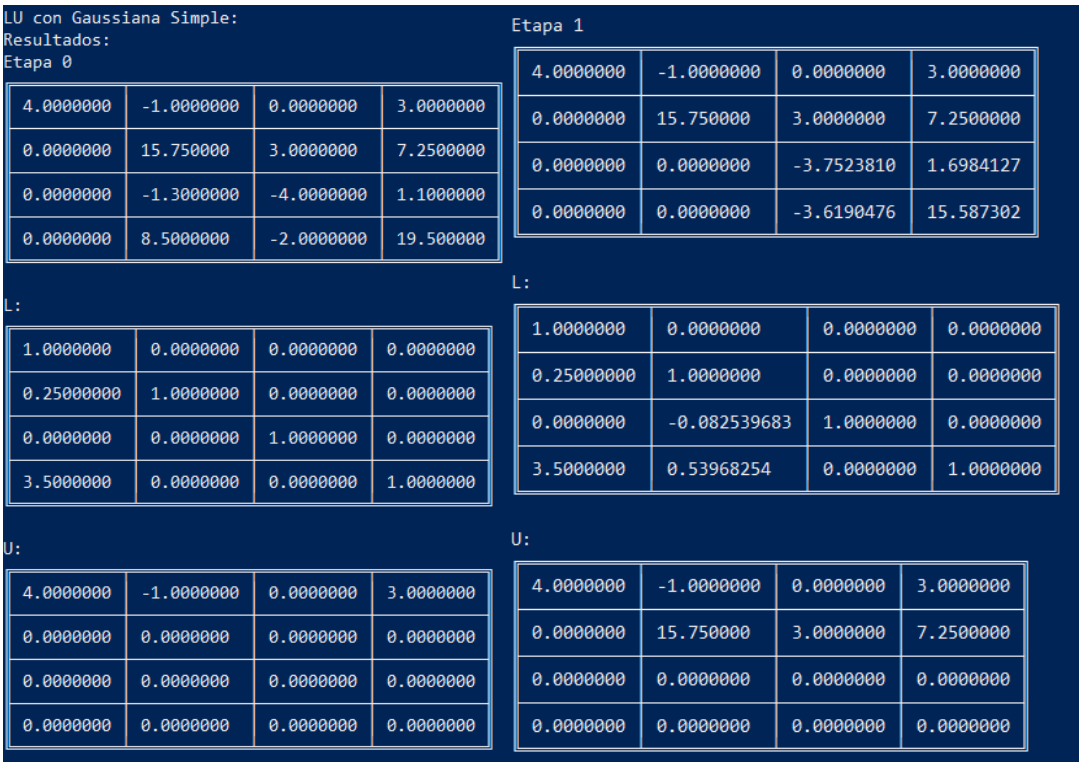
DOCUMENTO PRUEBAS MÉTODOS SEGUNDA ENTREGA

LU con gaussiana simple:



LU con Gaussiana Simple:
Resultados:
Etapa 0

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	-1.3000000	-4.0000000	1.1000000
0.0000000	8.5000000	-2.0000000	19.500000

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
3.5000000	0.0000000	0.0000000	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000

