

Assignment - 10

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% Expert System for Employee Performance Evaluation

% Rule base

performance(excellent) :-

is_true("has good attendance"),
is_true("completes projects on time"),
is_true("shows teamwork"),
is_true("is punctual").

performance(good) :-

is_true("has good attendance"),
is_true("completes projects on time"),
is_true("shows teamwork").

performance(average) :-

is_true("has good attendance"),
is_true("completes projects on time").

performance(poor) :-

is_true("has poor attendance").

% Dynamic predicate to store already answered questions

:- dynamic known/1.

% Asking questions

is_true(Question) :-

known(Question), !. % if already known, do nothing

is_true(Question) :-

\+ known(Question),
ask(Question).

% Ask and store the answer

ask(Question) :-

format("Does the employee ~w? (yes/no)\n", [Question]),
read(Response),
((Response == yes) -> assertz(known(Question));
fail).

```
% Clear knowledge base for next run
clear_kb :- retractall(known(_)).
```

% Start the expert system

start :-

```
    clear_kb,
    performance(Result),
    format("Employee performance is: ~w\n", [Result]), !.
```

start :-

```
    clear_kb,
    write("Not enough information to determine performance.\n").
```

The screenshot displays the SWISH Prolog IDE interface. The left pane shows a Prolog program for employee performance evaluation. The right pane shows the execution of the `start` predicate, which asks a series of yes/no questions and outputs the result "Employee performance is: excellent".

Program Code (Left Pane):

```
1 % Expert System for Employee Performance Evaluation
2
3 % Rule base
4 performance(excellent) :-
5     is_true("has good attendance"),
6     is_true("completes projects on time"),
7     is_true("shows teamwork"),
8     is_true("is punctual").
9
10 performance(good) :-
11     is_true("has good attendance"),
12     is_true("completes projects on time"),
13     is_true("shows teamwork").
14
15 performance(average) :-
16     is_true("has good attendance"),
17     is_true("completes projects on time").
18
19 performance(poor) :-
20     is_true("has poor attendance").
21
22 % Dynamic predicate to store already answered questions
23 :- dynamic known/1.
24
25 % Asking questions
26 is_true(Question) :-
27     known(Question), !. % if already known, do nothing
28 is_true(Question) :-
29     \+ known(Question),
30     ask(Question).
31
32 % Ask and store the answer
```

Execution Output (Right Pane):

```
start.
Does the employee has good attendance? (yes/no)
yes
Does the employee completes projects on time? (yes/no)
yes
Does the employee shows teamwork? (yes/no)
yes
Does the employee is punctual? (yes/no)
yes
Employee performance is: excellent
true
```

The right pane also shows a prompt for the next query: `?- start.`