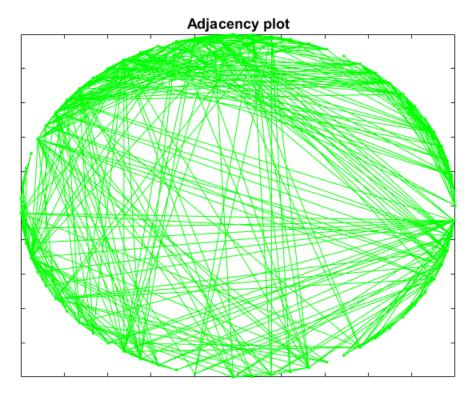
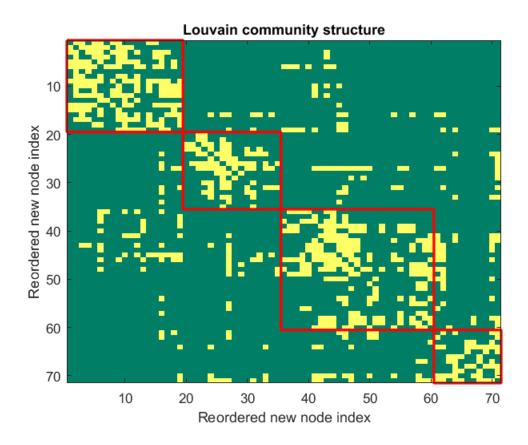
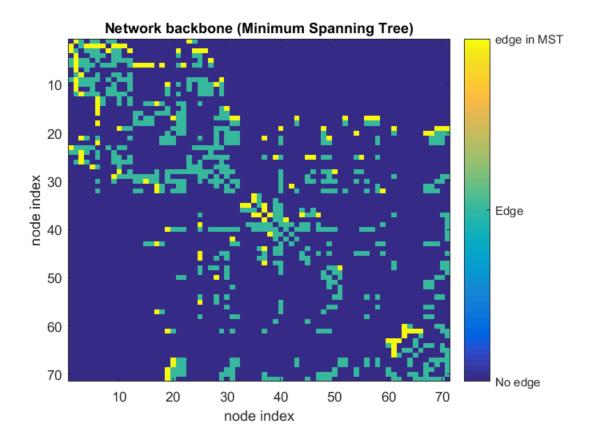
## **Visualization of networks in MATLAB**

adjacency\_plot\_und.m (BU network).



## **Visualization of matrices in MATLAB**





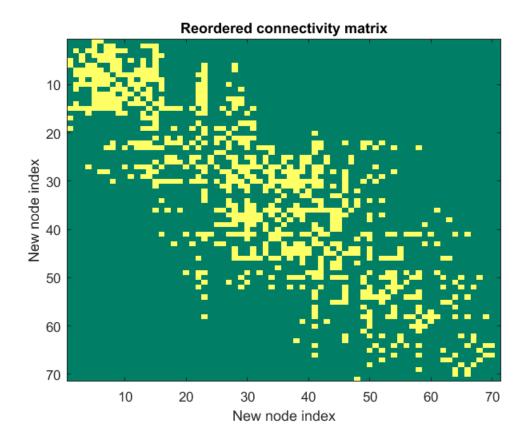
```
step 9 ... current lowest cost = 0.33339
step 73 ... current lowest cost = 0.33205
step 80 ... current lowest cost = 0.32892
step 81 ... current lowest cost = 0.32884
step 84 ... current lowest cost = 0.32883
step 90 ... current lowest cost = 0.32825
step 116 ... current lowest cost = 0.32777
step 131 ... current lowest cost = 0.32721
step 135 ... current lowest cost = 0.32546
step 152 ... current lowest cost = 0.32302
step 153 ... current lowest cost = 0.3222
step 157 ... current lowest cost = 0.32192
step 158 ... current lowest cost = 0.32116
step 172 ... current lowest cost = 0.31898
step 179 ... current lowest cost = 0.31867
step 186 ... current lowest cost = 0.31833
step 193 ... current lowest cost = 0.31832
step 194 ... current lowest cost = 0.31637
step 203 ... current lowest cost = 0.31572
step 245 ... current lowest cost = 0.31478
step 246 ... current lowest cost = 0.314
step 248 ... current lowest cost = 0.31396
step 254 ... current lowest cost = 0.31306
step 256 ... current lowest cost = 0.31304
step 271 ... current lowest cost = 0.3121
step 281 ... current lowest cost = 0.31065
```

