# CS3096 Computational Intelligence Laboratory

**Assignment1**                    30/07/2018

Implement the following  programs using LISP

1. Solve the Farmer, Wolf, Goat and Cabbage Problem.

(*Note: A farmer with his wolf, goat and cabbage come to the bank of a river which they wish to cross. There is a  boat on the bank of the river and the farmer knows to row it. But, the boat can only carry two things at a time . If the wolf is ever left alone with the goat, the wolf will eat the goat; similarly the goat will eat the cabbage if they are left alone.  The program should output a sequence of steps using which the farmer can safely cross the river with his belongings*)

2. Solve the Water Jug Problem.

(*Note: The problem is explained in the class. The program is expected to output the sequences of steps required to produce the required amount of water in the jug specified. The capacities of the jugs and the goal state should be given as input*).

For searching the state space please try to use the following algorithms for the above two problems:

a) Depth First Search

b) Breadth first Search

3. Implement the 8-Puzzle problem using Best first search.(Use an admissible heuristic so that your algorithm becomes A*).