

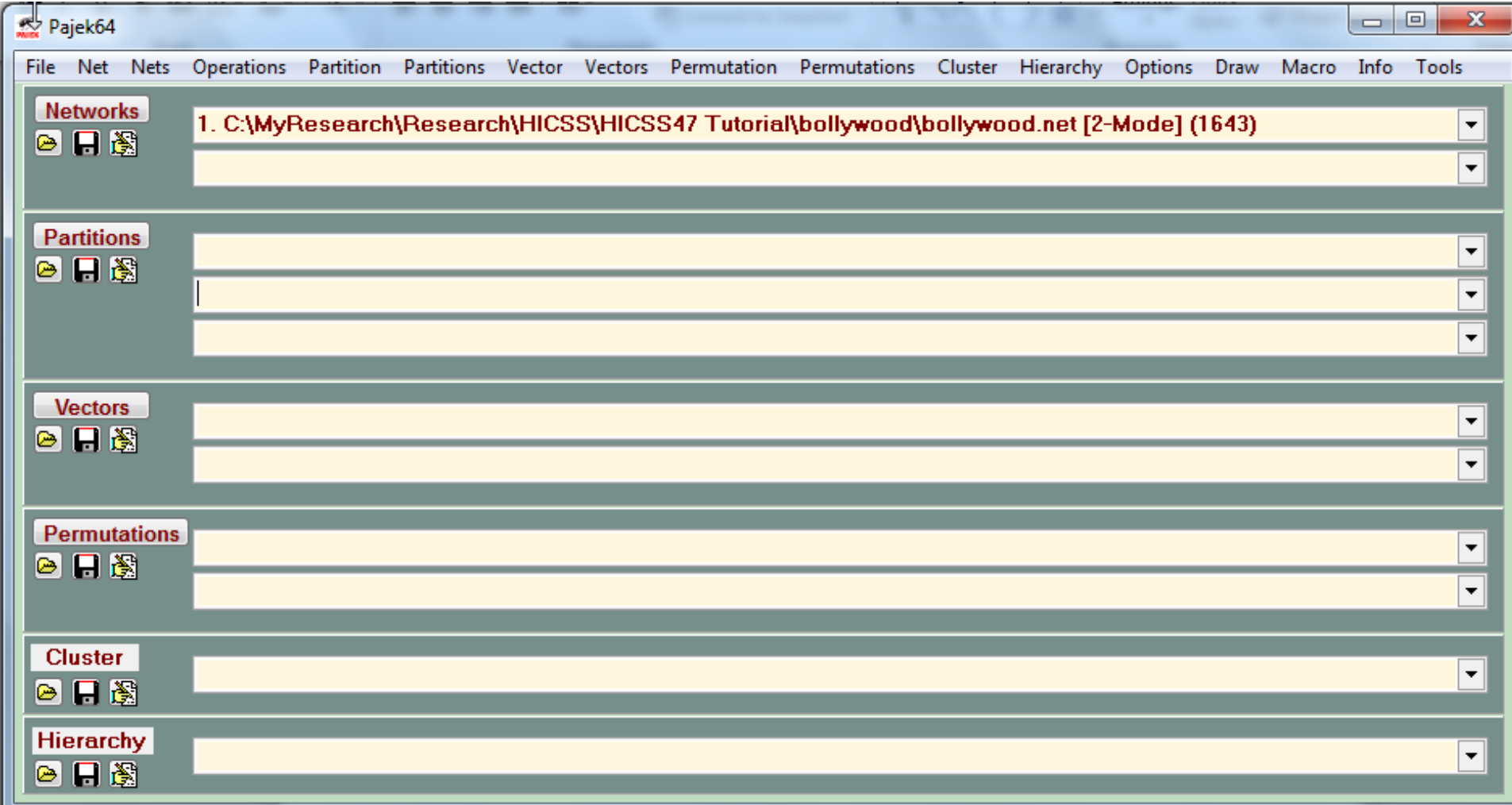
Analyzing Bollywood Social Network with Pajek

Dave King

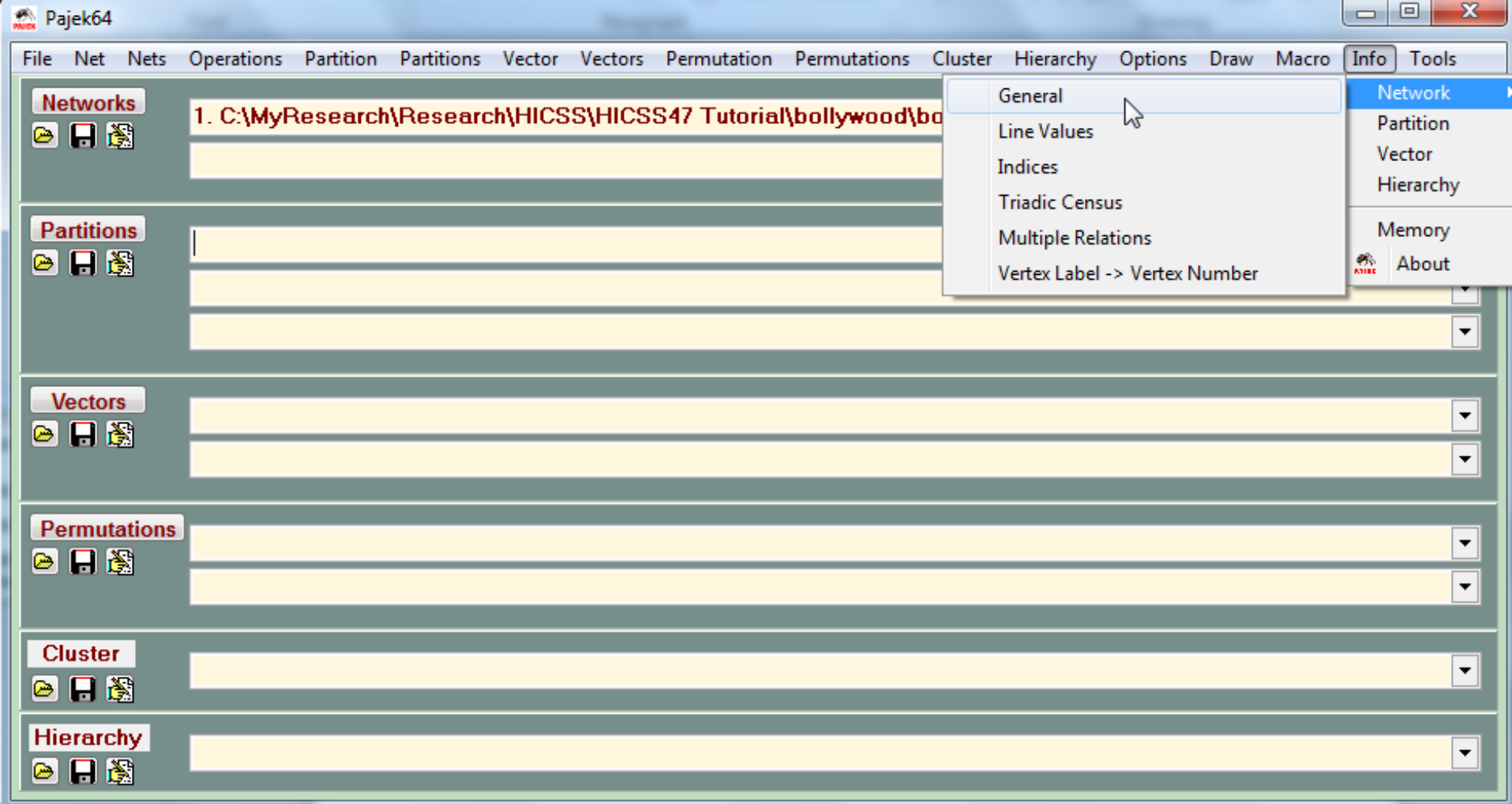
HICSS 47

2014

:



