In [1]:

```
#Question1
#Use Gauss-Jordon elimination to find the solution of the following system of linear eq
uations

# x + y + z + w = 13
# 2x + 3y - w = -1
# -3x + 4y + z + 2w = 10
# x + 2y - z + w = 1


#Augmented form has been entered to matrix2.txt

#
#                 _                 _
# C= [A | b]= | 1 1 1 1   | 13  |
#             | 2 3 0 -1  | -1  |
#             | -3 4 1 2  | 10  |
#             |_ 1 2 -1 1 |  1 _|
#



#importing gauss Jordan from library
from My_Lib import Gauss_jordan



# inserting matrix C
list_C=[]
with open("matrix1.txt") as matC:
    for k in matC:
        list_C.append(list(map(float, k.split())))


########################################
#Criterion for when exististance of solution
a,b=Gauss_jordan(list_C)
if (a,b) != (None,None):
    print("Solution of the given Linear equation is:") #output rounded upto 3 places of
decimal
    print("x = %.2f" %b[0])
    print("y = %.2f" %b[1])
    print("z = %.2f" %b[2])
    print("w = %.2f" %b[3])
else:
    print("No unique solutions exist")
```

```
Solution of the given Linear equation is:
x = 2.00
y = -0.00
z = 6.00
w = 5.00
```