Level-3

1> Develop a program which checks whether the given Boolean expression is Tautology or not. Boolean expression may consist of any number of Boolean variables and any combination of Boolean operators (AND, OR and NOT). (15 marks)

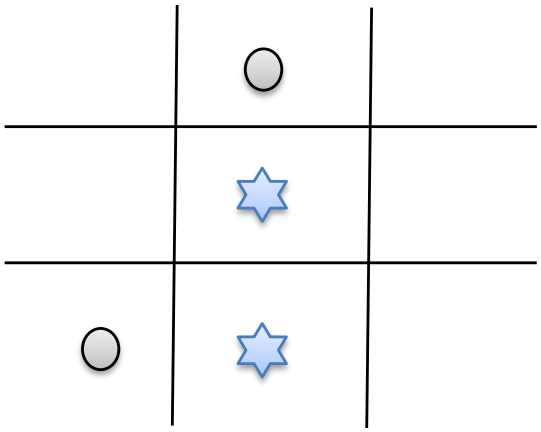
Sample:

Input: P OR (Q AND R)
Output: Not tautology

Input: (Q OR NOT Q) AND (NOT P OR P)
Output: Tautology

2> Develop a Tic-Tac-To game (Computer Vs. player). (15 marks)

Sample output:



(Use of graphics is optional you can use any suitable convention)

3> A well-known formula in Boolean mathematics is:-

A EX-OR (A EX-OR B) = B
B EX-OR (A EX-OR B) = A

Implement the above concept in singly linked list in order to traverse it in both the forward and backward directions. (15 marks)