Manil Singha Malla

wcrecent@gmail.com

Using Prolog and logic to implement a family tree.

AI LAB 5

Family Tree

* Write a prolog program to implement the following family tree.

(Father) (Mother)

Narendra Debuk

(Mother) (Father)

Renu Ramesh Roshan

Abin Aashna

And answer the following:-

1. Are Ramesh and Roshan siblings?
2. Who is Abin’s grandfather?
3. Who is Ashna’s uncle?

* Solutions

1. Are Ramesh and Roshan siblings?

* Code

PREDICATES

father(symbol,symbol)

mother(symbol,symbol)

grandfather(symbol,symbol)

sibling(symbol,symbol)

uncle(symbol,symbol)

CLAUSES

father("Narendra","Ramesh").

father("Narendra","Roshan").

father("Ramesh","Abin").

father("Ramesh","Ashna").

mother("Debuk","Ramesh").

mother("Debuk","Roshan").

mother("Renu","Abin").

mother("Renu","Ashna").

sibling(X,Y):- father(Z,X),

father(Z,Y).

grandfather(X,Y):- father(X,Z),

father(Z,Y).

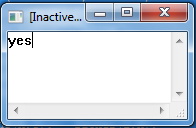
uncle(X,Y):- father(Z,Y),

sibling(Z,X).

GOAL

sibling("Ramesh","Roshan").

* Output



1. Who is Abin’s grandfather?

* Code

PREDICATES

father(symbol,symbol)

mother(symbol,symbol)

grandfather(symbol,symbol)

sibling(symbol,symbol)

uncle(symbol,symbol)

CLAUSES

father("Narendra","Ramesh").

father("Narendra","Roshan").

father("Ramesh","Abin").

father("Ramesh","Ashna").

mother("Debuk","Ramesh").

mother("Debuk","Roshan").

mother("Renu","Abin").

mother("Renu","Ashna").

sibling(X,Y):- father(Z,X),

father(Z,Y).

grandfather(X,Y):- father(X,Z),

father(Z,Y).

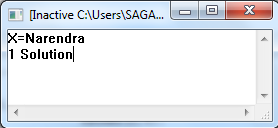
uncle(X,Y):- father(Z,Y),

sibling(Z,X).

GOAL

grandfather(X,"Abin").

* Output



1. Who is Ashna’s uncle?

* Code

PREDICATES

father(symbol,symbol)

mother(symbol,symbol)

grandfather(symbol,symbol)

sibling(symbol,symbol)

uncle(symbol,symbol)

CLAUSES

father("Narendra","Ramesh").

father("Narendra","Roshan").

father("Ramesh","Abin").

father("Ramesh","Ashna").

mother("Debuk","Ramesh").

mother("Debuk","Roshan").

mother("Renu","Abin").

mother("Renu","Ashna").

sibling(X,Y):- father(Z,X),

father(Z,Y).

grandfather(X,Y):- father(X,Z),

father(Z,Y).

uncle(X,Y):- father(Z,Y),

sibling(Z,X).

GOAL

uncle(X,"Ashna").

* Output

