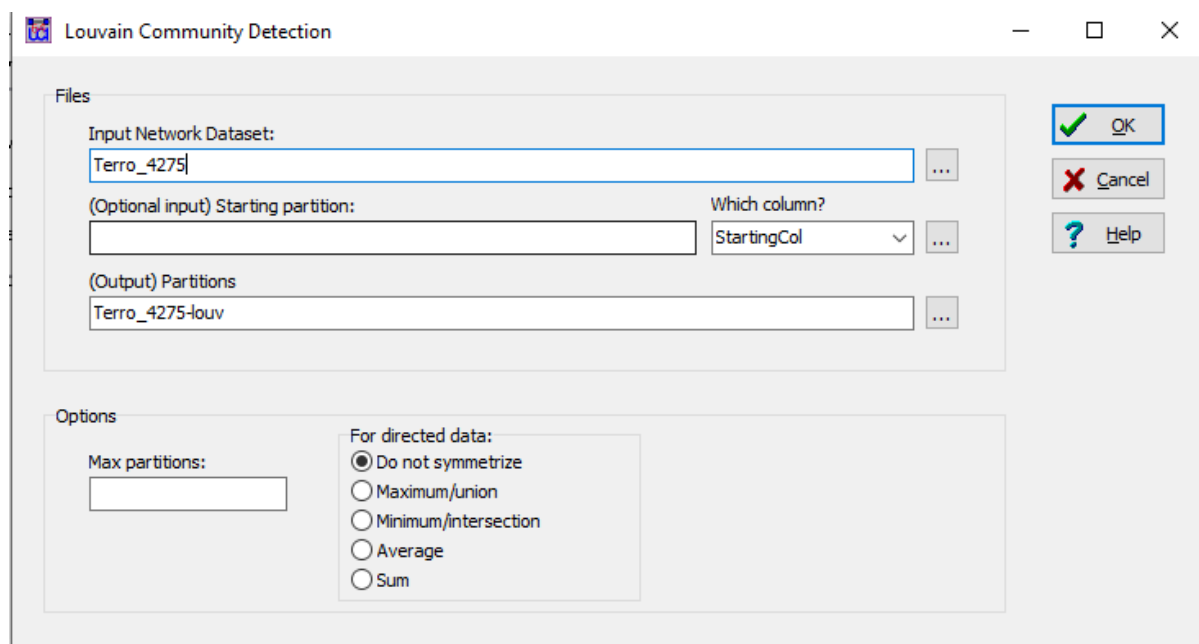


Practice 11.4

How to obtain the communities in Mainas's Terror data using the Louvain method.

In UCINET click on Network|Communities/Subgroups|Louvain Method and load the dataset Terro_4275



Since this a large dataset the results are written to the file Terro_4275-louv and are not displayed on the screen. To see the results click on the display button and load Terro_4275-louv. The first few lines of the display are shown below.

```
DISPLAY
-----
-----

Input dataset:                      Terro_4275-louv
(C:\Users\Martin\Documents\UCINET data\Terro_4275-louv

Louvain partitions

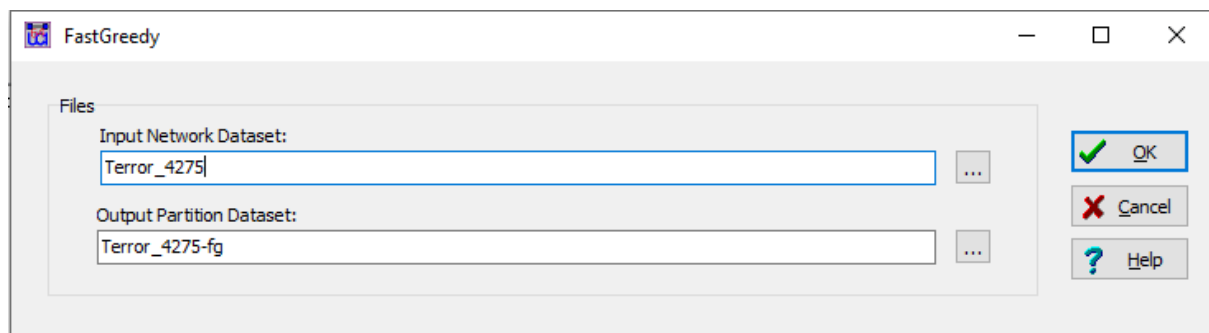
          1   2   3
        530 108 63|
        10. 10. 0.8
        663 853 68
        --- --- ---
1      P1   466  91  52
2     P10    35   2  45
3    P100   282  49  28
4  P1002   529 107  63
5  P1003   529 107  63
```

6	P1004	529	107	63
7	P1005	529	107	63
8	P1006	529	107	63
9	P1007	76	107	63
10	P1008	76	107	63
11	P1009	96	107	63
12	P1010	96	107	63
13	P1011	96	107	63
14	P1012	96	107	63
15	P1013	272	107	63
16	P1014	282	49	28

The column headings show the iterations of the Louvain method. At the end of the first greedy round it found 530 communities and Q has a value of 0.663, after the second round there are 108 communities and the algorithm terminates at the third round with 63 communities and a Q value of 0.868. Each column list the actors and gives which community they belong to. We see that actor P1 was in community numbered 52 when the algorithm terminated. It should be noted that because of the nature of the algorithm other runs may get similar but slightly different results.