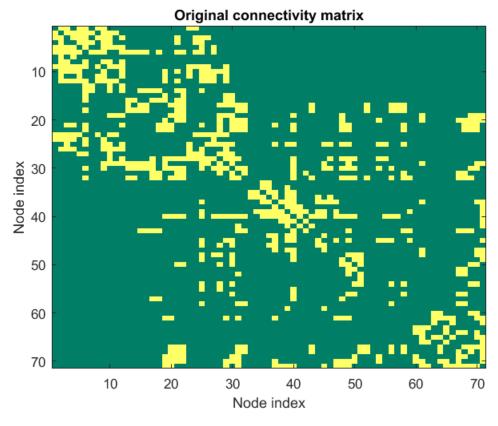
```
step 283 ... current lowest cost = 0.31058
step 288 ... current lowest cost = 0.30965
step 368 ... current lowest cost = 0.30937
step 412 ... current lowest cost = 0.30864
step 414 ... current lowest cost = 0.30845
step 416 ... current lowest cost = 0.30713
step 420 ... current lowest cost = 0.30409
step 423 ... current lowest cost = 0.30333
step 429 ... current lowest cost = 0.30293
step 443 ... current lowest cost = 0.30291
step 450 ... current lowest cost = 0.30278
step 458 ... current lowest cost = 0.30271
step 508 ... current lowest cost = 0.30228
step 512 ... current lowest cost = 0.30162
step 519 ... current lowest cost = 0.3013
step 522 ... current lowest cost = 0.29958
step 540 ... current lowest cost = 0.29655
step 542 ... current lowest cost = 0.29601
step 544 ... current lowest cost = 0.29521
step 555 ... current lowest cost = 0.29515
step 596 ... current lowest cost = 0.29498
step 612 ... current lowest cost = 0.29435
step 640 ... current lowest cost = 0.29308
step 686 ... current lowest cost = 0.29176
step 693 ... current lowest cost = 0.29159
step 701 ... current lowest cost = 0.29124
step 757 ... current lowest cost = 0.29082
step 765 ... current lowest cost = 0.28871
step 774 ... current lowest cost = 0.28823
step 775 ... current lowest cost = 0.28819
step 800 ... current lowest cost = 0.28745
step 843 ... current lowest cost = 0.28554
step 862 ... current lowest cost = 0.28545
step 864 ... current lowest cost = 0.28538
step 873 ... current lowest cost = 0.28535
step 920 ... current lowest cost = 0.28374
step 990 ... current lowest cost = 0.28134
step 999 ... current lowest cost = 0.28105
step 1013 ... current lowest cost = 0.28103
step 1016 ... current lowest cost = 0.27931
step 1024 ... current lowest cost = 0.27893
step 1030 ... current lowest cost = 0.27866
step 1031 ... current lowest cost = 0.27865
step 1034 ... current lowest cost = 0.27751
step 1075 ... current lowest cost = 0.27635
step 1088 ... current lowest cost = 0.27514
step 1142 ... current lowest cost = 0.27486
step 1176 ... current lowest cost = 0.27472
step 1179 ... current lowest cost = 0.27454
step 1220 ... current lowest cost = 0.27451
step 1240 ... current lowest cost = 0.2733
step 1245 ... current lowest cost = 0.27322
step 1249 ... current lowest cost = 0.27319
step 1266 ... current lowest cost = 0.27293
```