Step 1A: Opening Bollywood.net
2-mode network of movies and actors



Step 1B: Requesting General Info Report for Network

```
Report
File

-----
Reading Network   ---   C:\MyResearch\Research\HICSS\HICSS47 Tutorial\bollywood\bollywood.net
-----
Working...
      4268 lines read.
Time spent:  0:00:00

-----
1. C:\MyResearch\Research\HICSS\HICSS47 Tutorial\bollywood\bollywood.net [2-Mode] (1643)
-----
Number of vertices (n): 1643
-----

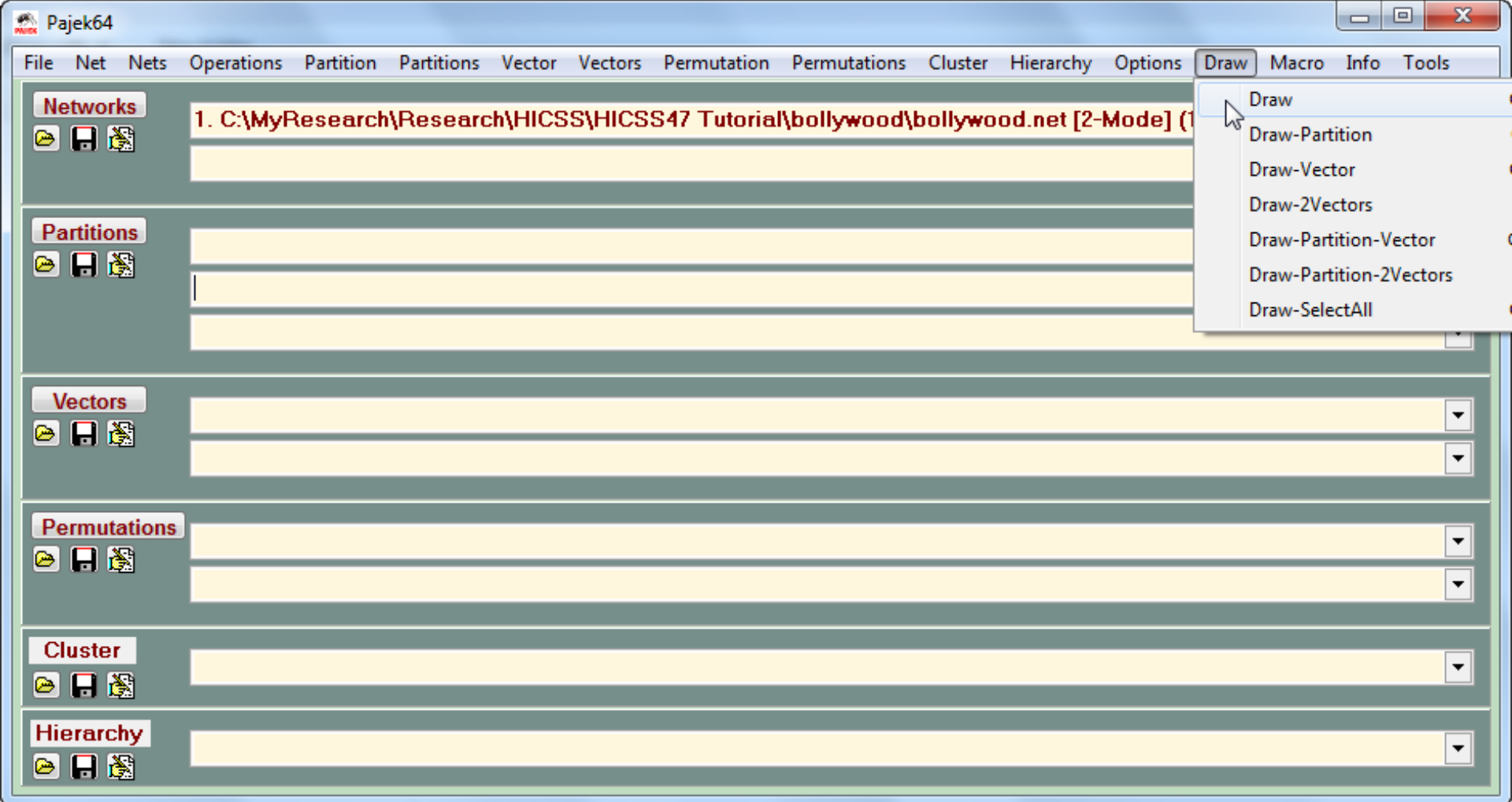
```

	Arcs	Edges
Total number of lines	0	2622
Number of loops	0	0
Number of multiple lines	0	1

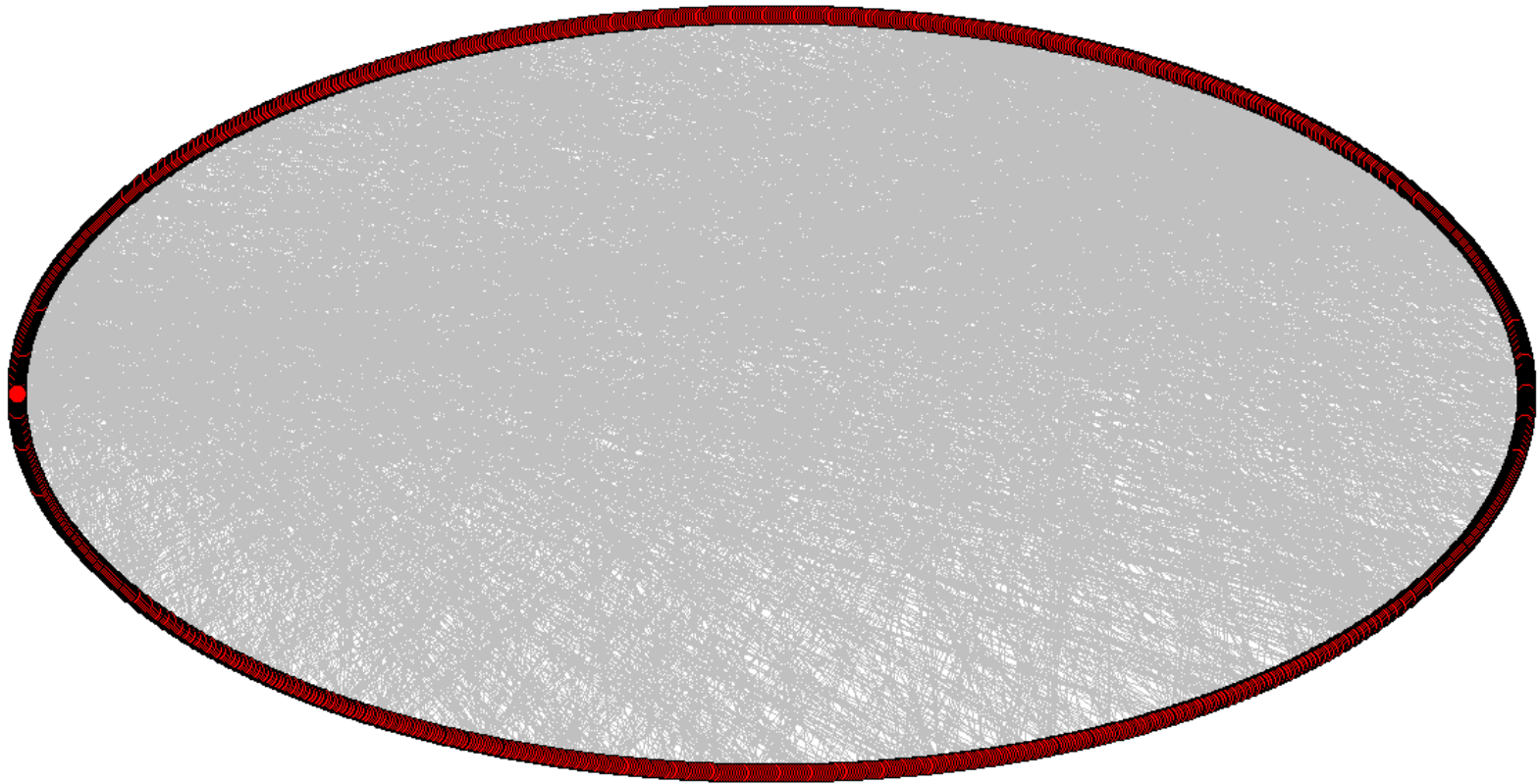
```
-----
Density1 [loops allowed] = 0.00194262
Density2 [no loops allowed] = 0.00194380
Average Degree = 3.19172246

2-Mode Network: Rows=627, Cols=1016
                  Density [2-Mode] = 0.00411596
|
```

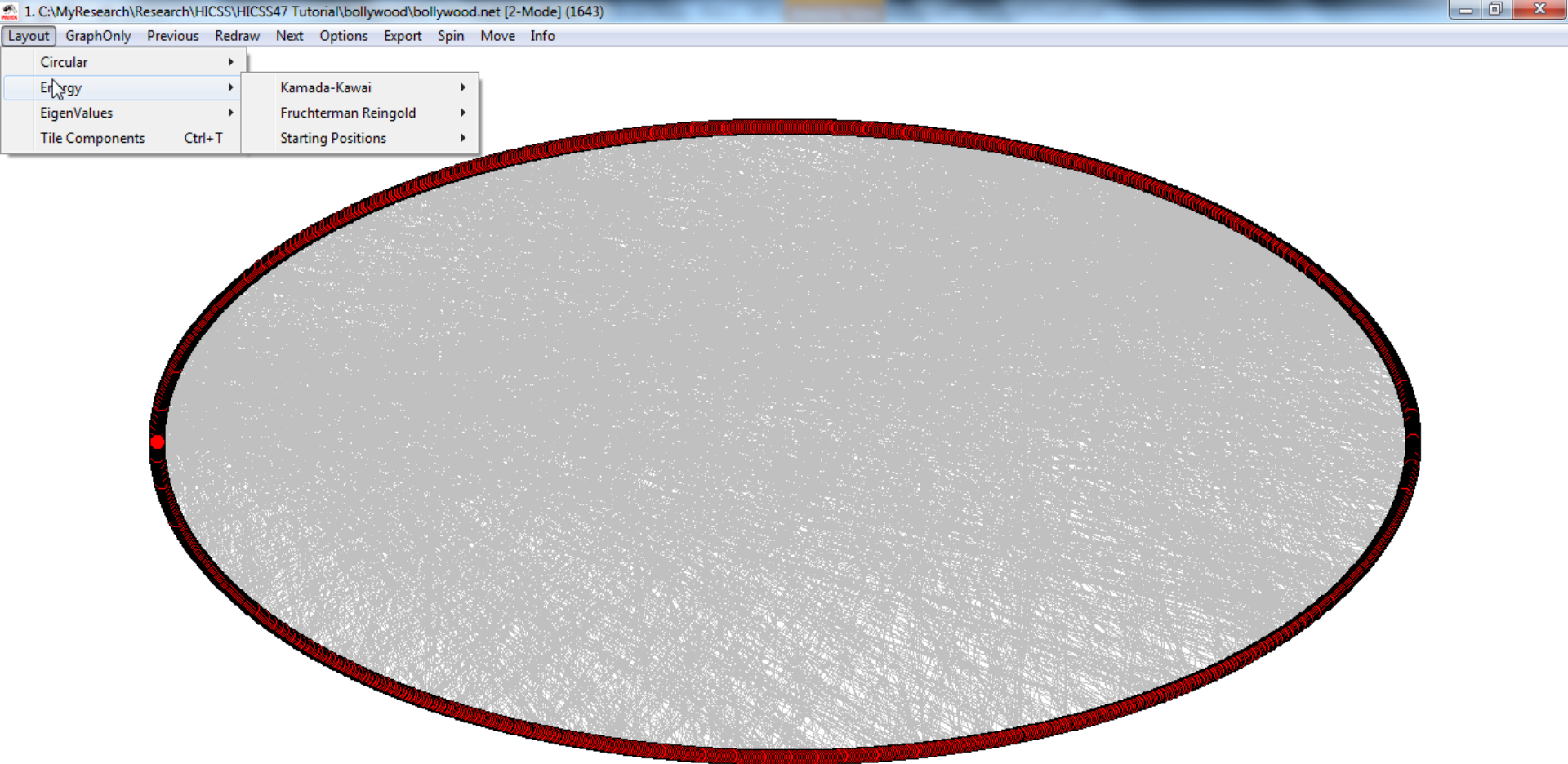
Step 1C: General Info Report for Network