How to obtain the solution for the Terror data using the fast greedy method method.

In UCINET click on Network|Communities/Subgroups|FastGreedy and load the dataset Terro_4275

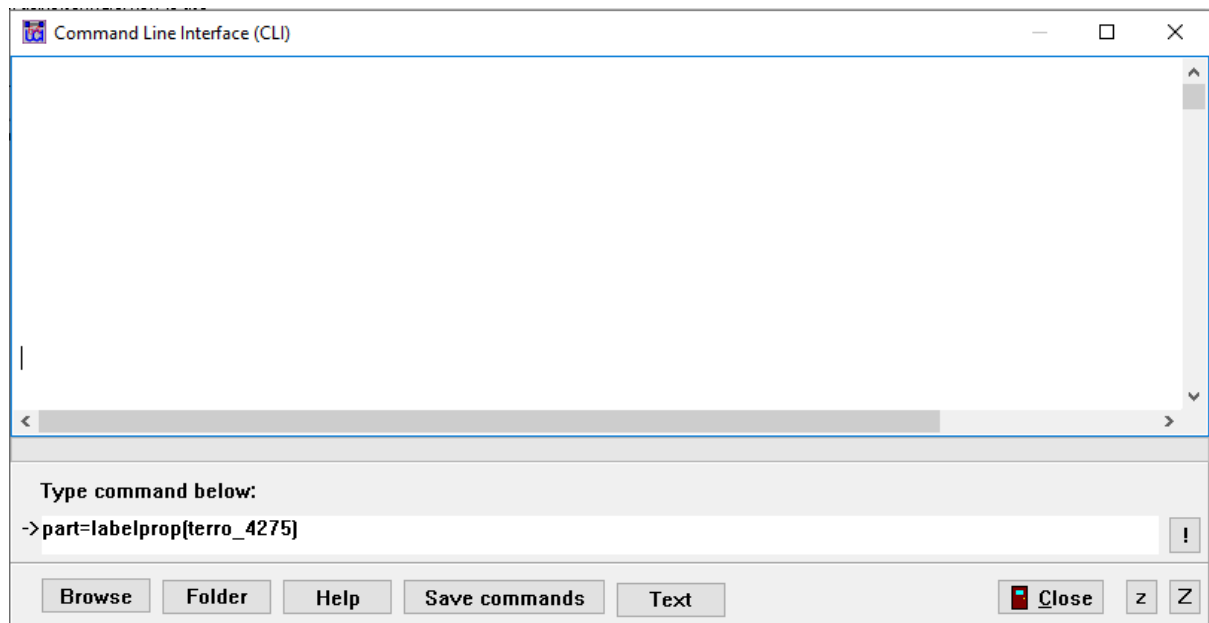


Note as in the Louvain method above the output is written to the file Terro_4275-fg and that needs to be displayed. The output is as in the Louvain method described above.

How to obtain the solution for the Terror data using the fast greedy method method.

We could simply repeat what is above but choosing Network|Communities/Subgroups|LabelPropagation. However when analyzing large datasets it is more efficient to use UCINET's command line interface or CLI. This is because

it does less datachecking. To launch the CLI window click the  button near the top of the UCINET window. Type in Part=labelprop(Terro_4275) at the bottom as shown below.



Hit return, when the algorithm has finished you will see text appear in the CLI window that will give the number of starts, number of groups and the modularity score. To see the assignment to the groups type dsp part. These will then be displayed the first part is shown below

```
Command Line Interface (CLI)

->part=labelprop(terro_4275)
Number of starts: 10
Number of groups = 261
Modularity (Q) = 0.766

->dsp part

      1
    P26
    1 -
    0.
    766
    ---
  1   P1   77
  2   P10   1
  3  P100  36
  4 P1002   2
  5 P1003 261
  6 P1004 261
  7 P1005   4
  8 P1006 120
  9 P1007 126
 10 P1008   3
 11 P1009   4
 12 P1010   4
 13 P1011   4
 14 P1012   4
 15 P1013   4
 16 P1014  21
 17 P1015   1

Type command below:
->

Browse Folder Help Save commands Text Close z Z
```

In this case the number of communities or groups found was 261 with a modularity Q of 0.766.

The allocation to the groups then follows. As mentioned in the book, different runs may give slightly different results as the solution is determined to some extent by the order in which the nodes are visited so you may get slightly different results. It can be seen that this run is slightly different to the run described in the book.