Etapa 1

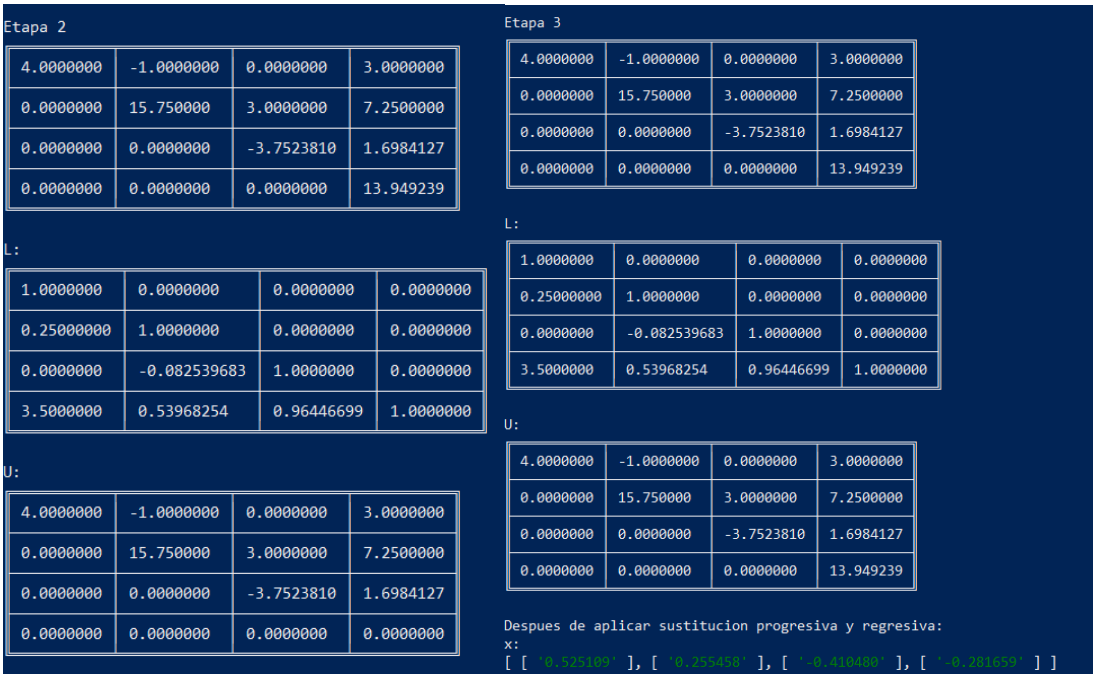
4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	-3.6190476	15.587302

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.0000000	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	0.0000000	0.0000000
0.0000000	0.0000000	0.0000000	0.0000000



Etapa 2

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	13.949239

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.96446699	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	0.0000000

Etapa 3

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	13.949239

L:

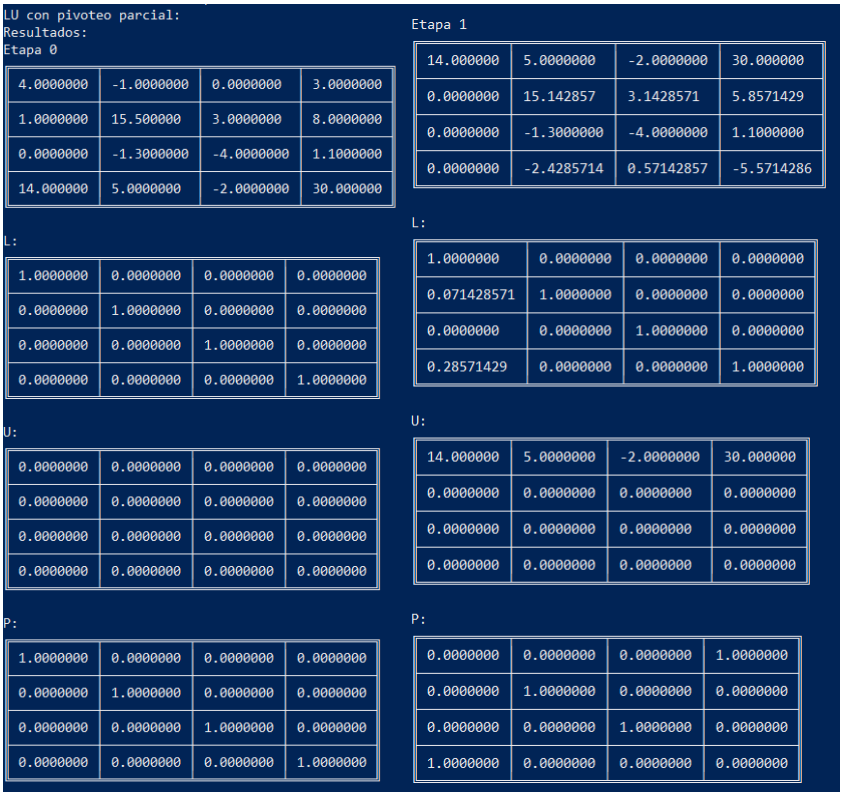
1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.96446699	1.0000000

