

SWISH -- SWI-Prolog for SHarmonia

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Program

```

1 /*FACTS:*/
2 male(peter).
3 male(john).
4 male(chris).
5 male(kevin).
6 female(betty).
7 female(jeny).
8 female(lisa).
9 female(helen).
10 parentOf(chris,peter).
11 parentOf(chris,betty).
12 parentOf(helen,peter).
13 parentOf(helen,betty).
14 parentOf(kevin,chris).
15 parentOf(kevin,lisa).
16 parentOf(jeny,john).
17 parentOf(jeny,helen).
18 /*RULES*/
19 /*son,parent
20 *son,grandparent*/
21 father(X,Y):-male(Y),
22 parentOf(X,Y).
23 mother(X,Y):-female(Y),
24 parentOf(X,Y).
25 grandfather(X,Y):-male(Y),
26 parentOf(X,Z),
27 parentOf(Z,Y).

```

male(peter) true 1

father(chris,peter) true 1

father(chris,betty) false 1

grandfather(kevin,peter) true 1

grandfather(jeny,peter) true 1

grandmother(jeny,peter) false 1

mother(chris,X) X 1

betty 1

brother(helen,chris) true 1

brother(chris,helen) 1

Examples History Solutions table results Run!

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```

12 parentOf(helen,peter).
13 parentOf(helen,betty).
14 parentOf(kevin,chris).
15 parentOf(kevin,lisa).
16 parentOf(jeny,john).
17 parentOf(jeny,helen).
18 /*RULES*/
19 /*son,parent
20 *son,grandparent*/
21 father(X,Y):-male(Y),
22 parentOf(X,Y).
23 mother(X,Y):-female(Y),
24 parentOf(X,Y).
25 grandfather(X,Y):-male(Y),
26 parentOf(X,Z),
27 parentOf(Z,Y).
28 grandmother(X,Y):-female(Y),
29 parentOf(X,Z),
30 parentOf(Z,Y).
31 brother(X,Y):-male(Y),
32 father(X,Z),
33 father(Y,W),
34 Z=W.
35 sister(X,Y):-female(Y),
36 father(X,Z),
37 father(Y,W),
38 Z=W.

```

mother(chris,X) X 1

betty 1

brother(helen,chris) true 1

brother(chris,helen) false 1

father(X,Y) X Y 1

chris peter 1

helen peter 2

jeny john 3

kevin chris 4

mother(X,Y) X Y 1

chris betty 1

helen betty 2

kevin lisa 3

jeny helen 4

grandmother(X,Y) 1

Examples History Solutions table results Run!

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SWISH

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Examples

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76.5

Program

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12 parentOf(helen,peter).
13 parentOf(helen,betty).
14 parentOf(kevin,chriss).
15 parentOf(kevin,lisa).
16 parentOf(jeny,john).
17 parentOf(jeny,helen).
18 /*RULES*/
19 /*son,parent
20 *son,grandparent*/
21 father(X,Y):-male(Y),
22 parentOf(X,Y).
23 mother(X,Y):-female(Y),
24 parentOf(X,Y).
25 grandfather(X,Y):-male(Y),
26 parentOf(X,Z),
27 parentOf(Z,Y).
28 grandmother(X,Y):-female(Y),
29 parentOf(X,Z),
30 parentOf(Z,Y).
31 brother(X,Y):-male(Y),
32 father(X,Z),
33 father(Y,W),
34 Z=W.
35 sister(X,Y):-female(Y),
36 father(X,Z),
37 father(Y,W),
38 Z=W.

```

grandmother(X,Y)

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X	Y	
kevin	betty	1
jeny	betty	2

grandfather(X,Y)

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⌵

=

⌵

×

X	Y	
kevin	peter	1
jeny	peter	2

brother(X,Y)

⚙

⌵

=

⌵

×

X	Y	
chris	chris	1
helen	chris	2
kevin	kevin	3

sister(X,Y)

⚙

⌵

=

⌵

×

X	Y	
jeny	jeny	1
chris	helen	2
helen	helen	3

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Examples

History

Solutions

table results

Run!