

# AI – Assignment 1

Elective's advisory / prediction system in Prolog for MTech CSE students of IITD.

## Assumption:

- User is a student of MTech CSE in IITD.

In this advisory system, a student is asked several questions regarding the career he/she wants to take up in the near future on which then the electives are advised.

## Source Code:

```
start:- nl,write('.....This is a M.Tech Electives Advisory System.....'),nl,
        write('.....Please answer the questions given below.....'),nl,nl,
        reset,student_info,generate_electives,convert_to_list(Electives),nl,
        write("The recommended list of electives is as following: ' '),nl,
        write(Electives).
```

// reset is used so that there are no duplicate values in the output list.

reset:-

```
    retractall(aa(_)),retractall(branch(_)),retractall(cgpa(_)),retractall(future(_)),
    fail.
```

reset.

student\_info:-

course\_grades,info\_programming,future\_ml,future\_ai,future\_networking,future\_informations  
ecurity,future\_graphics,future\_data,future\_higherstudies.

course\_grades:-

```
    write('Enter your branch '),read(X),assert(branch(X)),
    write('Enter your Undergraduate CGPA '),read(Marks),assert(cgpa(Marks)),nl,
    write('Please answer with y or n only. '),nl,
    write('Do you have a strong grasp of mathematics and statistics?'),read(Y),Y == y,
    assert(aa(ms)),nl,
```

```
write('Are you considering a career in:'),nl.
```

info\_programming:-

```
write('Programming?'),read(Y),Y == y,  
assert(aa(programming)).
```

info\_programming.

future\_ml:-

```
write('Machine learning field?'),read(Y),Y == y,  
assert(future(ml)).
```

future\_ml.

future\_ai:-

```
write('Artificial Intelligence field?'),read(Y),Y == y,  
assert(future(ai)).
```

future\_ai.

future\_data:-

```
write('Data mining and warehousing Field?'),read(Y),Y == y,  
assert(future(data)).
```

future\_data.

future\_networking:-

```
write('Networking field?'),read(Y),Y == y,  
assert(future(networking)).
```

future\_networking.

future\_graphics:-

```
write('Graphic designing?'),read(Y),Y == y,
```

```
    assert(future(graphics)).
future_graphics.
```

```
future_informationsecurity:-
    write('Information Security?'),read(Y),Y == y,
    assert(future(is)).
future_informationsecurity.
```

```
future_higherstudies:-
    nl,
    write('Do you want to study further? '),read(Y),Y == y,
    assert(interested(higher_studies)).
future_higherstudies.
```

```
convert_to_list([Px|Tail]):- retract(recommended(Px)), convert_to_list(Tail).
convert_to_list([]).
```

```
generate_electives:- aa(ms), cgpa(M),M >= 7.5,future(ml),
    assert(recommended(machinelearning_Or_Statisticalmachinelarning)),
    fail.
```

```
generate_electives:- aa(ms), cgpa(M),M >= 7.5,future(ai),
    assert(recommended(artificialIntelligence_Or_IntelligentSystems)),
    fail.
```

```
generate_electives:- aa(ms),aa(programming),cgpa(M),M >= 6.5,
    assert(recommended(program_analysis)),
    fail.
```

```
generate_electives:- aa(ms),aa(programming),cgpa(M),M >= 6.5,
    assert(recommended(graduateAlgorithm_Or_ModernAlgorithmDesign)),
    fail.
```

```
generate_electives:- aa(ms),cgpa(M),M >= 6.5,future(data),
    assert(recommended(dataMining)),
    fail.
```

```
generate_electives:- aa(ms),cgpa(M),M >= 6.5,future(data),
    assert(recommended(bigBataAnalytics)),
    fail.
```

```
generate_electives:- future(graphics),future(is),cgpa(M),M >= 6,
    assert(recommended(computerArchitecture)),
    fail.
```

```
generate_electives:- future(graphics),future(is),cgpa(M),M >= 6,
    assert(recommended(ethicalhacking)),
    fail.
```

```
generate_electives:- future(graphics),cgpa(M),M >= 6,
    assert(recommended(computerGraphics)),
    fail.
```

```
generate_electives:- future(ai),future(ml),cgpa(M),M >= 8,aa(maths),future(higher_studies),
    assert(recommended(artificial_intelligence_and_machinelearning)),
    fail.
```

```
generate_electives:- future(networking),cgpa(M),M >= 6.5,aa(maths),
    assert(recommended(embeddedsystems)),
    fail.
```

```
generate_electives:- future(networking),cgpa(M),M >= 6.5,aa(maths),
```

```
assert(recommended(mobilecomputing_and_embeddedsystems_and_mobileandcellularnetwo
rksecurity)),
    fail.
```

```
generate_electives:- future(networking),cgpa(M),M >= 6.5,aa(maths),
    assert(recommended(wirelessnetworks_and_networksecurity_and_distributedsystems)),
    fail.
```

```
generate_electives:-
    nl,write('.....Thank you for your responses.....'),nl.
```

