KJSCE/IT/SY/SEM IV/HO-IAI/2022-23

Batch: SY IT B2 Experiment Number: 6

Roll Number: 16010421073 Name: Keyur Patel

Aim of the Experiment: Write a program for implementation of solution of based a Murder Mystery using knowledge agent architecture.

Program/ Steps:

/\* Facts \*/

man(dr\_black).

man(reverend\_green).

man(colonel\_mustard).

man(professor\_plum).

woman(mrs\_peacock).

woman(madame\_rose).

woman(miss\_scarlett).

woman(mrs\_white).

victim(dr\_black).

playing\_cards(colonel\_mustard).

playing\_cards(reverend\_green).

playing\_cards(mrs\_peacock).

gardening(mrs\_white).

gardening(reverend\_green).

played\_golf(professor\_plum).

played\_golf(colonel\_mustard).

smoker(miss\_scarlett).

smoker(colonel\_mustard).

smoker(mrs\_white).

smoker(dr\_black).

smoker(mrs\_peacock).

room(room\_21).

room(room\_22).

room(room\_23).

room(room\_24).

room(room\_25).

stay\_in(dr\_black,room\_22).

stay\_in(reverend\_green,room\_24).

stay\_in(miss\_scarlett,room\_21).

stay\_in(colonel\_mustard,room\_24).

stay\_in(professor\_plum,room\_22).

stay\_in(mrs\_peacock,room\_23).

stay\_in(madame\_rose,room\_21).

stay\_in(mrs\_white,room\_23).

owns\_revolver(reverend\_green).

owns\_revolver(colonel\_mustard).

owns\_revolver(madame\_rose).

/\* Rules \*/

suspect(X):- man(X), \+victim(X).

suspect(X):- woman(X), \+victim(X).

has\_alibi(X):- suspect(X), playing\_cards(X).

went\_outside(X):- gardening(X).

went\_outside(X):- smoker(X).

went\_outside(X):- played\_golf(X).

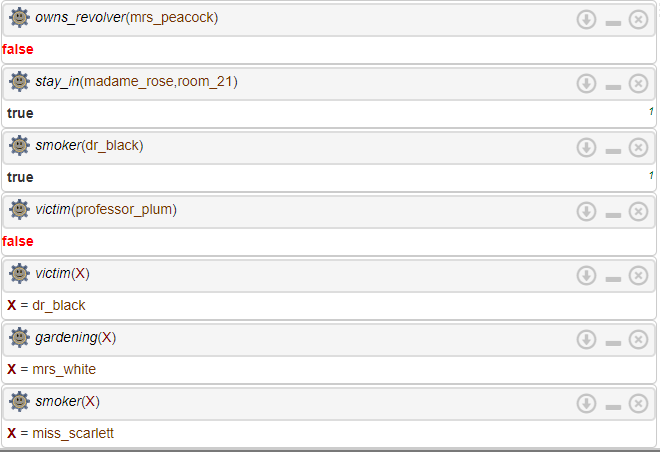
share\_room(X,Y):- room(R), stay\_in(X,R), stay\_in(Y,R), X \= Y.

revolver\_access(X):- owns\_revolver(X).

revolver\_access(X):- share\_room(X,Y), owns\_revolver(Y).

guilty(X):- suspect(X), went\_outside(X), \+has\_alibi(X), revolver\_access(X).

Output/Result:



Outcomes:

CO3: Ability to formally state the problem and develop the appropriate proof for given a logical deduction problem.

**Conclusion (based on the Results and outcomes achieved):**

With this experiment we successfully solved murder mystery using PROLOG with set rules and facts and drew appropriate conclusions.

# References:

# Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Second Edition, Pearson Publication

# Luger, George F. Artificial Intelligence : Structures and strategies for complex problem solving , 2009 ,6th Edition, Pearson Education

# https://www.101computing.net/solving-a-murder-mystery-using-prolog/

(A Constituent College of Somaiya Vidyavihar University)