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Department of Information Technology
Knowledge Systems
B.Tech. IT, SEM: VII

TITLE: DETECTIVE EXPERT SYSTEM

Project Members:

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Subject Description:-

In this Detective Expert System, we predict the murderer from clues which we will find near a dead body. In this scenario clues will be considered as factors such as gender, alibi, weapon_access. And this system is to be able to catch the killer by matching various clues.

CASE:

In this case, a man named Mr. Singh is been murdered. The murder was inside his room. He used to stay in a huge villa. There are many characters in these plot like maid, chef, butler, etc who can be considered as suspects. To find our culprit we need to find a suspect, who who has no alibi and who had access to a pistol.

Factors (Please Note that factors are according to the case which we have considered):

- Gender : Suspect is either man or woman
- Victim: The one who's been murdered
- Pistol License: Victim has been shot by pistol. So killer is having pistol license.
- Playing Cricket: Some of suspects were playing cricket outside.

Predicates:-

- male
- female
- victim
- pistol_license
- playing_cricket

Rules:

- suspect()
- has_alibi()
- guilty()

Conclusion:

Till now, we have included various facts such as gender, victim, pistol license, etc. But we are also going to add some more facts such as suspect_location at the time of murder, suspect_room, is_smoker, etc. Since this project is regarding a particular murder case so we can add as many facts as we wish.

Right now, we have added 3 rules but we are going to add some more rules to make this murder mystery more complex. We have also added a screenshot of our code below.

CODE(Up Till Now):

predicates

male(symbol)
female(symbol)
victim(symbol)
playing_cricket(symbol)
pistol_license(symbol)
suspect(symbol)
has_alibi(symbol)

/* Facts */

clauses

male(mr_singh).
male(buttler).
male(security_guard).

female(mr_singh).
female(maid).
female(chef).

victim(mr_Singh).

playing_cricket(security_guard).
playing_cricket(buttler).
playing_cricket(maid).

pistol_license(buttler).
pistol_license(security_guard).
pistol_license(maid).

/* Rules*/

suspect(X):- male(X).
suspect(X):- female(X).

has_alibi(X):- suspect(X), playing_cricket(X).

Screenshot:

The screenshot shows a Prolog IDE with the following components:

- Menu Bar:** Files, Edit, Run, Compile, Options, Setup.
- Editor:**
 - Line 26, Col 1, WORK.PRO, Indent, Insert.
 - Code:


```
female(mr_singh).
female(maid).
female(chef).
victim(mr_singh).
playing_cricket(security_guard).
playing_cricket(buttler).
playing_cricket(maid).
pistol_license(buttler).
pistol_license(security_guard).
pistol_license(maid).

suspect(X):- male(X).
suspect(X):- female(X).
has_alibi(X):- suspect(X), playing_cricket(X).
```
- Dialog:**
 - Goal: pistol_license(A)
 - A=buttler
 - A=security_guard
 - A=maid
 - 3 Solutions
 - Goal: has_alibi(B)
 - B=buttler
 - B=security_guard
 - B=maid
 - 3 Solutions
 - Goal: victim(A)
 - A=mr_singh
 - 1 Solution
 - Goal: _
- Message:**
 - suspect
 - has_alibi
 - Save WORK.PRO
 - victim
- Trace:** (Empty)
- Footer:** F2-Save F3-Load F5-Zoom F6-Next F8-Previous goal Shift-F10-Resize F10-End