ARTIFICIAL INTELLIGENCE

ASSIGNMENT 1 | REPORT

Assumptions

1. It is an electives advisory system and not a prediction system.
2. The system is made by taking into account a BTech 4th year student.
3. No GPA based classification is done as in my opinion it is not the right thing to do to classify courses to be done on the amount of GPA one has.
4. Difficulty level of the courses had also been not taken into consideration as again it is a very subjective concept, a course which might be very simple for person x might be the most difficult thing person y ever did.
5. Multiple features of prolog have been used to create the electives system.
6. The course data is obtained from http://techtree.iiitd.edu.in/ and is used as it is.
7. The mandatory courses data is obtained from https://www.iiitd.ac.in/academics/btech and is used as it is. Only the courses which do not have an alternative are added as mandatory courses.
8. The courses required for minors are obtained from https://www.iiitd.ac.in/academics/resources and is used as it is. Only the courses which do not have an alternative are added as mandatory courses. Minors in quantum mechanics is not considered while making the reccomendations.
9. Suggestions for career related courses are totally on the discretion of the programmer.

Working

1. To start the program, the user has to call the *start* function.
2. The program starts by asking the user to enter the semester type (monsoon/winter).
3. This is followed by asking the user to enter the user's branch.
4. The user is prompted to enter any new courses which needs to be added to the database (if any new courses have been offered).
5. To add new courses, one has to enter it's code, abbreviation, name, pre-reqs, anti-reqs, the course department name and the semester type it would be offered in.
6. The user can enter more than 1 new courses too.

```
swipl
?- [electiveAdvisorySystem].
true.

?- start.
Elective Advisory System for IIITD Btech Students
Enter the semester type (monsoon/winter):
|: winter.
Enter the branch name (cse/ ece/ csai/ csam/ csb/ csss/ csd):
|: cse.
Are there new courses you want to add? (y/n):
|: y.
Enter the course code:
|: 'CSE999'.
Enter the course abbreviation:
|: 'NRC'.
Enter the course name:
|: 'New Random Course'.
Enter the pre-requisites: (done to stop)
Enter the course name:
|: 'CSE101'.
Enter the course name:
|: done.
Enter the anti-requisites: (done to stop)
Enter the course name:
|: done.
Enter the course department name (cse/ece/mth/bio/des/ssh/oth):
|: cse.
Enter the course semester type (monsoon/winter):
|: winter.
Are there new courses you want to add? (y/n):
|: n
```

7. Then the system asks the user whether the user wants to delete any of the previously offered courses.
8. To delete the course, one just needs to enter the course abbreviation.
9. One can delete more than one courses too.
10. After that the user is prompted to enter the courses done by the user in the previous semesters.
11. Once the user enters the courses, the system tells the user the core courses which are available to the user to do in the current semester given the prereqs and antireqs done.

```
Are there courses you want to delete? (y/n):
|: y.
Enter the course abbreviation to delete:
|: 'DSA'.
Do you want to delete more courses? (y/n):
|: n.
Enter the courses done in the previous semester: (type done to stop)
Enter the course name:
|: 'IP'.
Enter the course name:
|: 'COM'.
Enter the course name:
|: done.
Core Courses to do are:
ECE113 BE Basic Electronics
MTH201 P&S Probability and Statistics
Congratulations, No More Core Courses to do!
```

12. After this the system asks the user whether the user wants to do a minor or not.
13. If yes, the system tells the user the mandatory courses to be done for the selected minor program, which are available to the user to do in the current semester given the prereqs and antireqs done.
14. After this, the user is asked whether the user wants any career related course advice or not.
15. If yes, the system asks for the career related path the user wants and suggests the courses which can be done for the provided career path, given the set of antireqs and prereqs done.

```
Do you want plan to do any minors? (eco: Economics, bio: Computational Biology, ent: Entrepreneurship, no: do not want to do an
y minors)|: eco.
Minor Courses to do are:
ECO301 ME Microeconomics
MTH201 P&S Probability and Statistics
Congratulations, No More Core Courses to do!
Do you want career specific courses? (y/n)|: y.
Enter the career preference (ml: Machine Learning/ Data Science, bd: Big Data, sec: Security Related):
|: bd.
Congratulations, No More Core Courses to do!
Do you want career specific courses? (y/n)|: y.
Enter the career preference (ml: Machine Learning/ Data Science, bd: Big Data, sec: Security Related):
|: ml.
Suggested courses for your career preference:
MTH201 P&S Probability and Statistics
CSE641/ESE553 DL Deep Learning
Congratulations, No More Core Courses to do!
```

16. After this the system asks the user what all courses the user plans to do in the current semester. This might include any of the suggestions generated above or some other course the user might have in mind.
17. After this the user is asked about the department name whose courses the user wants as suggestions.

```
Enter the courses you have already decided to do in the current semester: (type done to stop)
Enter the course name:
|: 'ME'.
Enter the course name:
|: 'P&S'.
Enter the course name:
|: 'ADA'.
Enter the course name:
|: done.
Enter the department name (cse/ece/mth/bio/des/ssh/oth):
|: cse.
CSE531 MAS Multi-Agent Systems
CSE577 AIOT Advanced Internet of Things
CSE641/ESE553 DL Deep Learning
CSE560 GPU GPU Computing
CSE140 IIS Introduction to Intelligent Systems
CSE577 MLRC Machine Learning Techniques for Real-time Control
CSE563 MCA Multimedia Computing and Applications
CSE655 NS Network Science
CSE645 PSOSM Privacy and Security in Online Social Media
CSE633/ECE670 IRob Robotics
CSE633A SR Social Robotics
CSE581 SADRE Systems Analysis, Design and Requirements Engineering
CSE793A TC Topics in Cryptanalysis
CSE570 VR Virtual Reality
CSE999 NRC New Random Course
true .
```