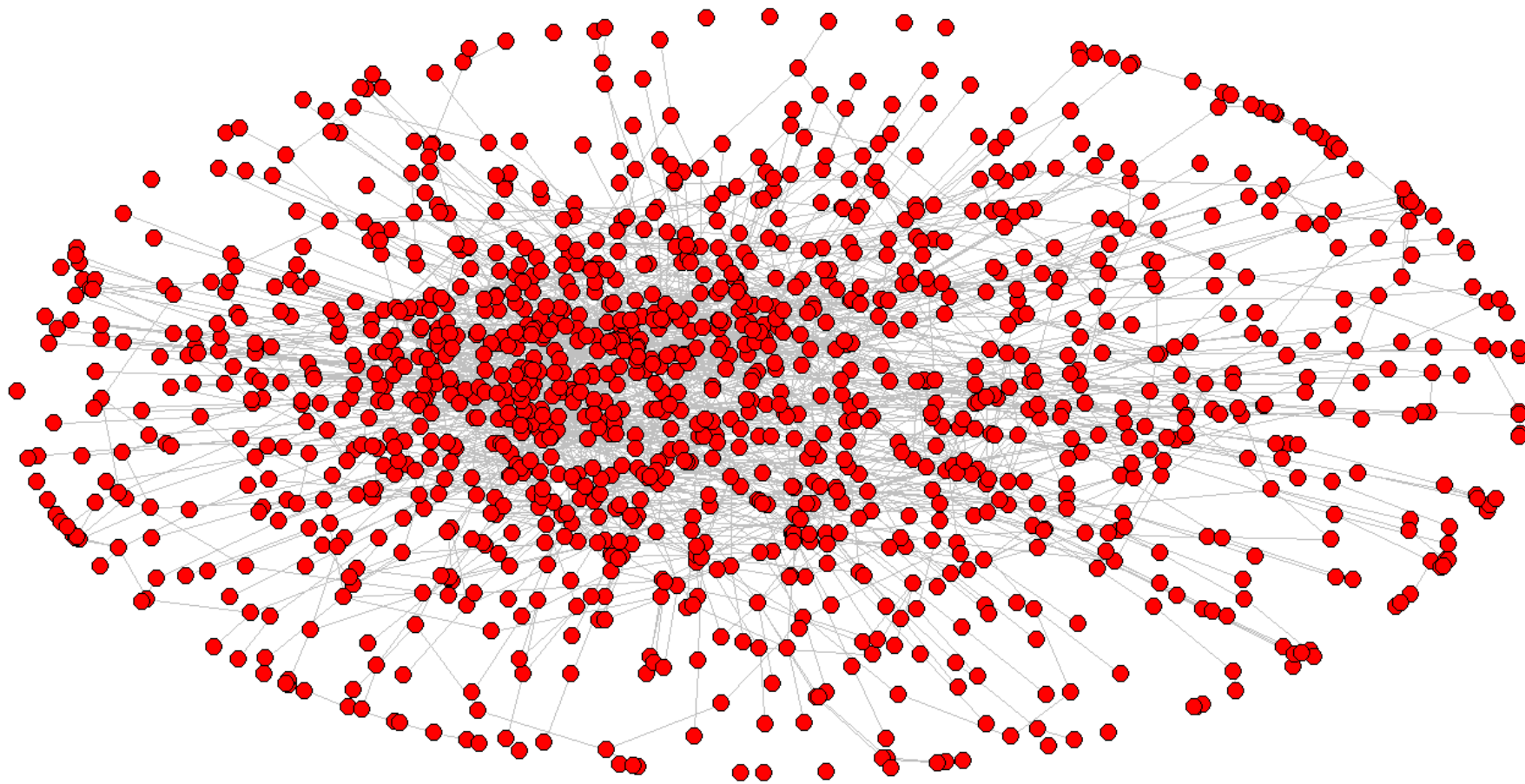
Step 2A: Draw the Network with default Layout



