

EX.NO: 7
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PROLOG FAMILY TREE

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:

The screenshot shows a Prolog IDE interface with a search bar at the top and a status bar indicating 365 users online. The main area displays the results of several queries, each with a table of solutions and a 'false' status.

Query 1: `male(Y), parentOf(X,Y).`

Y	X	
peter	chris	1
peter	helen	2
john	jenny	3
chris	kevin	4

false

Query 2: `female(Y), parentOf(X,Y).`

Y	X	
betty	chris	1
betty	helen	2
lisa	kevin	3
helen	jenny	4

Query 3: `male(Y),parentOf(X,Z),parentOf(Z,Y).`

Y	X	Z	
peter	kevin	chris	1
peter	jenny	helen	2

false

Query 4: `female(Y),parentOf(X,Z),parentOf(Z,Y).`

Y	X	Z	
betty	kevin	chris	1
betty	jenny	helen	2

false

Query 5: `male(Y), father(X,Z), father(Y,W),Z==W.`

procedure 'father(A,B)' does not exist

Query 6: `female(Y), father(X,Z),father(Y,W),Z==W.`

procedure 'father(A,B)' does not exist

The interface includes a bottom bar with tabs for 'Examples', 'History', and 'Solutions', a checkbox for 'table results', and a 'Run!' button.

Result:

Thus, we have developed a family tree program using PROLOG with all possible facts, rules, and queries.