CAREER ADVISORY SYSTEM IN PROLOG

-SHRADHA AGARWAL

-ENROLLMENT NO.: MT20123

Description:

The following career advisory system ask questions and suggests what the customer should take on as a career after MTech. The varied career options covered are start-up, PhD, teaching, corporate job and none of these. There are five questions for each of the career options except none of the above. If the customer responds to at least four of the questions correct for the respective career option, then the system advices that particular career. The responses are to be given either as 1. or 0., this is specified in the query itself.

The various concepts of Prolog covered are recursion, backtracking, cut, Input/Output, dynamic database access using assert and retract. Also, the validation check on input is covered. This includes checking if the customer gives input other than 1 and 0, and asking him/her to enter a valid input.

Code:

```
/* Run the program by calling careeradvisory. */

careeradvisory :-

    write('Welcome to Career Advisory System.'),nl,fail.

careeradvisory :-

        retractall(response(_,_)), option(Career),!, printmsg(Career), nl, fail.

careeradvisory :-

        write('Thanks for coming to my career advisory system. Happy to serve you. :)'), nl.


/* To check if required values, i.e, either 0 or 1, are inserted by the user. */

read_response(Response) :-

  read(TmpResponse),(TmpResponse = 0; TmpResponse = 1),!, Response = TmpResponse ; (write('Write either 1 or 0.'), nl, read_response(Response)).


/* Various queries */

query(1,A1):- write('What type of projects you have done: write 1 for Learning based 0 for research based'),nl,read_response(A1),assert(response(1,A1)).

query(2,A2):- write('Did you do TAship, if yes, did youenjoy doing it? 1 for yes, 0 for no'),nl, read_response(A2),assert(response(2,A2)).

query(3,A3):- write('Do you have any novel idea that can transform present technology? 1 for yes, 0 for no'),nl, read_response(A3),assert(response(3,A3)).

query(4,A4):- write('Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no'),nl, read_response(A4), assert(response(4,A4)).

query(5,A5):- write('Are you interested in academia? 1 for yes, 0 for no.'),nl,read_response(A5), assert(response(5,A5)).
```

query(6,A6):- write('Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0 for no'),nl,read_response(A6),assert(response(6,A6)).

query(7,A7):- write('Do you have any published paper/journal? 1 for yes, 0 for no'),nl,read_response(A7), assert(response(7,A7)).

query(8,A8):- write('Do you have thirst for knowledge and likes to read books on a particular topic? 1 for yes, 0 for no'),nl,read_response(A8), assert(response(8,A8)).

query(9,A9):- write('Do you like to have a structured life. 1 for yes, 0 for no'),nl,read_response(A9), assert(response(9,A9)).

query(10,A10):- write('Do you like to try out different things and have creative thinking? 1 for yes, 0 for no'),nl,read_response(A10), assert(response(10,A10)).

query(11,A11):- write('Do you have seeding money? 1 for yes, 0 for no'),nl,read_response(A11), assert(response(11,A11)).

query(12,A12):- write('Are you the person who would love to promote learning? 1 for yes, 0 for no'),nl,read_response(A12), assert(response(12,A12)).

query(13,A13):- write('Are you a team player? 1 for yes, 0 for no'),nl,read_response(A13), assert(response(13,A13)).

```
/* checking if query already asked before. */
check(Num,Res):- response(Num,Res),!.
check(Num,Res):- query(Num,Res).


/* Checking various options */
option(startup) :-
 (
   ( query(1,A1), A1=0, query(3,A3), A3=1, query(6,A6), A6=1, query(10,A10), A10=1, query(11,A11), A11=1
);
        ( response(1,A1), A1=0, check(3,A3), A3=1, check(6,A6), A6=1, check(10,A10), A10=1 );
        ( response(1,A1), A1=0, check(3,A3), A3=1, check(6,A6), A6=1, check(11,A11), A11=1 );
        ( response(1,A1), A1=0, check(3,A3), A3=1, check(10,A10), A10=1,check(11,A11), A11=1 );
        ( response(1,A1), A1=0, check(6,A6), A6=1, check(10,A10), A10=1, check(11,A11), A11=1 );
        ( check(3,A3), A3=1, check(6,A6), A6=1, check(10,A10), A10=1, check(11,A11), A11=1 )
 ).


option(teaching) :-
 (
   ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 );
        ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1 );
        ( check(12,A12), A12=1, check(4,A4), A4=1, check(5,A5), A5=1, check(2,A2), A2=1 );
```

```prolog
            ( check(12,A12), A12=1, check(4,A4), A4=1, check(9,A9), A9=1, check(2,A2), A2=1     );

            ( check(12,A12), A12=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 );

            ( check(4,A4), A4=1, check(5,A5), A5=1, check(9,A9), A9=1, check(2,A2), A2=1 )

   ).

option(phd) :-
  (
    ( response(1,A1), A1=0, check(5,A5),A5=1, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4), A4=0 );


            ( response(1,A1), A1=0, check(5,A5), A5=1, check(7,A7), A7=1, check(8,A8), A8=1 );

            ( response(1,A1), A1=0, check(5,A5), A5=1, check(7,A7), A7=1, check(4,A4), A4=0 );

            ( response(1,A1), A1=0, check(5,A5), A5=1, check(8,A8), A8=1, check(4,A4), A4=0 );

            ( response(1,A1), A1=0, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4), A4=0 );

            ( check(5,A5), A5=1, check(7,A7), A7=1, check(8,A8), A8=1, check(4,A4), A4=0 )

   ).


option(job) :-
  (
    ( response(1,A1),A1=1, check(4,A4),A4=1, check(5,A5),A5=0, check(9,A9),A9=1, check(13,A13),A13=1 );
            ( response(1,A1), A1=1, check(4,A4), A4=1, check(5,A5), A5=0, check(9,A9), A9=1     );
    ( response(1,A1), A1=1, check(4,A4), A4=1, check(5,A5), A5=0, check(13,A13), A13=1 );

            ( response(1,A1), A1=1, check(4,A4), A4=1, check(9,A9), A9=1, check(13,A13), A13=1 );

            ( response(1,A1), A1=1, check(5,A5), A5=0, check(9,A9), A9=1, check(13,A13), A13=1 );

            ( check(4,A4), A4=1, check(5,A5), A5=0, check(9,A9), A9=1, check(13,A13), A13=1 )

   ).


option(notfound).



/* Display career choice */
printmsg(job) :-
        write('Based on the responses to the various questions asked, you should go for Corporate Job.'), nl.
printmsg(phd) :-
        write('Based on the responses to the various questions asked, you should go for PhD.'), nl.
printmsg('startup') :-
        write('Based on the responses to the various questions asked, you should go for Startup.'), nl.
```