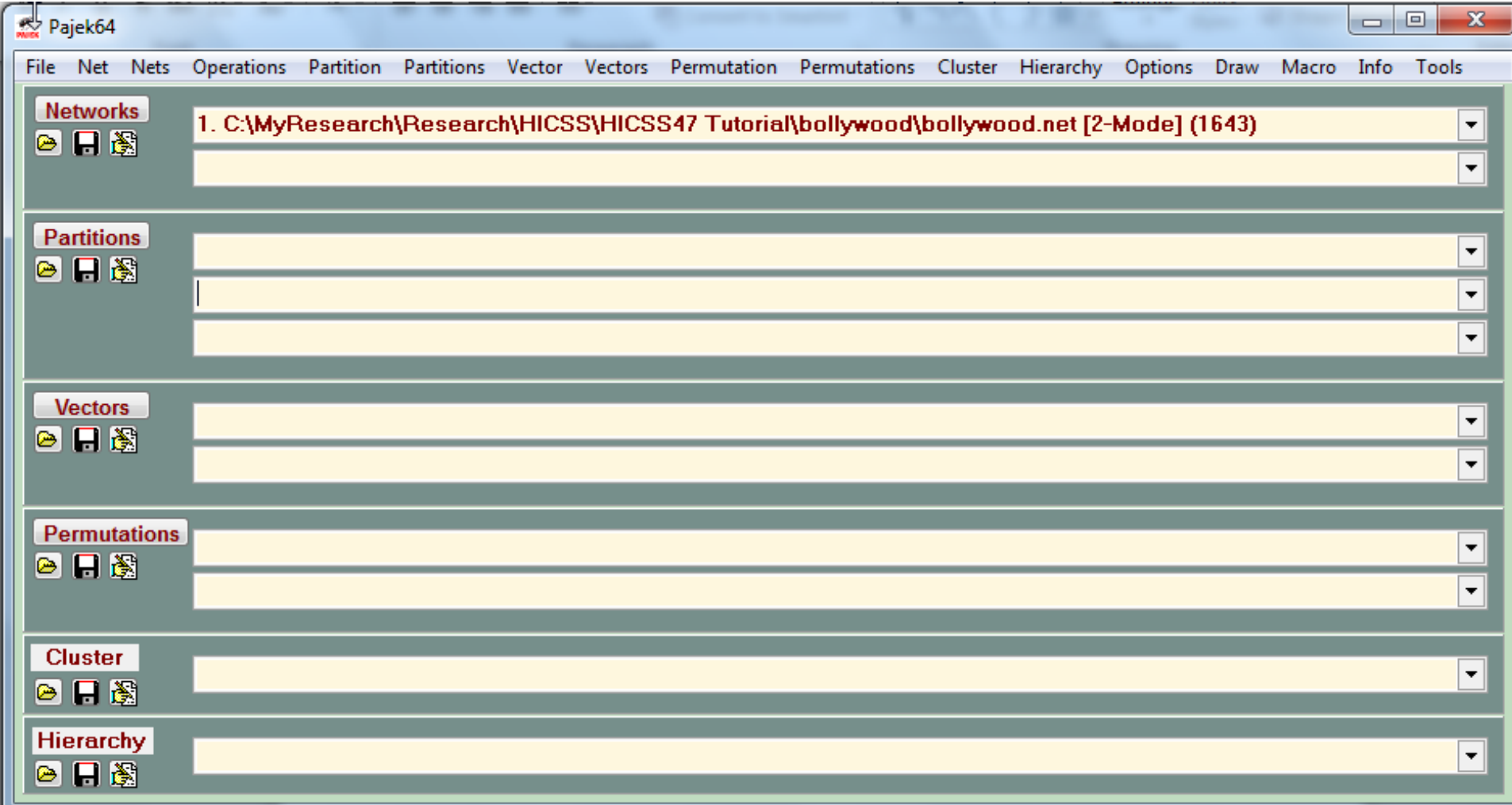
Step 2B: Network with default Layout



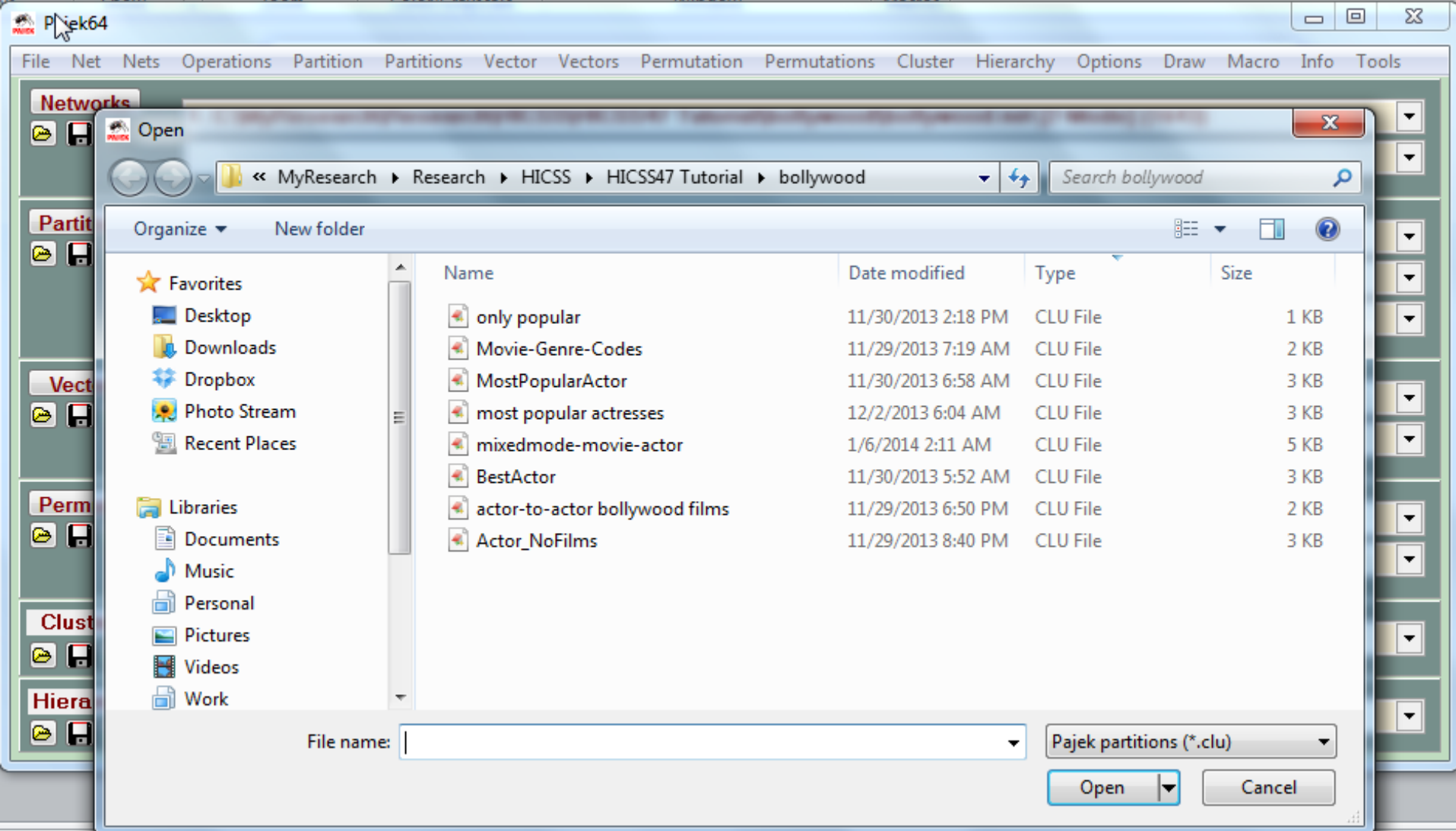
Step 2C: Select new Layout



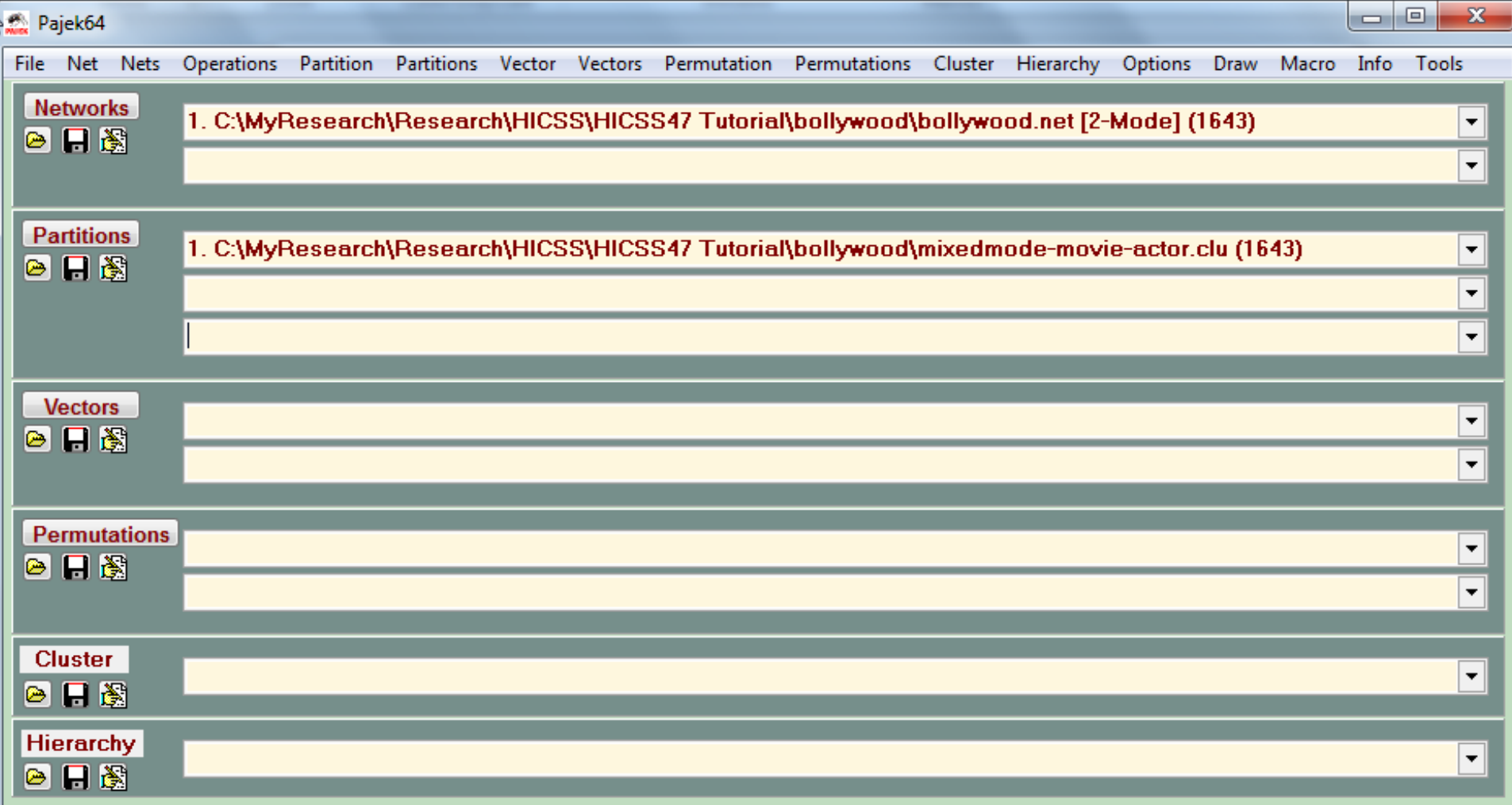
Step 2D: Bipartite Network with F-R Layout



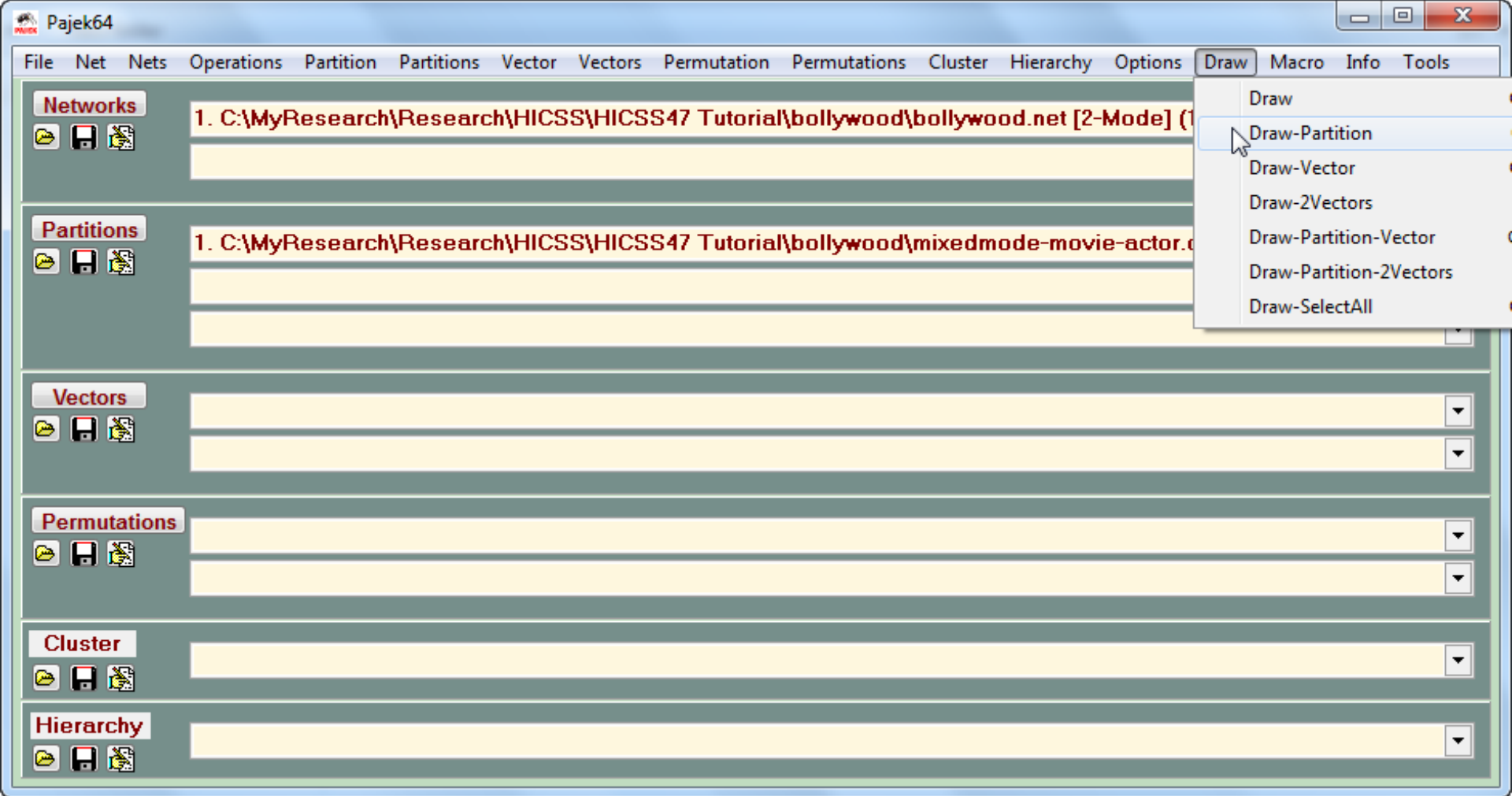
Step 3A: Accessing Partitions
(single column with 627 1s and 1016 2s)



