



Department of Computer Science and Engineering

Lab Work

Course Title – Artificial Intelligence and Expert Systems Lab

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Submitted by:

Name- Md. Abdur Rashid

Section- A1

ID- 19101008

Submitted to:

Dr. Nasima Begum

Associate Professor

University of Asia Pacific

Problem Title: Implement a basic family relationship tree structure of your own family using Prolog

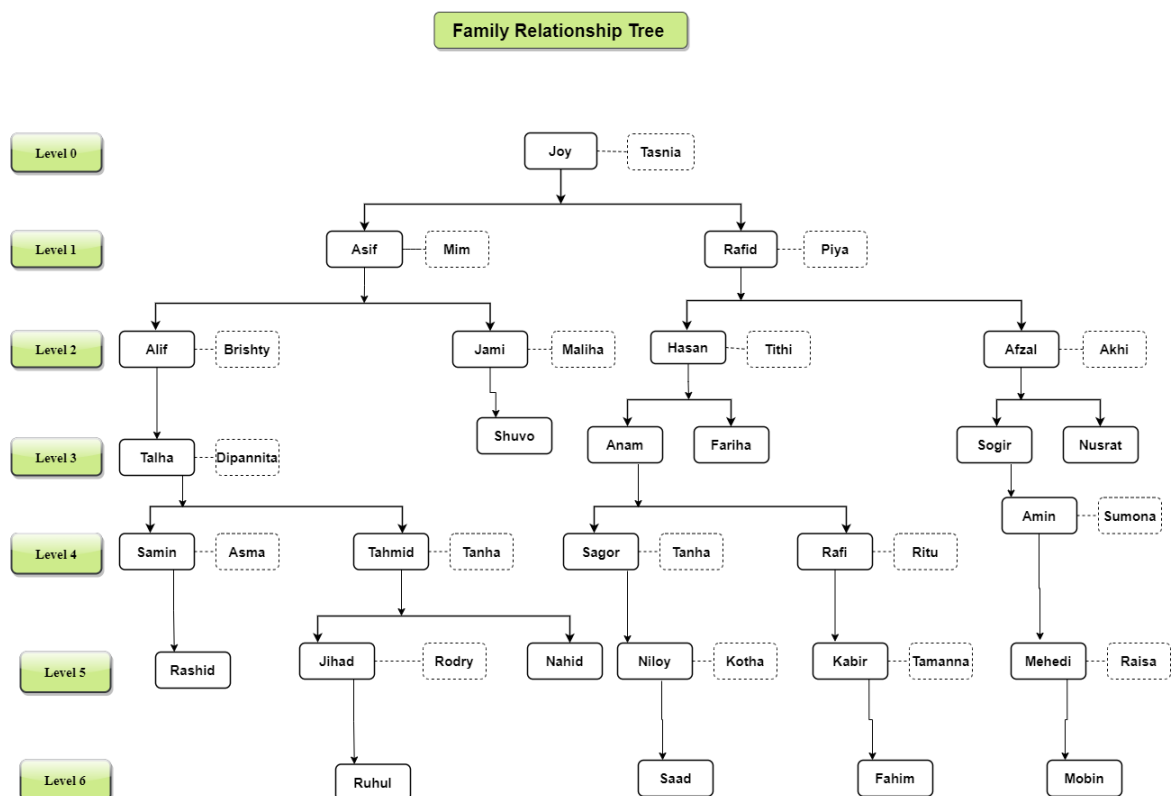
Problem Description:

Implement a basic family relationship tree structure of your own family using Prolog. Write rules against degree and removal for up to 3rd degree and twice removed situation for cousin relationship. You have to use recursion in your rules for different family relations.

