Bansilal Ramnath Agarwal Charitable Trust's

Vishwakarma Institute of Technology Pune-37

(An autonomous Institute of Savitribai Phule Pune University)

Department of Computer Engineering

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Title: Implementation of predicate logic using PROLOG.

Description:

Implementation of Family Relation problem:

Creating an expert system using Prolog involves defining rules, facts, and queries to capture the knowledge and reasoning processes of an expert in a particular domain.

The facts or knowledge base in this problem is given as the relationship in the family.

'parent(A, B)' represents that 'A' is the parent of 'B'.

The steps for finding ancestors, is as follows:

1. The query, 'ancestor(A, B)' represents that 'A' is the ancestor of 'B'.
2. 'A' is the ancestor of 'B' if:
    a. 'A' is the parent of 'B';

    OR

    b. 'A' is the parent of any ancestor of 'B'. (here we use recursion)

Using the 'consult' predicate, the program is loaded. Then further queries can be run.

Code:

```
% Define family relationships
parent(john, mary).
parent(john, jim).
parent(mary, ann).
parent(mary, peter).
parent(peter, susan).

% Define rules for relationships
ancestor(X, Y) :- parent(X, Y).
ancestor(X, Y) :- parent(X, Z), ancestor(Z, Y).
```

Screenshots/Output: