

Assignment No: 10

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Problem Statement: Implement any one of the following Expert System

- I. Information management
- II. Hospitals and medical facilities
- III. Help desks management
- IV. Employee performance evaluation
- V. Stock market trading
- VI. Airline scheduling and cargo schedules

Program:

Expert System For Medical Diagnosis

go:-

hypothesis(Disease),

write('I believe you have: '),

write(Disease),

nl,

undo.

/* Hypothesis that should be tested */

hypothesis(cold) :- cold, !.

hypothesis(flu) :- flu, !.

hypothesis(ebola) :- ebola, !.

hypothesis(measles) :- measles, !.

hypothesis(arthritis) :- arthritis, !.

hypothesis(unknown). /* No diagnosis */

/*Hypothesis Identification Rules */

cold :-

verify(headache),

verify(runny_nose),

```
verify(sneezing),  
verify(sore_throat).
```

flu :-

```
verify(fever),  
verify(headache),  
verify(chills),  
verify(body_ache).
```

ebola :-

```
verify(headache),  
verify(rash),  
verify(nausea),  
verify(bleeding).
```

measles :-

```
verify(fever),  
verify(runny_nose),  
verify(rash),  
verify(conjunctivitis).
```

arthritis :-

```
verify(pain_in_joints),  
verify(stiffness_in_joints),  
verify(fatigue).
```

/* How to ask questions */

ask(Question) :-

```
write('Does the patient have following symptoms: '),  
write(Question),  
write('? '),  
read(Response),
```

```
nl,  
( (Response == yes ; Response == y))  
->  
assert(yes(Question));  
assert(no(Question)),fail.
```

:- dynamic yes/1,no/1.

/* How to verify something */

verify(S) :-

(yes(S) -> true;

(no(S) -> fail;

ask(S))).


/* Undo all yes/no assertions */

undo :- retract(yes(_)),fail.

undo :- retract(no(_)),fail.

undo.

OUTPUT:

 SWI-Prolog -- c:/Users/User/Downloads/Expert-System.pl

File Edit Settings Run Debug Help

Welcome to SWI-Prolog (threaded, 64 bits, version 8.4.2)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run `?- license.` for legal details.

For online help and background, visit <https://www.swi-prolog.org>
For built-in help, use `?- help(Topic).` or `?- apropos(Word).`

`?- go.`

Does the patient have following symptoms: headache? `y.`

Does the patient have following symptoms: runny_nose? `|: y.`

Does the patient have following symptoms: sneezing? `|: y.`

Does the patient have following symptoms: sore_throat? `|: y.`

I believe you have: cold

true.

`?- go.`

Does the patient have following symptoms: headache? `n.`

Does the patient have following symptoms: fever? `|:`
 `|: n.`

Does the patient have following symptoms: pain_in_joints? `|: n.`

I believe you have: unknown

true.

`?- go.`

Does the patient have following symptoms: headache? `y.`

Does the patient have following symptoms: runny_nose? `|: n.`

Does the patient have following symptoms: fever? `|: n.`

Does the patient have following symptoms: rash? `|: y.`

Does the patient have following symptoms: nausea? `|: y.`

Does the patient have following symptoms: bleeding? `|: y.`

I believe you have: ebola

true.

`?- █`