## Output:

```
SWI-Prolog (AMD64, Multi-threaded, version 8.2.4)
File Edit Settings Run Debug Help
% c:/Users/sehba/Documents/Prolog/ttt.pl compiled 0.00 sec, 37 clauses
?- start.

.....This is a M.Tech Electives Advisory System.....
.....Please answer the questions given below.....

Enter your branch cse.
Enter your Undergraduate CGPA |: 9.

Please answer with y or n only.
Do you have a strong grasp of mathematics and statistics?:|: y.

Are you considering a career in:
Programming?:|: n.
Machine learning field?:|: y.
Artificial Intelligence field?:|: n.
Networking field?:|: n.
Information Security?:|: n.
Graphic designing?:|: n.
Data mining and warehousing Field?:|: y.

Do you want to study further? |: n.

.....Thank you for your responses.....

The recommended list of electives is as following:
[machinelearning_Or_Statisticalmachinelearning,dataMining,bigBataAnalytics]
true .

?- start.

.....This is a M.Tech Electives Advisory System.....
.....Please answer the questions given below.....

Enter your branch cse.
Enter your Undergraduate CGPA |: 9.

Please answer with y or n only.
Do you have a strong grasp of mathematics and statistics?:|: y.

Are you considering a career in:
Programming?:|: y.
Machine learning field?:|: y.
Artificial Intelligence field?:|: n.
Networking field?:|: n.
Information Security?:|: n.
Graphic designing?:|: n.
Data mining and warehousing Field?:|: y.

Do you want to study further? |: n.

.....Thank you for your responses.....

The recommended list of electives is as following:
[machinelearning_Or_Statisticalmachinelearning,program_analysis,graduateAlgorithm_Or_ModernAlgorithmDesign,dataMining,bigBataAnalytics]
true .

?-
```

?- start.

.....This is a M.Tech Electives Advisory System.....  
.....Please answer the questions given below.....

Enter your branch cse.

Enter your Undergraduate CGPA |: 8.

Please answer with y or n only.

Do you have a strong grasp of mathematics and statistics?|: y.

Are you considering a career in:

Programming?|: y.

Machine learning field?|: n.

Artificial Intelligence field?|: y.

Networking field?|: n.

Information Security?|: n.

Graphic designing?|: n.

Data mining and warehousing Field?|: y.

Do you want to study further? |: y.

.....Thank you for your responses.....

The recommended list of electives is as following:

[artificialIntelligence\_Or\_IntelligentSystems,program\_analysis,graduateAlgorithm\_Or\_ModernAlgorithmDesign,dataMining,bigBataAnalytics]  
**true** .

?- █

?- start.

.....This is a M.Tech Electives Advisory System.....  
.....Please answer the questions given below.....

Enter your branch cse.

Enter your Undergraduate CGPA |: 9.

Please answer with y or n only.

Do you have a strong grasp of mathematics and statistics?|: y.

Are you considering a career in:

Programming?|: y.

Machine learning field?|: y.

Artificial Intelligence field?|: y.

Networking field?|: n.

Information Security?|: n.

Graphic designing?|: n.

Data mining and warehousing Field?|: y.

Do you want to study further? |: n.

.....Thank you for your responses.....

The recommended list of electives is as following:

[machinelearning\_Or\_Statisticalmachinelearning,artificialIntelligence\_Or\_IntelligentSystems,program\_analysis,graduateAlgorithm\_Or\_ModernAlgorithmDesign,dataMining,bigB  
ataAnalytics]  
**true** .

?- █