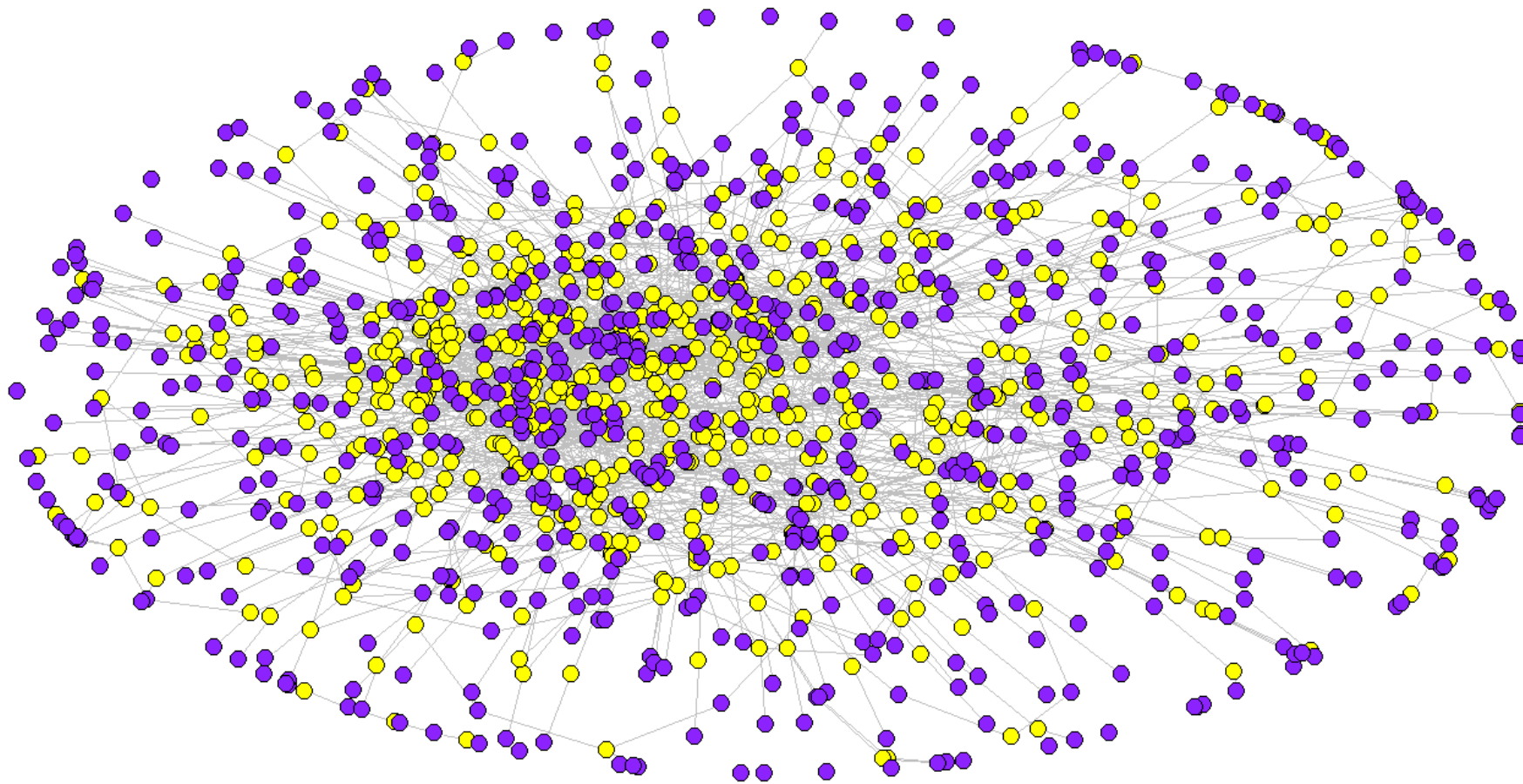
Step 3B: Creating a partition
to distinguish movies from actors



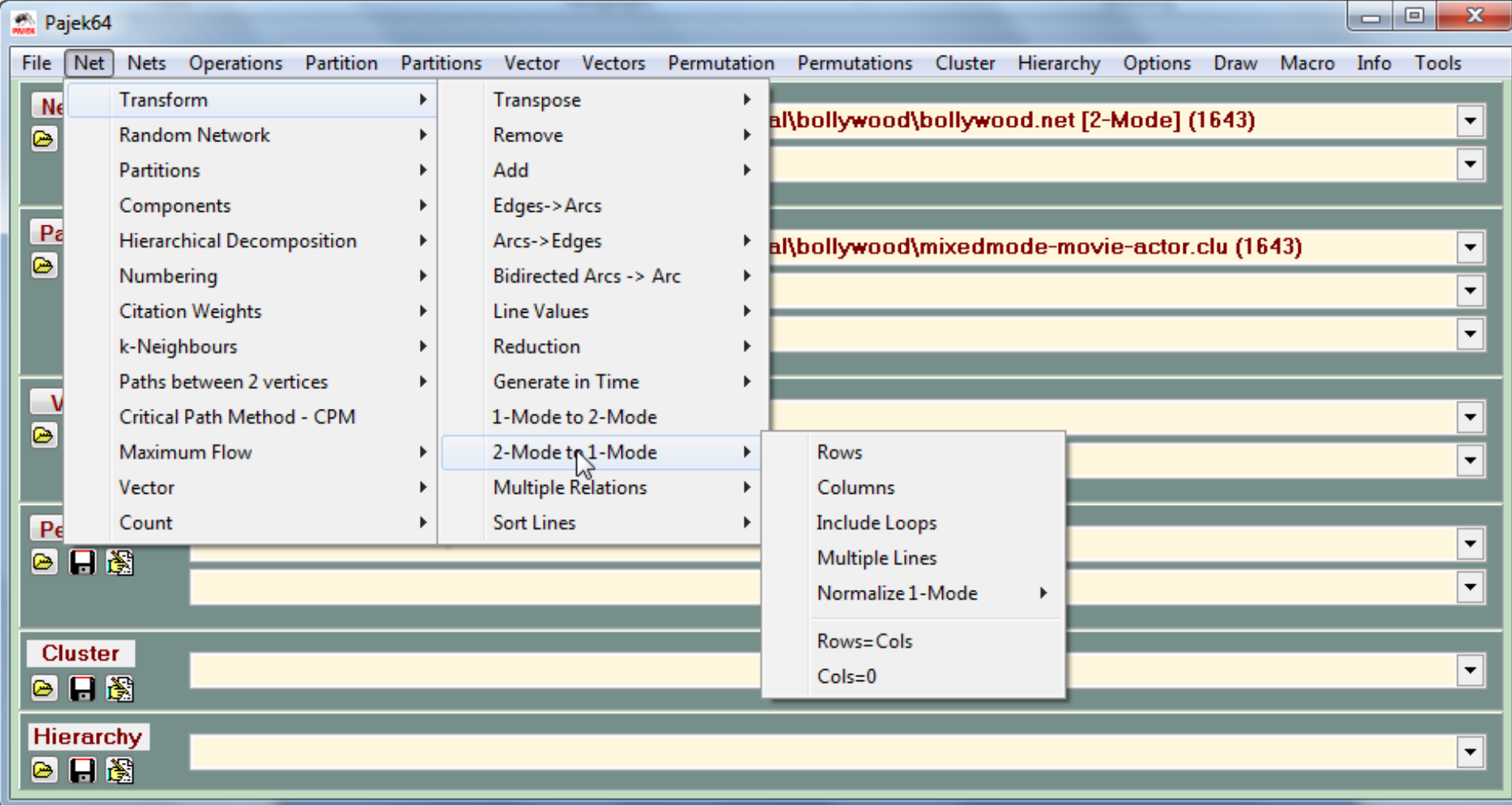
Step 3C: Partition created.
Enables us to distinguish movie and actor vertices.



