - 14
X = betty	
brother(peter,chris)	15 - 16
true	
brother(chris,helen)	17 - 18
false	
father(X,Y)	19 - 20
X = chris, Y = peter X = helen, Y = peter X = jimmy, Y = john X = kevin, Y = chris	
mother(X,Y)	21 - 22
X = chris, Y = betty X = helen, Y = betty X = kevin, Y = helen X = jimmy, 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 :