printmsg('teaching') :-

write('Based on the responses to the various questions asked, you should go for Teaching.'), nl.

printmsg('notfound'):-

write('Based on the responses to the various questions asked, no career choice could be found.'),nl.

Results:

1. Teaching:


```
SWI-Prolog (Multi-threaded, version 8.0.3)
File  Edit  Settings  Run  Debug  Help
For online help and background, visit http://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 1.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 1.
Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0 for no
|: 1.
Do you like to try out different things and have creative thinking? 1 for yes, 0 for no
|: 1.
Do you have seeding money? 1 for yes, 0 for no
|: 0.
Are you the person who would love to promote learning? 1 for yes, 0 for no
|: 1.
Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no
|: 1.
Are you interested in academia? 1 for yes, 0 for no.
|: 1.
Do you like to have a structured life. 1 for yes, 0 for no
|: 1.
Did you do TAship, if yes, did youenjoy doing it? 1 for yes, 0 for no
|: 1.
Based on the responses to the various questions asked, you should go for Teaching.

false.

?-
```

2. Start-up:

File Edit Settings Run Debug Help

Welcome to SWI-Prolog (threaded, 32 bits, version 8.0.3)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

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

?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 1.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 1.
Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0 for no
|: 1.
Do you like to try out different things and have creative thinking? 1 for yes, 0 for no
|: 1.
Do you have seeding money? 1 for yes, 0 for no
|: 1.
Based on the responses to the various questions asked, you should go for Startup.

false.

?-

3. Corporate Job:

File Edit Settings Run Debug Help

Please run ?- license. for legal details.

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

?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 1.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 0.
Are you the person who would love to promote learning? 1 for yes, 0 for no
|: 0.
Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no
|: 1.
Are you interested in academia? 1 for yes, 0 for no.
|: 1.
Do you like to have a structured life. 1 for yes, 0 for no
|: 1.
Did you do TAship, if yes, did youenjoy doing it? 1 for yes, 0 for no
|: 0.
Do you have any published paper/journal? 1 for yes, 0 for no
|: 0.
Are you a team player? 1 for yes, 0 for no
|: 1.
Based on the responses to the various questions asked, you should go for Corporate Job.

false.

?-

4. PhD

```
?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 0.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 1.
Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0 for no
|: 0.
Do you like to try out different things and have creative thinking? 1 for yes, 0 for no
|: 1.
Do you have seeding money? 1 for yes, 0 for no
|: 0.
Are you the person who would love to promote learning? 1 for yes, 0 for no
|: 1.
Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no
|: 0.
Are you interested in academia? 1 for yes, 0 for no.
|: 1.
Do you like to have a structured life. 1 for yes, 0 for no
|: 0.
Do you have any published paper/journal? 1 for yes, 0 for no
|: 1.
Do you have thirst for knowledge and likes to read books on a particular topic? 1 for yes, 0 for no
|: 1.
Based on the responses to the various questions asked, you should go for PhD.

false.

?-
```

5. None of the above:

File   Edit   Settings   Run   Debug   Help

Welcome to SWI-Prolog (threaded, 32 bits, version 8.0.3)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

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

?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: 1.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: 0.
Are you the person who would love to promote learning? 1 for yes, 0 for no
|: 1.
Do you have immediate monetary responsibility for your family/dependents? write 1 if yes, 0 for no
|: 1.
Are you interested in academia? 1 for yes, 0 for no.
|: 0.
Do you like to have a structured life. 1 for yes, 0 for no
|: 0.
Are you a team player? 1 for yes, 0 for no
|: 0.
Based on the responses to the various questions asked, no career choice could be found.

false.

?-

6.   Input error:

Please run ?- license. for legal details.

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

?- consult('C:/Users/Admin/Desktop/Sem1/AI/Assignment1_graded/new1.pl').
true.

?- careeradvisory.
Welcome to Career Advisory System.
What type of projects you have done: write 1 for Learning based 0 for research based
|: research.
Write either 1 or 0.
|: 0.
Do you have any novel idea that can transform present technology? 1 for yes, 0 for no
|: yes.
Write either 1 or 0.
|: 1.
Do you have risk taking capability and likes taking challenges in life? 1 for yes, 0 for no
|: y.
Write either 1 or 0.
|: yes.
Write either 1 or 0.
|: 1.
Do you like to try out different things and have creative thinking? 1 for yes, 0 for no
|: 1.
Do you have seeding money? 1 for yes, 0 for no
|: 1.
Based on the responses to the various questions asked, you should go for Startup.

false.

?-