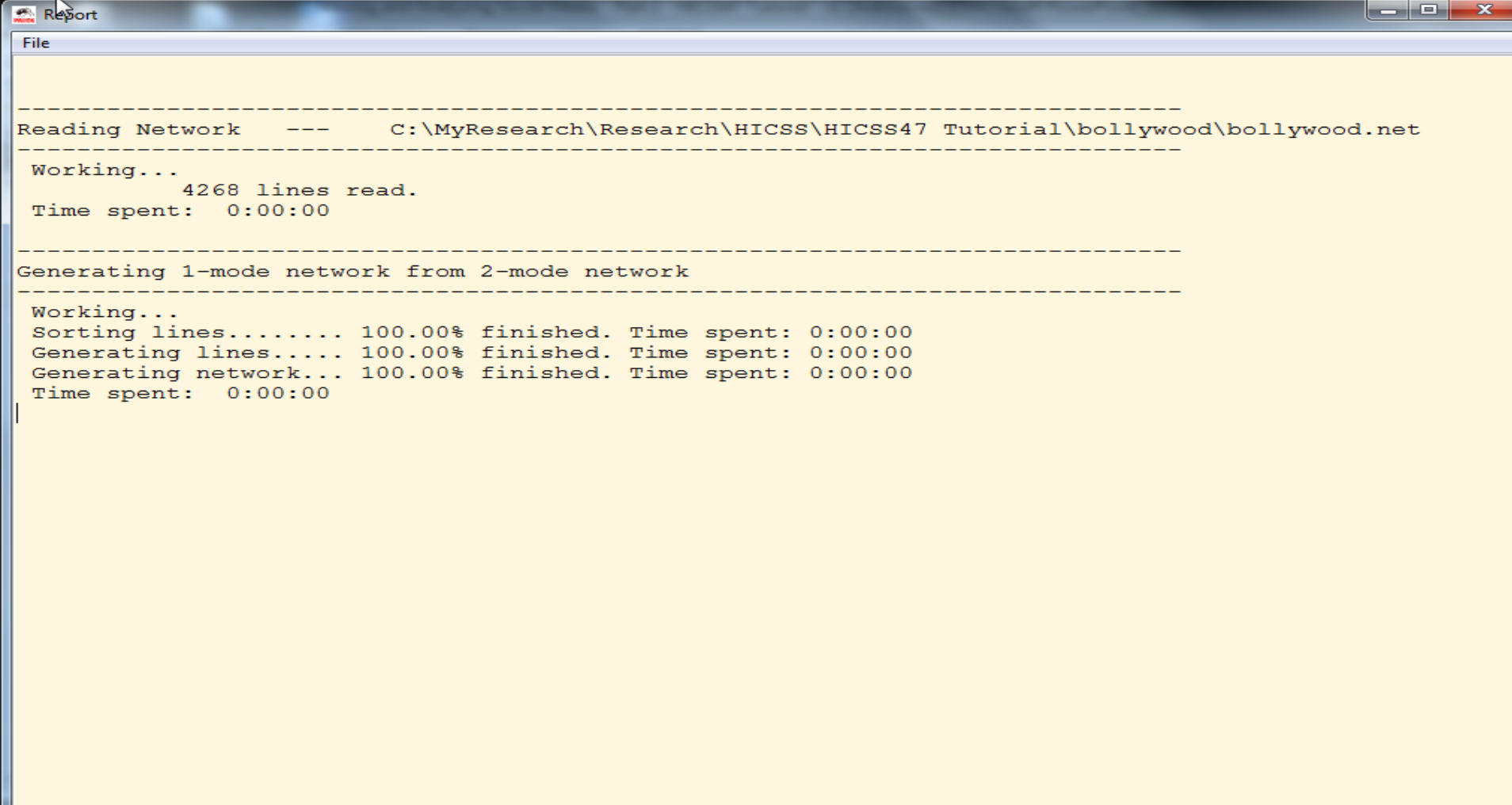
Step 3D: Drawing Partition.
Will distinguish vertices with default colors.



Step 3D: Bipartite network.
Actors are purple and Movies are yellow.



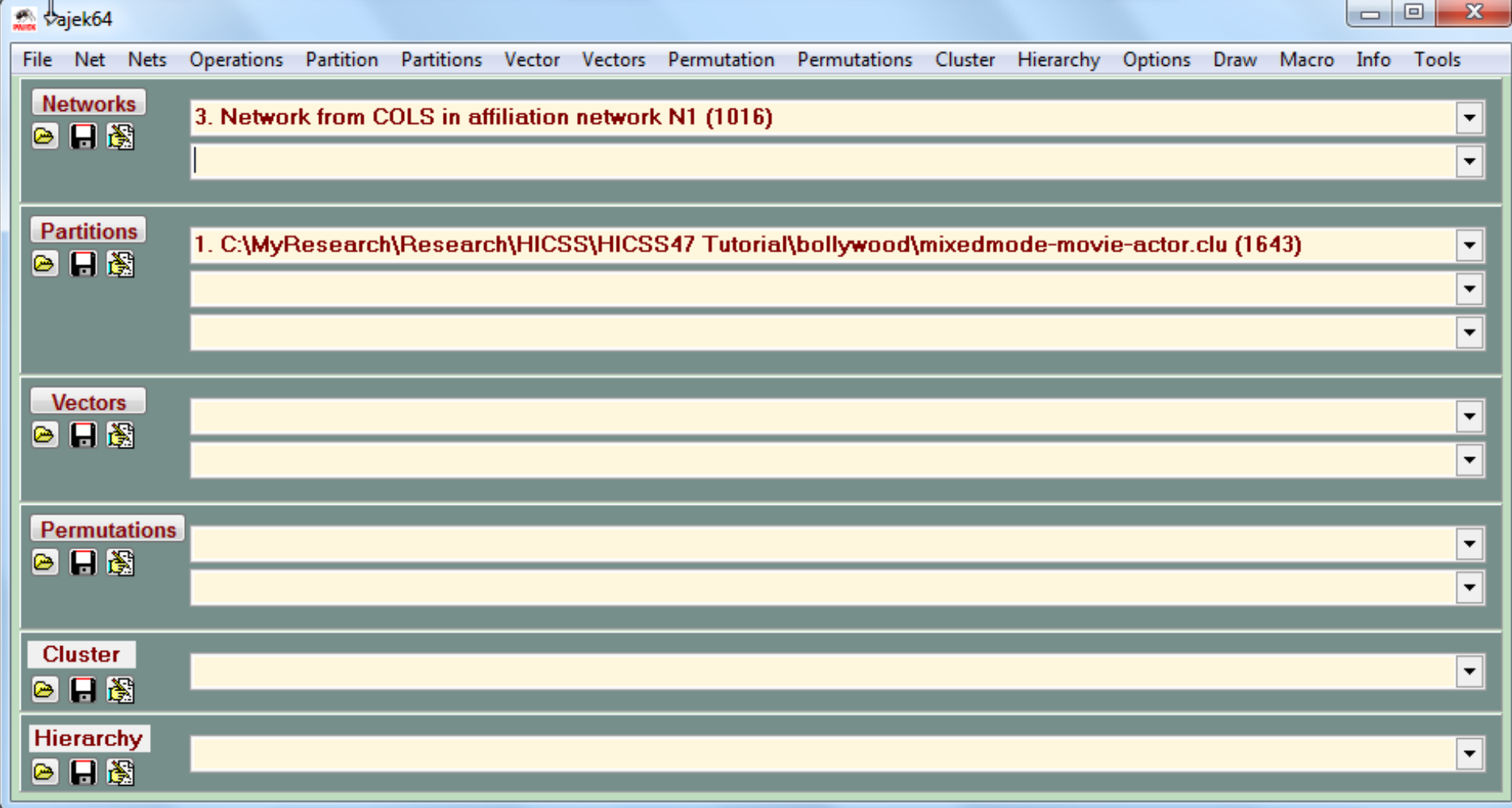
Step 4A: Transforming Bipartite Network into
two 1-Mode networks
(once for Rows and once for Columns)



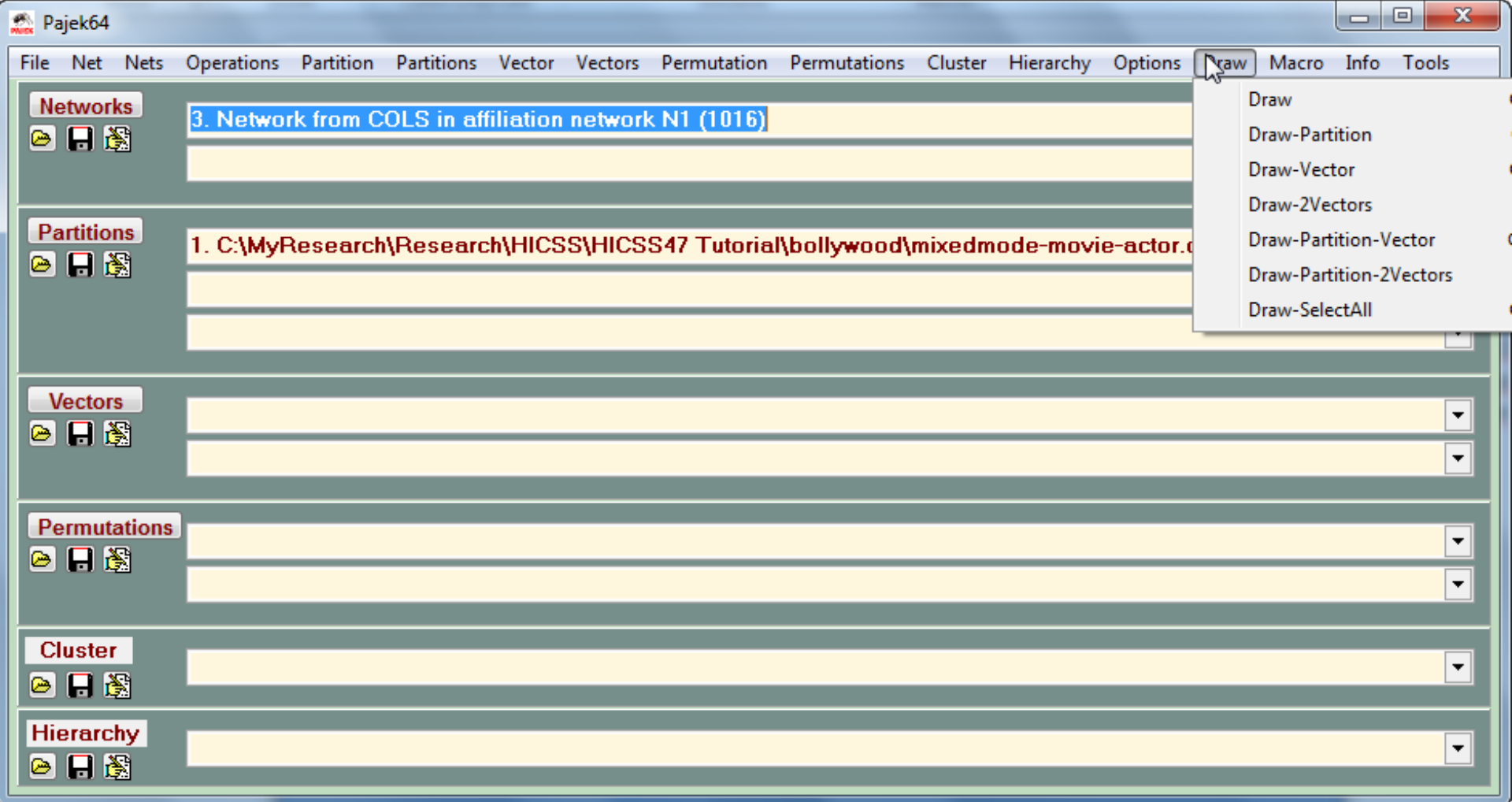
The screenshot shows a Windows application window titled "Report". The window has a menu bar with "File" and a standard Windows window control bar (minimize, maximize, close). The main content area has a yellow background and displays text from a command-line interface, separated by dashed lines. The text indicates the process of reading a network file, generating a 1-mode network from a 2-mode network, and then sorting and generating lines and network data, all of which are completed.

```
-----  
Reading Network    ---    C:\MyResearch\Research\HICSS\HICSS47 Tutorial\bollywood\bollywood.net  
-----  
Working...  
      4268 lines read.  
Time spent:  0:00:00  
  
-----  
Generating 1-mode network from 2-mode network  
-----  
Working...  
Sorting lines..... 100.00% finished. Time spent: 0:00:00  
Generating lines..... 100.00% finished. Time spent: 0:00:00  
Generating network... 100.00% finished. Time spent: 0:00:00  
Time spent:  0:00:00  
|
```

