Artificial Intelligence (CS571)

Department of CSE, IIT Patna

Assignment-3

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

Date: -16-Oct-2020   **Deadline**:-22 -Oct-2020

Instructions:

1. Markings will be based on the correctness and soundness of the outputs.
2. Marks will be deducted in case of plagiarism.
3. Proper indentation and appropriate comments (if necessary) are mandatory.
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/Crim1ksa6FhNSs9SZAIm

For any queries regarding this assignment contact:

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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. $(P \Rightarrow Q) \Rightarrow ((\sim Q \Rightarrow P) \Rightarrow Q)$

2. $P \Rightarrow (P \lor Q)$

3. $(P \land Q) \Rightarrow (P \lor R)$

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 mountain climber but not a skier?