

EXPERIMENT-32

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Course: CSA1789 Artificial Intelligence

Q)Write the prolog program to implement family tree

Pam, Liz, Ann and Pat are female, while Tom, Bob and Jim are male persons.

Using this information, define the following relations:

- Define the "mother" relation:
- Define the "father" relation:
- Define the "grandfather" relation:
- Define the "grandmother" relation:
- Define the "sister" relation
- Define the "brother" relation

Program:

female(pam).

female(liz).

female(pat).

female(ann).

male(jim).

male(bob).

male(tom).

male(peter).

parent(pam,bob).

parent(tom,bob).

parent(tom,liz).

parent(bob,ann).

parent(bob,pat).

parent(pat,jim).

parent(bob,peter).

parent(peter,jim).

mother(X,Y):- parent(X,Y),female(X).

father(X,Y):-parent(X,Y),male(X).

sister(X,Y):-parent(Z,X),parent(Z,Y),female(X),X\==Y.

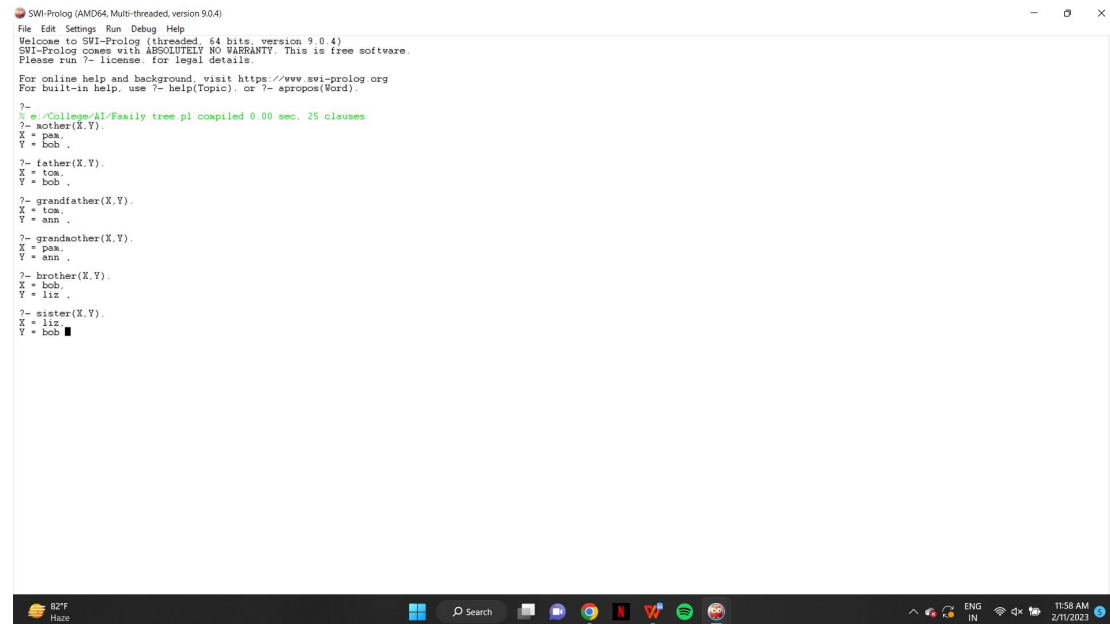
brother(X,Y):-parent(Z,X),parent(Z,Y),male(X),X\==Y.

grandparent(X,Y):-parent(X,Z),parent(Z,Y).

grandmother(X,Z):-mother(X,Y),parent(Y,Z).

grandfather(X,Z):-father(X,Y),parent(Y,Z).
wife(X,Y):-parent(X,Z),parent(Y,Z),female(X),male(Y).
uncle(X,Z):-brother(X,Y),parent(Y,Z).

OUTPUT:



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SWI-Prolog (AMD64, Multi-threaded, version 9.0.4)
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 9.0.4)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.
For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?-
?- e:/College/Al/Family tree.pl compiled 0.00 sec. 25 clauses
?- mother(X,Y).
X = pam.
Y = bob.

?- father(X,Y).
X = tom.
Y = bob.

?- grandfather(X,Y).
X = tom.
Y = ann.

?- grandmother(X,Y).
X = pam.
Y = ann.

?- brother(X,Y).
X = bob.
Y = liz.

?- sister(X,Y).
X = liz.
Y = bob.
```