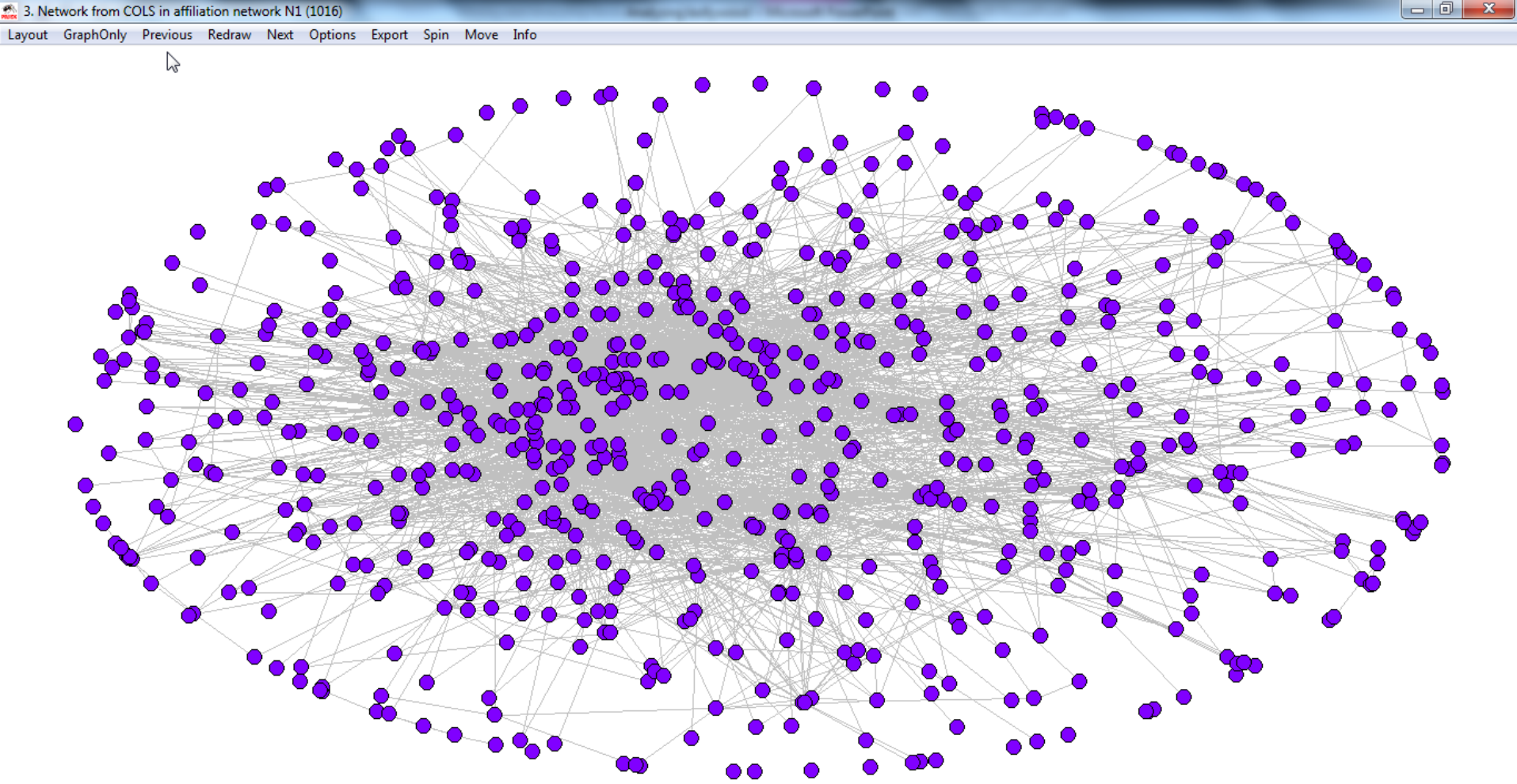
Step 4B:Report confirming transformation.
Again, report generated for each transformation.



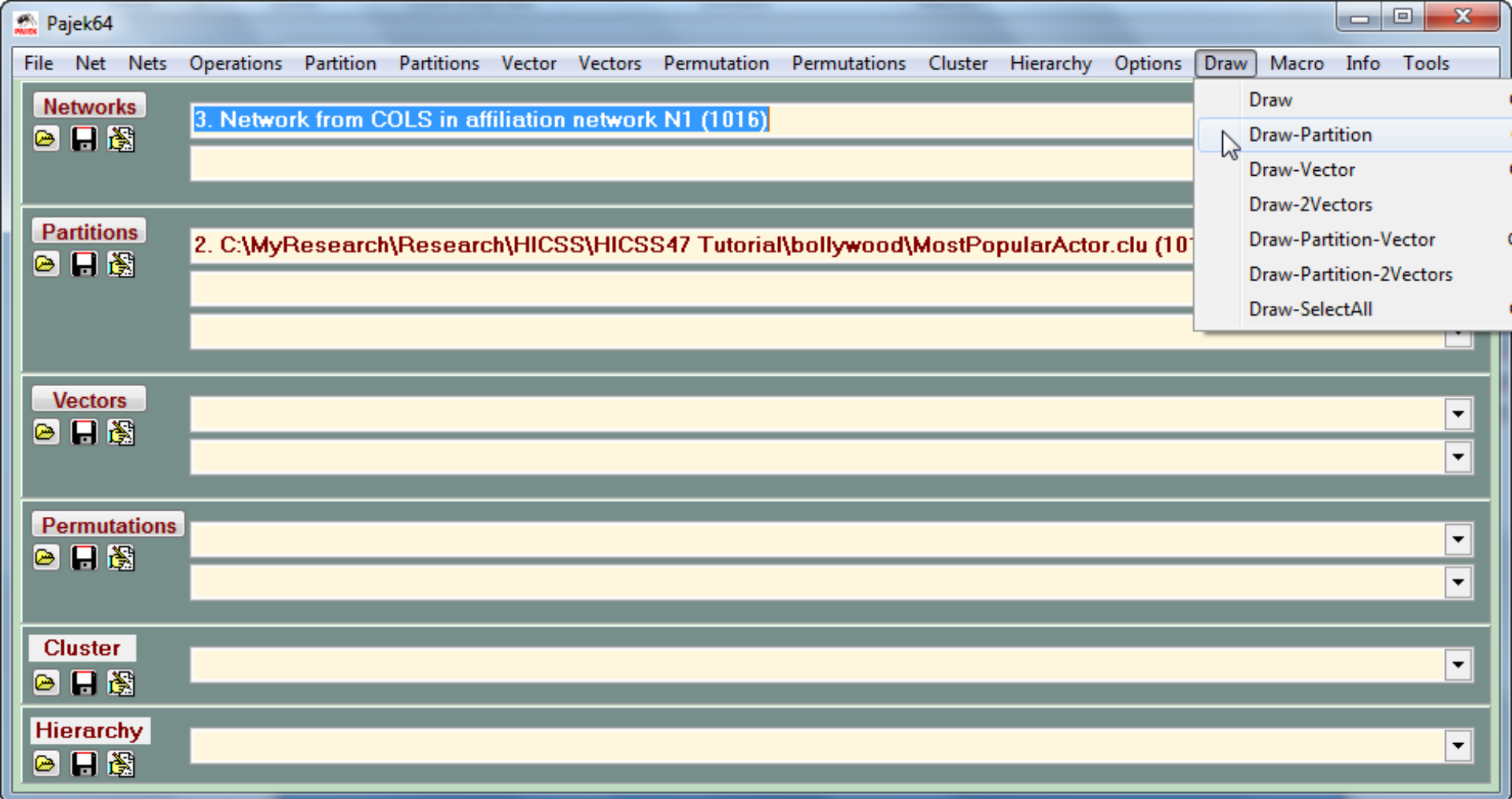
Step 4C: Actor (Column) Network selected.



