Artificial Intelligence (CS571)
Assignment-3: Logic

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

Date: 28-8-2018

A. Deduction Theorem:

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

Steps:

1. Write a parser to isolate the clauses around the implication in the expression.
2. Code *Left Hand Manager* such that False (F) is derived.

Test cases:

i. $(P \rightarrow Q) \rightarrow ((\sim Q \rightarrow P) \rightarrow Q)$

ii. $P \rightarrow (P \vee Q)$

iii. $(P \wedge Q) \rightarrow (P \vee Q)$

B. Prolog Programming:

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

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

Question: Is there a member who is a mountain climber and not a skier? using Prolog