ESO208 Programming Assignment

Test problem-1:

Output:

```
A (before pivoting) :
4.000000   2.000000   0.000000
2.000000   4.000000   1.000000
0.000000   1.000000   5.000000

Log of all row and column swaps :
Swap Column 1 with Column 3
Swap Row 1 with Row 3


A (after pivoting) :
5.000000   1.000000   0.000000
1.000000   4.000000   2.000000
0.000000   2.000000   4.000000


Crout Method


X :
1.517857
1.964286
0.607143

L
5.000000  0.000000  0.000000
1.000000  3.800000  0.000000
0.000000  2.000000  2.947368

U
1.000000  0.200000  0.000000
0.000000  1.000000  0.526316
0.000000  0.000000  1.000000

```

Test Problem-2:

Output:

```
X1 = 0.896424
X2 = 0.765130
X3 = 0.614475

```

Test Problem-3:

Output: b)

```
A (before pivoting) :
9.000000   3.000000   -2.000000
3.000000   6.000000   1.000000
-2.000000   1.000000   9.000000

Log of all row and column swaps :
Swap Column 2 with Column 3
Swap Row 2 with Row 3

L
9.000000  0.000000  0.000000
-2.000000  8.555556  0.000000
3.000000  1.666667  4.675325

U
1.000000  -0.222222  0.333333
0.000000  1.000000  0.194805
0.000000  0.000000  1.000000

```

c)

```
Inverse of Given Matrix :

0.147222   -0.080556   0.041667
-0.080556   0.213889   -0.041667
0.041667   -0.041667   0.125000

```

Test Problem-4:

Output:

```
X1 = -1.933333
X2 = -0.866667
X3 = -0.533333
X4 = 0.733333

```

Test Problem-5:

Output:

```
Inverse of Given Matrix :

25.000000   -41.000000   10.000000   -6.000000
-41.000000   68.000000   -17.000000   10.000000
10.000000   -17.000000   5.000000   -3.000000
-6.000000   10.000000   -3.000000   2.000000

X :
1.000000
-1.000000
1.000000
-1.000000

```