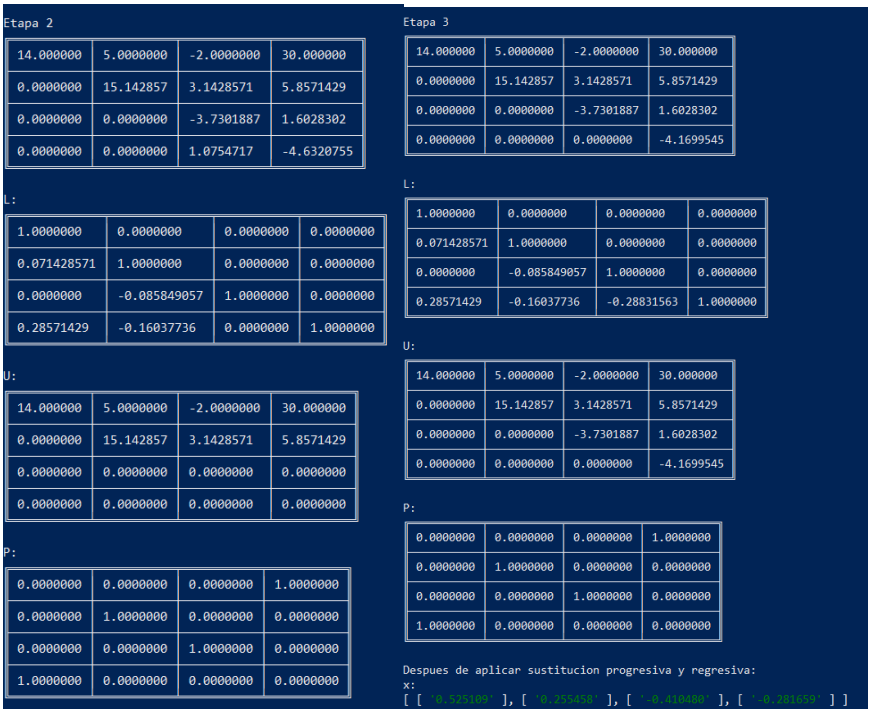
U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	13.949239

Despues de aplicar sustitucion progresiva y regresiva:
x:
[['0.525109'], ['0.255458'], ['-0.410480'], ['-0.281659']]

LU con pivoteo parcial:





Doolittle:

Doolittle
Resultados:
Etapa 0

4.0000000	-1.0000000	0.0000000	3.0000000
1.0000000	15.500000	3.0000000	8.0000000
0.0000000	-1.3000000	-4.0000000	1.1000000
14.000000	5.0000000	-2.0000000	30.000000

Etapa 1

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
3.5000000	0.0000000	0.0000000	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 2

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.0000000	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 3

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.96446699	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 4

L:

1.0000000	0.0000000	0.0000000	0.0000000
0.25000000	1.0000000	0.0000000	0.0000000
0.0000000	-0.082539683	1.0000000	0.0000000
3.5000000	0.53968254	0.96446699	1.0000000

U:

4.0000000	-1.0000000	0.0000000	3.0000000
0.0000000	15.750000	3.0000000	7.2500000
0.0000000	0.0000000	-3.7523810	1.6984127
0.0000000	0.0000000	0.0000000	13.949239

Despues de aplicar sustitucion progresiva y regresiva
x:
0.52510916
0.25545851
-0.41048034
-0.28165938

Crout:

Crout
Resultados:

Etapa 0

4.0000000	-1.0000000	0.0000000	3.0000000
1.0000000	15.500000	3.0000000	8.0000000
0.0000000	-1.3000000	-4.0000000	1.1000000
14.000000	5.0000000	-2.0000000	30.000000

Etapa 1
L:

4.0000000	0.0000000	0.0000000	0.0000000
1.0000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
14.000000	0.0000000	0.0000000	1.0000000

U:

1.0000000	-0.25000000	0.0000000	0.75000000
0.0000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 2
L:

4.0000000	0.0000000	0.0000000	0.0000000
1.0000000	15.750000	0.0000000	0.0000000
0.0000000	-1.3000000	1.0000000	0.0000000
14.000000	8.5000000	0.0000000	1.0000000

U:

1.0000000	-0.25000000	0.0000000	0.75000000
0.0000000	1.0000000	0.19047619	0.46031746
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 3
L:

4.0000000	0.0000000	0.0000000	0.0000000
1.0000000	15.750000	0.0000000	0.0000000
0.0000000	-1.3000000	-3.7523810	0.0000000
14.000000	8.5000000	-3.6190476	1.0000000

U:

1.0000000	-0.25000000	0.0000000	0.75000000
0.0000000	1.0000000	0.19047619	0.46031746
0.0000000	0.0000000	1.0000000	-0.45262267
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 4
L:

4.0000000	0.0000000	0.0000000	0.0000000
1.0000000	15.750000	0.0000000	0.0000000
0.0000000	-1.3000000	-3.7523810	0.0000000
14.000000	8.5000000	-3.6190476	13.949239