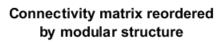
```
step 1274 ... current lowest cost = 0.2729
step 1279 ... current lowest cost = 0.27279
step 1308 ... current lowest cost = 0.27193
step 1310 ... current lowest cost = 0.27186
step 1315 ... current lowest cost = 0.27177
step 1368 ... current lowest cost = 0.27134
step 1398 ... current lowest cost = 0.26859
step 1410 ... current lowest cost = 0.26856
step 1447 ... current lowest cost = 0.2685
step 1458 ... current lowest cost = 0.26784
step 1534 ... current lowest cost = 0.26772
step 1537 ... current lowest cost = 0.26767
step 1562 ... current lowest cost = 0.26744
step 1707 ... current lowest cost = 0.26744
step 1768 ... current lowest cost = 0.26736
step 1798 ... current lowest cost = 0.2672
step 1800 ... current lowest cost = 0.26708
step 1802 ... current lowest cost = 0.26706
step 1855 ... current lowest cost = 0.26681
step 1866 ... current lowest cost = 0.26675
step 1868 ... current lowest cost = 0.26621
step 1885 ... current lowest cost = 0.26593
step 1927 ... current lowest cost = 0.26498
step 1962 ... current lowest cost = 0.26484
step 1966 ... current lowest cost = 0.26381
step 1978 ... current lowest cost = 0.26365
step 1985 ... current lowest cost = 0.2632
step 2002 ... current lowest cost = 0.26301
step 2012 ... current lowest cost = 0.26278
step 2031 ... current lowest cost = 0.26234
step 2056 ... current lowest cost = 0.26221
step 2057 ... current lowest cost = 0.26208
step 2070 ... current lowest cost = 0.26199
step 2074 ... current lowest cost = 0.26196
step 2393 ... current lowest cost = 0.26188
step 2422 ... current lowest cost = 0.26169
step 2427 ... current lowest cost = 0.26146
step 2432 ... current lowest cost = 0.26139
step 2438 ... current lowest cost = 0.26091
step 2450 ... current lowest cost = 0.26091
step 2460 ... current lowest cost = 0.26084
step 2508 ... current lowest cost = 0.26082
step 2521 ... current lowest cost = 0.26072
step 2528 ... current lowest cost = 0.26061
step 2552 ... current lowest cost = 0.26023
step 2593 ... current lowest cost = 0.25985
step 2604 ... current lowest cost = 0.25977
step 2617 ... current lowest cost = 0.25968
step 2627 ... current lowest cost = 0.25962
step 2676 ... current lowest cost = 0.25957
step 2704 ... current lowest cost = 0.25939
step 2717 ... current lowest cost = 0.25934
step 2763 ... current lowest cost = 0.25923
step 2769 ... current lowest cost = 0.25914
```

