Lab Assignment 3\_ Simplex 24/8/2022

(This question is uploaded in Moodle. )

Q 1.

Write codes for a general simplex method for the following linear programming problem and upload in Moodle by 5 PM( whatever you have completed in the LAB). Later you will be given time to upload the complete code.

Maximize c1x1+ c2x2+……….+cnxn

Subject to

a11x1+ a12x2+…………..+ a1nxn  <= b1

a21x1+ a22x2+…………..+ a2nxn  <= b2

……………………………………..

am1x1+ am2x2+…………..+ amnxn  <= bm

where xj>=0, j=1,2,…,n ; bi >=0 for all i.

INPUT: aij, cj, bi

OUTPUT:

\* AT EVERY ITERATION PRINT (1) BASIC FEASIBLE SOLUTION, (2)OBJECTIVE VALUE (3) NAME AND VALUE OF THE PIVOT ELEMENT.

\*FINAL OPTIMAL SOLUTION AND OBJECTIVE VALUE

\*NUMBER OF ITERATIONS

1. Revise this code when some xj are free variables.(Hint: if any xj is unrestricted then you can replace this xj by yj-zj, where yj >=0 and zj>=0)

Use your code to solve the following problems. Then verify your answer by graphical method.

1. Maximize 3x+4y

S.to x+2y <=10, 2x+3y<=18, x,y>=0

2. Maximize 3x+4y

s.to x+2y <=10, 2x-3y <=18, x>=0