

Family Relationship Rules in Prolog

Base Facts

% Gender facts

male(john).

male(paul).

male(mike).

male(david).

female(linda).

female(susan).

female(mary).

female(anna).

% Parent facts

parent(john, paul). % John is Paul's parent

parent(linda, paul).

parent(john, susan).

parent(linda, susan).

parent(paul, mike).

parent(mary, mike).

parent(paul, anna).

parent(mary, anna).

parent(susan, david).

parent(mike, david).

Relationship Rules

% father(Father, Child)

father(F, C) :- parent(F, C), male(F).

% mother(Mother, Child)

mother(M, C) :- parent(M, C), female(M).

% sibling(Person1, Person2)

sibling(X, Y) :-

parent(P, X),

parent(P, Y),

X \= Y.

% ancestor(Ancessor, Descendant)

ancestor(A, D) :- parent(A, D).

ancestor(A, D) :- parent(A, X), ancestor(X, D).

QUERIES

% Who is Paul's father?

?- father(F, paul).

% Expected: F = john.

% Who are Mike's parents?

?- parent(P, mike).

% Expected: P = paul ; P = mary.

% Who are Susan's siblings?

?- sibling(susan, S).

% Expected: S = paul.

% Is John an ancestor of Anna?

?- ancestor(john, anna).

% Expected: true.

% Find all siblings in the family

?- sibling(X, Y).