U:

1.0000000	-0.25000000	0.0000000	0.75000000
0.0000000	1.0000000	0.19047619	0.46031746
0.0000000	0.0000000	1.0000000	-0.45262267
0.0000000	0.0000000	0.0000000	1.0000000

Despues de aplicar sustitucion progresiva y regresiva:
['0.52510916', '0.25545851', '-0.41048034', '-0.28165938']

Cholesky:

Debido a que en un momento el método empezaba a trabajar con números complejos y nuestro lenguaje no los soporta tuvimos que cambiar las matrices de prueba a estas:

A = [[20, -1, 3, 4], [6, 23, 4, 3], [7, 21, 46, 9], [-3, -9, 12, 38]]

b = [30, -10, 20, -14]

Cholesky
Resultados:

Etapa 0

20.000000	-1.0000000	3.0000000	4.0000000
6.0000000	23.000000	4.0000000	3.0000000
7.0000000	21.000000	46.000000	9.0000000
-3.0000000	-9.0000000	12.000000	38.000000

Etapa 1
L:

4.4721359	0.0000000	0.0000000	0.0000000
1.3416408	1.0000000	0.0000000	0.0000000
1.5652476	0.0000000	1.0000000	0.0000000
-0.67082040	0.0000000	0.0000000	1.0000000

U:

4.4721360	-0.22360680	0.67082040	0.89442720
0.0000000	1.0000000	0.0000000	0.0000000
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 2
L:

4.4721359	0.0000000	0.0000000	0.0000000
1.3416408	4.8270073	0.0000000	0.0000000
1.5652476	4.4230304	1.0000000	0.0000000
-0.67082040	-1.8955845	0.0000000	1.0000000

U:

4.4721360	-0.22360680	0.67082040	0.89442720
0.0000000	4.8270074	0.64221987	0.37290185
0.0000000	0.0000000	1.0000000	0.0000000
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 3
L:

4.4721359	0.0000000	0.0000000	0.0000000
1.3416408	4.8270073	0.0000000	0.0000000
1.5652476	4.4230304	6.4891789	0.0000000
-0.67082040	-1.8955845	2.1061805	1.0000000

U:

4.4721360	-0.22360680	0.67082040	0.89442720
0.0000000	4.8270074	0.64221987	0.37290185
0.0000000	0.0000000	6.4891788	0.91701028
0.0000000	0.0000000	0.0000000	1.0000000

Etapa 4
L:

4.4721359	0.0000000	0.0000000	0.0000000
1.3416408	4.8270073	0.0000000	0.0000000
1.5652476	4.4230304	6.4891789	0.0000000
-0.67082040	-1.8955845	2.1061805	6.1135487

U:

4.4721360	-0.22360680	0.67082040	0.89442720
0.0000000	4.8270074	0.64221987	0.37290185
0.0000000	0.0000000	6.4891788	0.91701028
0.0000000	0.0000000	0.0000000	6.1135487

Despues de aplicar sustitucion progresiva y regresiva:
['1.4840548', '-0.86028861', '0.73619855', '-0.68749515']

Jacobi:

Iter	E	x
0		0.0000000,0.0000000,0.0000000,0.0000000
1	3.6e-1	0.25000000,0.064516129,-0.25000000,0.033333333
2	1.5e-1	0.24112903,0.079569893,-0.26180108,-0.11075269
3	1.4e-1	0.35295699,0.15679327,-0.30631720,-0.10990860
4	7.5e-2	0.37162977,0.15775893,-0.33118268,-0.17793329
5	6.8e-2	0.42288970,0.19647643,-0.35020331,-0.18846589
6	4.0e-2	0.44046852,0.20228693,-0.36568296,-0.22010815
7	3.4e-2	0.46565285,0.22048036,-0.37627299,-0.23031199
8	2.2e-2	0.47785408,0.22617174,-0.38499191,-0.24580292
9	1.8e-2	0.49089512,0.23506742,-0.39110162,-0.25302665
10	1.3e-2	0.49853684,0.23913696,-0.39597924,-0.26100240
11	1.0e-2	0.50553604,0.24370452,-0.39949517,-0.26557197
12	7.3e-3	0.51010511,0.24629195,-0.40223626,-0.26983392
13	5.7e-3	0.51394843,0.24872742,-0.40424921,-0.27258013
14	4.2e-3	0.51661695,0.25028647,-0.40579595,-0.27491378
15	3.2e-3	0.51875695,0.25161814,-0.40694439,-0.27652205
16	2.4e-3	0.52029607,0.25253243,-0.40781946,-0.27781923
17	1.8e-3	0.52149753,0.25327201,-0.40847333,-0.27874820
18	1.4e-3	0.52237915,0.25380052,-0.40896916,-0.27947574
19	1.0e-3	0.52305693,0.25421511,-0.40934100,-0.28000830
20	7.7e-4	0.52356000,0.25451822,-0.40962219,-0.28041849
21	5.8e-4	0.52394342,0.25475190,-0.40983351,-0.28072252
22	4.4e-4	0.52422986,0.25492499,-0.40999306,-0.28095448
23	3.3e-4	0.52444711,0.25505711,-0.41011310,-0.28112764
24	2.5e-4	0.52461001,0.25515570,-0.41020366,-0.28125904
25	1.9e-4	0.52473320,0.25523053,-0.41027184,-0.28135753
26	1.4e-4	0.52482578,0.25528662,-0.41032324,-0.28143204
27	1.1e-4	0.52489568,0.25532905,-0.41036196,-0.28148802
28	8.0e-5	0.52494828,0.25536093,-0.41039115,-0.28153029
29	6.0e-5	0.52498795,0.25538500,-0.41041313,-0.28156210
30	4.6e-5	0.52501782,0.25540311,-0.41042970,-0.28158609
31	3.4e-5	0.52504035,0.25541677,-0.41044219,-0.28160415
32	2.6e-5	0.52505731,0.25542706,-0.41045159,-0.28161777
33	1.9e-5	0.52507009,0.25543481,-0.41045868,-0.28162803
34	1.5e-5	0.52507972,0.25544066,-0.41046402,-0.28163576
35	1.1e-5	0.52508698,0.25544506,-0.41046805,-0.28164158
36	8.3e-6	0.52509245,0.25544837,-0.41047108,-0.28164597
37	6.3e-6	0.52509657,0.25545087,-0.41047336,-0.28164928
38	4.7e-6	0.52509968,0.25545276,-0.41047508,-0.28165177
39	3.6e-6	0.52510202,0.25545418,-0.41047638,-0.28165365
40	2.7e-6	0.52510378,0.25545525,-0.41047736,-0.28165506
41	2.0e-6	0.52510511,0.25545605,-0.41047810,-0.28165613
42	1.5e-6	0.52510611,0.25545666,-0.41047865,-0.28165693
43	1.1e-6	0.52510686,0.25545711,-0.41047907,-0.28165754
44	8.6e-7	0.52510743,0.25545746,-0.41047938,-0.28165799
45	6.6e-7	0.52510786,0.25545772,-0.41047962,-0.28165834
46	5.0e-7	0.52510819,0.25545792,-0.41047980,-0.28165860
47	3.7e-7	0.52510843,0.25545807,-0.41047994,-0.28165880
48	2.8e-7	0.52510862,0.25545818,-0.41048004,-0.28165894
49	2.1e-7	0.52510875,0.25545826,-0.41048012,-0.28165906
50	1.6e-7	0.52510886,0.25545833,-0.41048018,-0.28165913
51	1.1e-7	0.52510893,0.25545837,-0.41048022,-0.28165920
52	8.8e-8	0.52510899,0.25545841,-0.41048025,-0.28165924

T:

0.00000	0.250000	0.00000	-0.750000
-0.0645161	0.00000	-0.193548	-0.516129
0.00000	-0.325000	0.00000	0.275000
-0.466667	-0.166667	0.0666667	0.00000

U:

0.250000
0.0645161
-0.250000
0.0333333

Radio espectral:
0.75351719

Gauss-Seidel

Iter	E	x
0		0.0000000,0.0000000,0.0000000,0.0000000
1	3.8e-1	0.25000000,0.048387097,-0.26572581,-0.10911290
2	1.7e-1	0.34393145,0.15007414,-0.32878014,-0.17409904
3	1.0e-1	0.41809282,0.19103483,-0.35996356,-0.21761336
4	6.0e-2	0.46096873,0.21676315,-0.38029170,-0.24326538
5	3.6e-2	0.48663982,0.23228118,-0.39238936,-0.25863807
6	2.1e-2	0.50204885,0.24156283,-0.39963339,-0.26785883
7	1.3e-2	0.51128483,0.24712813,-0.40397782,-0.27338613
8	7.7e-3	0.51682163,0.25046457,-0.40658217,-0.27669967
9	4.6e-3	0.52014090,0.25246471,-0.40814344,-0.27868610
10	2.8e-3	0.52213075,0.25366377,-0.40907940,-0.27987694
11	1.7e-3	0.52332365,0.25438259,-0.40964050,-0.28059083
12	1.0e-3	0.52403877,0.25481351,-0.40997687,-0.28101880
13	6.0e-4	0.52446748,0.25507184,-0.41017852,-0.28127536
14	3.6e-4	0.52472448,0.25522671,-0.41029940,-0.28142917
15	2.1e-4	0.52487856,0.25531955,-0.41037188,-0.28152138
16	1.3e-4	0.52497092,0.25537521,-0.41041532,-0.28157665
17	7.7e-5	0.52502629,0.25540857,-0.41044136,-0.28160979
18	4.6e-5	0.52505948,0.25542858,-0.41045698,-0.28162965
19	2.8e-5	0.52507938,0.25544057,-0.41046634,-0.28164156
20	1.7e-5	0.52509131,0.25544775,-0.41047195,-0.28164870
21	1.0e-5	0.52509846,0.25545206,-0.41047531,-0.28165298
22	6.0e-6	0.52510275,0.25545465,-0.41047733,-0.28165555
23	3.6e-6	0.52510532,0.25545620,-0.41047854,-0.28165709
24	2.2e-6	0.52510687,0.25545713,-0.41047927,-0.28165801
25	1.3e-6	0.52510779,0.25545768,-0.41047970,-0.28165856
26	7.7e-7	0.52510834,0.25545802,-0.41047996,-0.28165889
27	4.6e-7	0.52510867,0.25545821,-0.41048011,-0.28165909
28	2.8e-7	0.52510887,0.25545833,-0.41048021,-0.28165921
29	1.7e-7	0.52510899,0.25545841,-0.41048027,-0.28165928
30	9.5e-8	0.52510906,0.25545845,-0.41048030,-0.28165932

T:

0.00000	0.250000	0.00000	-0.750000
0.00000	-0.0161290	-0.193548	-0.467742
0.00000	0.00524194	0.0629032	0.427016
0.00000	-0.113629	0.0364516	0.456425

C:

0.250000
0.0483871
-0.265726
-0.109113

Radio espectral:
0.59948778

SOR:

Iter	E	x
0		0.0000000,0.0000000,0.0000000,0.0000000
1	6.2e-1	0.37500000,0.060483871,-0.40448589,-0.26806956
2	3.2e-1	0.51175971,0.34197624,-0.45004916,-0.30469599
3	1.5e-1	0.59014422,0.23522845,-0.39033638,-0.30859371
4	1.1e-1	0.51530648,0.28152632,-0.44437080,-0.27123634
5	7.4e-2	0.52806001,0.24390875,-0.38360511,-0.28336154
6	4.3e-2	0.52121751,0.25512532,-0.42445767,-0.27939858
7	2.1e-2	0.52438664,0.25800266,-0.40379938,-0.28225196
8	1.1e-2	0.52709113,0.25251377,-0.41262971,-0.28222923
9	6.9e-3	0.52365498,0.25813679,-0.41094639,-0.28107271
10	5.5e-3	0.52618060,0.25369679,-0.40914648,-0.28212891
11	4.2e-3	0.52444102,0.25638029,-0.41179032,-0.28131836
12	2.8e-3	0.52540525,0.25508527,-0.40950273,-0.28184609
13	1.7e-3	0.52503120,0.25551340,-0.41107293,-0.28158444
14	8.8e-4	0.52508442,0.25554748,-0.41019651,-0.28167340
15	4.4e-4	0.52517067,0.25533652,-0.41056858,-0.28167376
16	2.7e-4	0.52504884,0.25556209,-0.41049266,-0.28163710
17	2.2e-4	0.52515310,0.25538879,-0.41043101,-0.28167892
18	1.7e-4	0.52508303,0.25549670,-0.41053169,-0.28164601
19	1.1e-4	0.52512151,0.25544278,-0.41044149,-0.28166689
20	6.8e-5	0.52510554,0.25546126,-0.41050421,-0.28165617
21	3.6e-5	0.52510839,0.25546165,-0.41046862,-0.28166007
22	1.8e-5	0.52511150,0.25545384,-0.41048422,-0.28165990
23	1.1e-5	0.52510683,0.25546260,-0.41048062,-0.28165854
24	8.4e-6	0.52511092,0.25545573,-0.41047850,-0.28166015
25	6.6e-6	0.52510811,0.25546006,-0.41048234,-0.28165885
26	4.5e-6	0.52510967,0.25545786,-0.41047881,-0.28165969
27	2.7e-6	0.52510901,0.25545864,-0.41048131,-0.28165926
28	1.5e-6	0.52510915,0.25545863,-0.41047987,-0.28165942
29	7.2e-7	0.52510926,0.25545833,-0.41048051,-0.28165941
30	4.2e-7	0.52510908,0.25545868,-0.41048036,-0.28165936
31	3.3e-7	0.52510925,0.25545841,-0.41048028,-0.28165942
32	2.6e-7	0.52510913,0.25545858,-0.41048043,-0.28165937
33	1.8e-7	0.52510919,0.25545849,-0.41048029,-0.28165940
34	1.1e-7	0.52510916,0.25545852,-0.41048039,-0.28165938
35	6.2e-8	0.52510917,0.25545852,-0.41048033,-0.28165939

