OR-Lab 7 (24.02.2021)

Problem 1: -

Make a **menu driven program** using Revised-Simplex with the following options (a) initial table (b) List of basic & non-basic variables for ith iteration (c) optimal solution (if exists otherwise generate report for infeasibility, unboundedness, alternative optimum etc.)

Problem 2:-

Test the following numerical problems using your code.

(A) MAX Z = 5x1 + 10x2 + 8x3
subject to
3x1 + 5x2 + 2x3 ≤ 60
4x1 + 4x2 + 4x3 ≤ 72
2x1 + 4x2 + 5x3 ≤ 100
and x1,x2,x3 ≥ 0

(B) MAX Z = 4x1 + 3x2
subject to
2x1 + x2 ≤ 1000
x1 + x2 ≤ 800
x1 ≤ 400
x2 ≤ 700
and x1,x2 ≥ 0

(C) MAX Z = 3x1 + 3x2 + 2x3 + x4
subject to
2x1 + 2x2 + 5x3 + x4 ≤ 12
3x1 + 3x2 + 4x3 ≤ 11
and x1,x2,x3,x4 ≥0

D) MAX Z = 3x1 + 5x2 + 4x3
subject to
2x1 + 3x2 ≤ 8
2x2 + 5x3 ≤ 10
3x1 + 2x2 + 4x3 ≤ 15
and x1,x2,x3 ≥ 0

(E) MIN Z = 3x1 + 3x2 + 2x3 - x4

subject to

$$2x1 + 2x2 + 5x3 + x4 \geq 43$$

$$3x1 - 3x2 + 4x3 \geq 11$$

$$4x1 - 2x2 + 3x3 - x4 \geq 25$$

and $x1, x2, x3, x4 \geq 0$