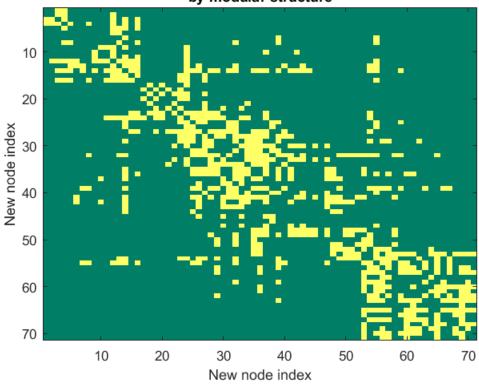
```
step 2801 ... current lowest cost = 0.25909
step 2809 ... current lowest cost = 0.25873
step 2944 ... current lowest cost = 0.25869
step 2965 ... current lowest cost = 0.25852
step 2987 ... current lowest cost = 0.25848
step 2991 ... current lowest cost = 0.25834
step 2997 ... current lowest cost = 0.25828
step 3049 ... current lowest cost = 0.25805
step 3090 ... current lowest cost = 0.258
step 3125 ... current lowest cost = 0.25788
step 3160 ... current lowest cost = 0.25741
step 3214 ... current lowest cost = 0.25729
step 3237 ... current lowest cost = 0.25714
step 3283 ... current lowest cost = 0.25713
step 3391 ... current lowest cost = 0.25708
step 3393 ... current lowest cost = 0.25693
step 3438 ... current lowest cost = 0.25681
step 3452 ... current lowest cost = 0.25673
step 3551 ... current lowest cost = 0.25638
step 3585 ... current lowest cost = 0.25636
step 3631 ... current lowest cost = 0.25634
step 3640 ... current lowest cost = 0.25633
step 3809 ... current lowest cost = 0.2563
step 3975 ... current lowest cost = 0.25626
step 3988 ... current lowest cost = 0.25622
step 4074 ... current lowest cost = 0.25622
step 4136 ... current lowest cost = 0.25618
step 4137 ... current lowest cost = 0.25617
step 4209 ... current lowest cost = 0.25601
step 4215 ... current lowest cost = 0.25596
step 4417 ... current lowest cost = 0.25588
step 4447 ... current lowest cost = 0.25578
step 4585 ... current lowest cost = 0.25572
step 4654 ... current lowest cost = 0.25563
step 4659 ... current lowest cost = 0.2556
step 4678 ... current lowest cost = 0.25559
step 4741 ... current lowest cost = 0.25554
step 4785 ... current lowest cost = 0.2555
step 4829 ... current lowest cost = 0.25544
step 4869 ... current lowest cost = 0.25539
step 4925 ... current lowest cost = 0.25528
step 4982 ... current lowest cost = 0.25527
step 5079 ... current lowest cost = 0.25527
step 5153 ... current lowest cost = 0.2552
step 5194 ... current lowest cost = 0.25512
step 5405 ... current lowest cost = 0.25512
step 5468 ... current lowest cost = 0.25509
step 5483 ... current lowest cost = 0.25508
step 5651 ... current lowest cost = 0.25508
step 5713 ... current lowest cost = 0.25506
step 5812 ... current lowest cost = 0.25501
step 6103 ... current lowest cost = 0.255
step 6144 ... current lowest cost = 0.25499
step 6449 ... current lowest cost = 0.25495
```

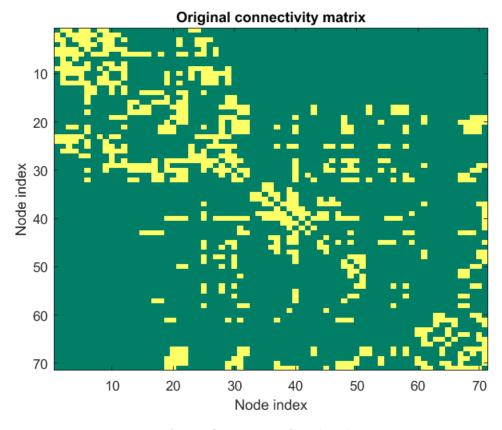
```
step 6466 ... current lowest cost = 0.25494
step 6494 ... current lowest cost = 0.25491
step 6628 ... current lowest cost = 0.2549
step 6640 ... current lowest cost = 0.25485
step 7007 ... current lowest cost = 0.25478
step 7135 ... current lowest cost = 0.2547
step 7138 ... current lowest cost = 0.25468
step 7172 ... current lowest cost = 0.25463
step 7361 ... current lowest cost = 0.25462
step 7644 ... current lowest cost = 0.25454
step 8011 ... current lowest cost = 0.25447
step 8113 ... current lowest cost = 0.25447
step 8489 ... current lowest cost = 0.25445
step 8696 ... current lowest cost = 0.25445
step 9178 ... current lowest cost = 0.25443
step 9859 ... current lowest cost = 0.25434
step 9981 ... current lowest cost = 0.25434
step 10000 ... current lowest cost = 0.25431
step 10000 ... final lowest cost = 0.25431
```











## Louvain community structure in reordered matrix

