

EX.NO:7

DATE:4/9/2024

Reg.no:220701057

PROLOG- FAMILY TREE

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

CODE:

```
/*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)	 
true	1
 father(chris,betty)	 
false	
 grandfather(kevin,peter)	 
true	1
 grandfather(jenny,peter)	 
true	1
 grandmother(jenny,peter)	 
false	
 mother(chris,X)	 
X = betty	
 brother(helen,chris)	 
true	1
 brother(chris,helen)	 
false	
 father(X,Y)	 
X = chris, Y = peter X = helen, Y = peter X = jenny, Y = john X = kevin, Y = chris	
 mother(X,Y)	 
X = chris, Y = betty X = helen, Y = betty X = kevin, Y = lisa X = jenny, Y = helen	
 grandmother(X,Y)	 
X = kevin, Y = betty X = jenny, Y = betty	
 grandfather(X,Y)	 
X = kevin, Y = peter X = jenny, Y = peter	

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