CS561/571 - ARTIFICIAL INTELLIGENCE LAB

ASSIGNMENT-6: PROLOG

(Read all the instructions carefully & adhere to them.)

Date: 10th October, 2022 **Deadline: 16th October, 2022**

Total Credit: 30

Instructions:

1. The assignment should be completed and uploaded by **16th Oct, 2022, 11:59 PM IST.**
2. Markings will be based on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism.
3. Proper indentation and appropriate comments are mandatory.
4. Make proper documentation of all results and observations with their analysis.
4. You should zip all the required files and name the zip file as: **roll_no_of_all_group_members .zip , eg. 1501cs11_1201cs03_1621cs05.zip.**
5. Upload your assignment (**the zip file**) in the following link: https://www.dropbox.com/request/o6bFYHr74bw7noVw3PHU

For any queries regarding this assignment you can contact:
Aizan Zafar (aizanzafar@gmail.com) or
Kshitij Mishra (kmishra.kings@gmail.com)

Questions

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1. Deduction Theorem

Given an expression, write a program to decide whether it's a theorem or not.

Steps:

1. Write a parser to isolate the clauses around the implication in the expressions

Test Cases :

1. (P => Q) => ((~Q => P) => Q)
2. P => (P V Q)
3. (P ^ Q) => (P V R)

2. Prolog Programing

Q. Write a program in Prolog to represent the following knowledge and find the answer to the given questions

a. Knowledge

A, B and C belong to Himalayan club. Every member in the club is either a mountain climber or skier or both. A likes whatever B dislikes and dislikes whatever B likes. A likes rain and snow. No mountain climber likes rain. Every skiers likes snow

Question : Is there a member who is a mountain climber but not a skier?