Tools and Languages:

- App diagram dot net
- Notepad
- SWI-Prolog

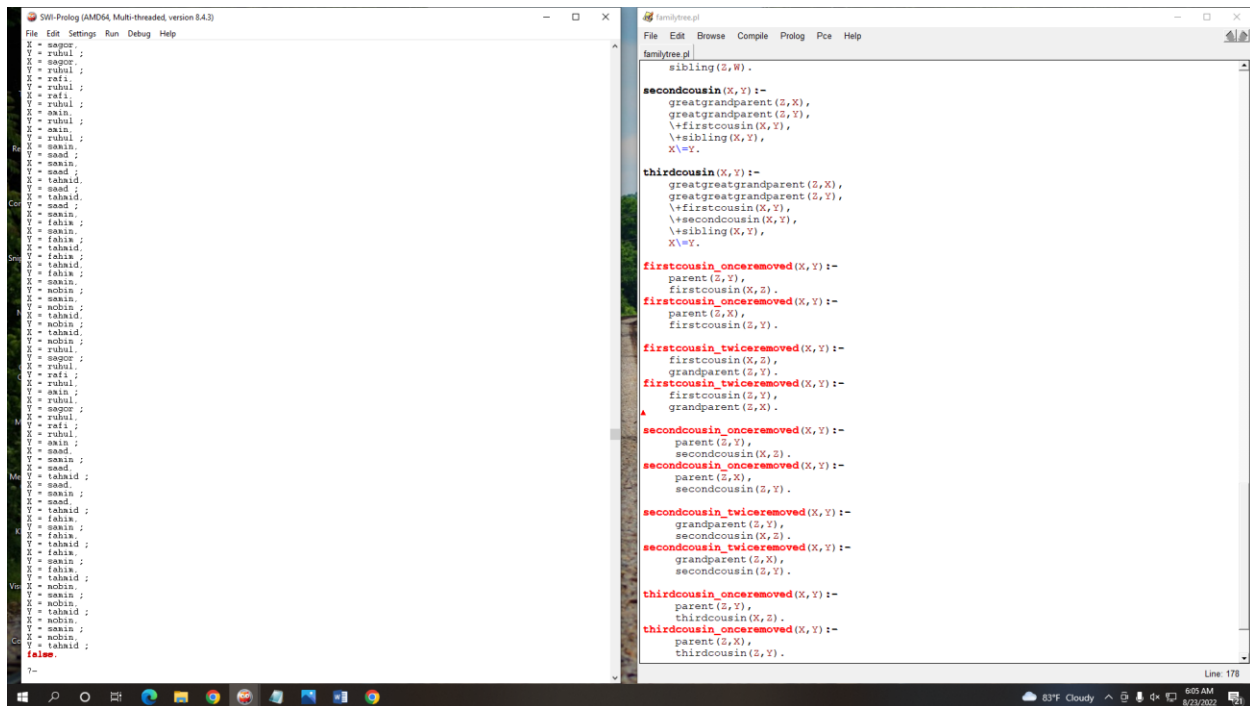
Diagram:



The above diagram is my family relationship tree structure. Now with help of SWI-Prolog, I'll remove the first, second, third cousin twice times. In the tree, all bold rectangular box represents a strong entity, and the dotted rectangular box represents a weak entity.

Sample Input/Output:

In the screenshot, here is the sample output for father, mother, parent, grandparent, great-grandparent, great great grand parent for a individual person.



The screenshot displays the SWI-Prolog IDE with two windows. The left window, titled 'SWI-Prolog (AMD64, Multi-threaded, version 8.4.3)', shows a family tree structure with names like 'sugon', 'rubul', 'reit', 'semin', 'sead', 'tahaid', 'fahin', 'nubin', and 'sugon' listed vertically. The right window, titled 'familytree.pl', contains Prolog code defining relationships and removal rules. The code includes predicates for 'sibling', 'secondcousin', 'thirdcousin', 'firstcousin_once removed', 'firstcousin_twice removed', 'secondcousin_once removed', 'secondcousin_twice removed', and 'thirdcousin_once removed'. The code is written in Prolog syntax, using variables like 'X', 'Y', 'Z', and 'W'.

And here is the sample output by removing first cousin, second cousin and third cousin first cousins, second cousin and third cousin.

Conclusion:

I had faced some minor problems during completing the assignment like code error, also could not find the desire output. I have also fix all the errors of SWI-prolog.