Artificial Intelligence (CS571)
Assignment-3: Logic Programming

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

Date: 14-08-2019   **Deadline: 16-08-2019, 5 PM**

1. 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 the rain. Every skier likes snow. Write a Prolog program to implement the above facts and verify if there is a member who is a mountain climber and not a skier?

2. Write a Prolog program to implement a 2-bit full adder and then verify if
    a. the circuit meets the specifications?
    b. there are faults?
    c. they are locatable?

   Consider the following functions and predicates:
   - type(X) : takes values AND, OR NOT and XOR, where X is a gate
   - in(n, X) : the value of signal at the nth input of gate X
   - out(X) : output of gate X
   - signal(t) : state at terminal t = 1/0
   - connected(t_1,t_2): true, if terminal t_1 and t_2 are connected

   Instructions:
   - Please submit your assignment here: https://bit.ly/2Z5ryur
   - The submission file should be as follows:
     Group-NUMBER Assignment-NUMBER.zip