T:

-0.500000	0.375000	0.00000	-1.12500
0.0483871	-0.536290	-0.290323	-0.665323
-0.0235887	0.261442	-0.358468	0.736845
0.335544	-0.102283	0.0367339	0.527515

C:

0.375000
0.0604839
-0.404486
-0.268070

Radio espectral:
Los valores propios de la matriz T son numeros complejos. Este lenguaje no lo soporta

Vandermonde:

```
Vandermonde
Resultados:
Matriz de Vandermonde:
```

-1.0000000	1.0000000	-1.0000000	1.0000000
0.0000000	0.0000000	0.0000000	1.0000000
27.000000	9.0000000	3.0000000	1.0000000
64.000000	16.000000	4.0000000	1.0000000

```
Coeficientes del polinomio:
 -1.1416667 5.8250000 -5.5333333 3.0000000
Polinomio:
 -1.1416667x^3 + 5.8250000x^2 -5.5333333x + 3.0000000
```

Newton:

```
Newton
Resultados:
Tabla de diferencias divididas:
```

1.5000000	0.0000000	0.0000000
7.0000000	5.5000000	0.0000000
2.0000000	-5.0000000	-5.2500000

```
Coeficientes del polinomio de Newton:
[ '1.5000000', '5.5000000', '-5.2500000' ]
Polinomio de Newton:
1.5000000  + 5.5000000 * (x - 2) -5.2500000 * (x - 2)(x - 3)
```

Lagrange

```
Lagrange
Resultados:

Polinomios interpolantes de Lagrange:
L0:(x - 0)(x - 3)(x - 4) / (-20)
L1:(x + 1)(x - 3)(x - 4) / (12)
L2:(x + 1)(x - 0)(x - 4) / (-12)
L3:(x + 1)(x - 0)(x - 3) / (20)

Polinomio:
 (15.5 * L0) + (3 * L1) + (8 * L2) + (1 * L3)
```

Trazadores lineales:

```
Trazadores lineales:

Resultados:

Coeficientes de los trazadores:
-12.500000 3.0000000
1.6666667 3.0000000
-7.0000000 29.000000

Trazadores:
-12.500000x + 3.0000000
1.6666667x + 3.0000000
-7.0000000x + 29.000000
```

Trazadores cuadráticos:

```
Trazadores cuadraticos:

Resultados:

Coeficientes de los trazadores:
0.0000000 -12.500000 3.0000000
4.7222222 -12.500000 3.0000000
-22.833333 152.83333 -245.00000

Trazadores:
0.0000000x^2 -12.500000x + 3.0000000
4.7222222x^2 -12.500000x + 3.0000000
-22.833333x^2 + 152.83333x -245.00000
```

Trazadores cúbicos:

```
Trazadores cubicos:

Resultados:

Coeficientes de los trazadores:
2.5333333 7.6000000 -7.4333333 3.0000000
-1.5222222 7.6000000 -7.4333333 3.0000000
2.0333333 -24.400000 88.566667 -93.000000

Trazadores:
2.5333333x^3 + 7.6000000x^2 -7.4333333x + 3.0000000
-1.5222222x^3 + 7.6000000x^2 -7.4333333x + 3.0000000
2.0333333x^3 -24.400000x^2 + 88.566667x -93.000000
```