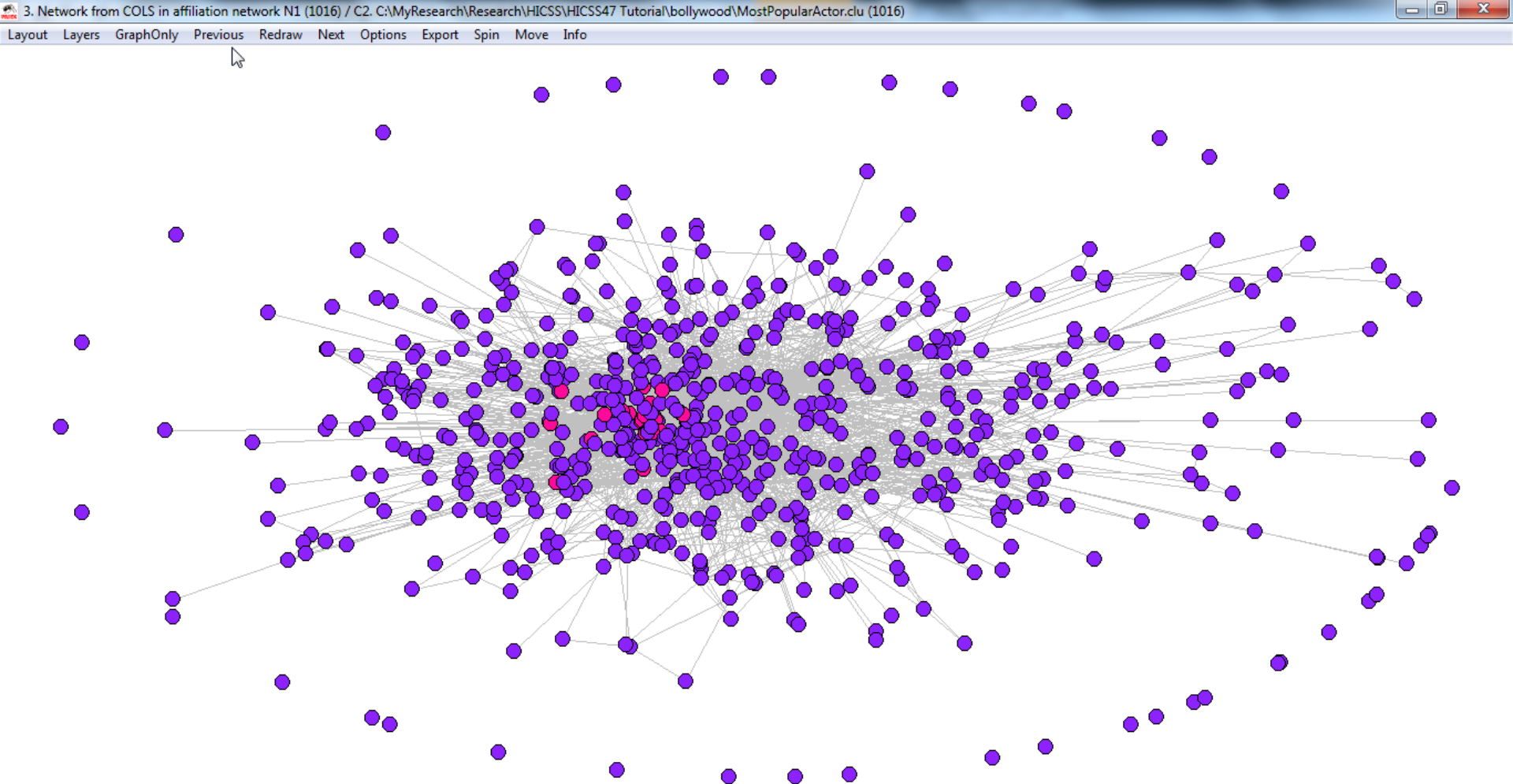
Step 4D: Draw Actor Network



Step 4E: Actor Network with default colors



Step 5A: Create a Partition to distinguish “popular” Actors
(vector of 0s and 1s with 1s for popular)

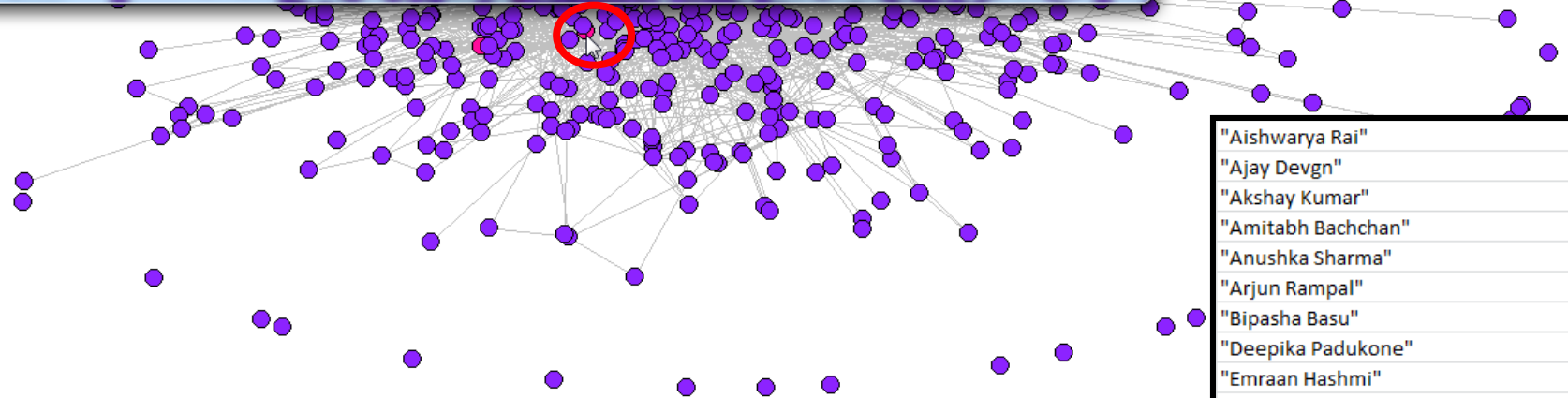


Step 5B: Drawing with most
Popular Actors in Pink

Editing Network: 3. Network from COLS in affiliation network N1 (1016). Vertex:40

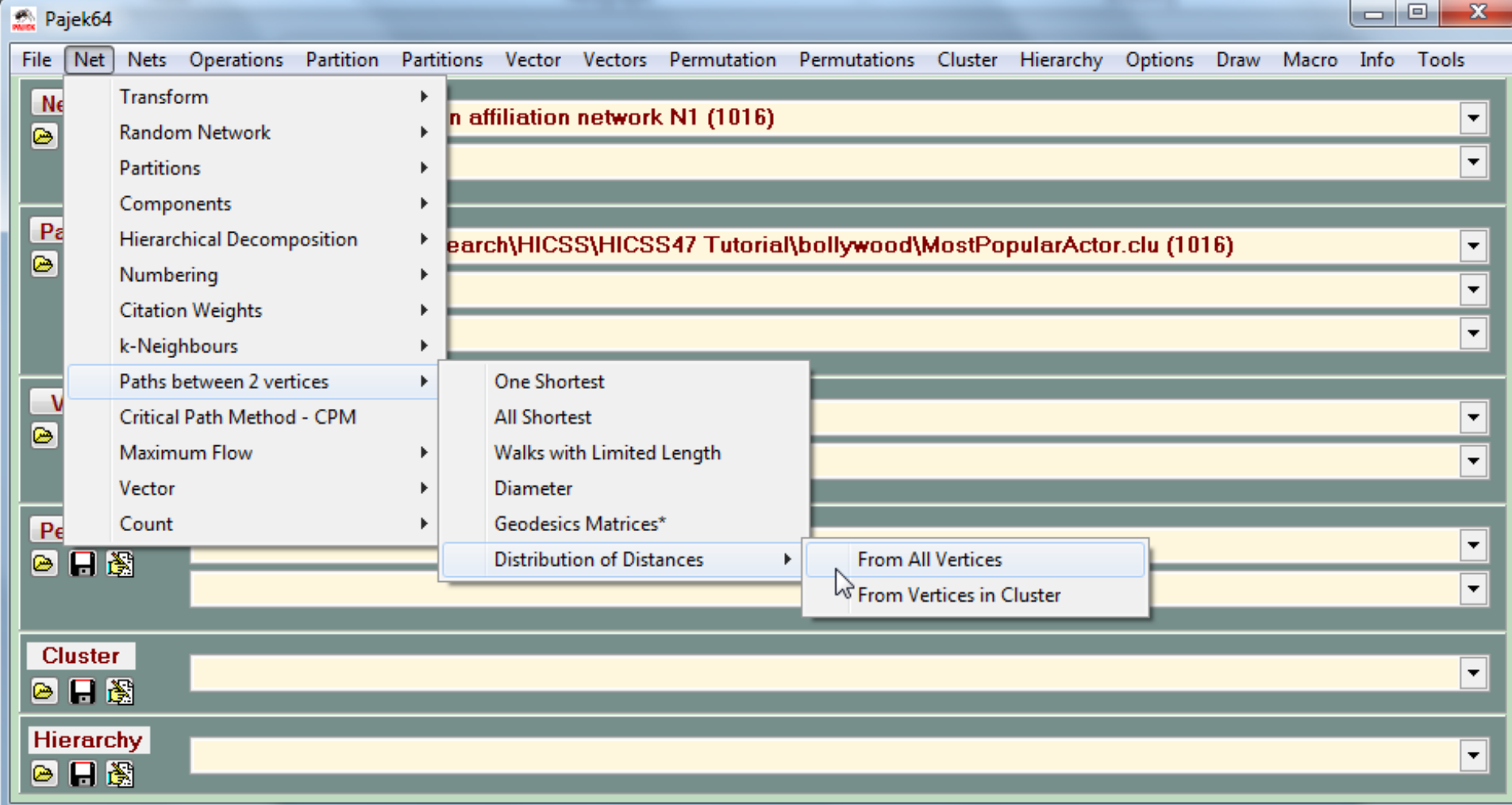
File			
1:	18-40	val=2.0000	/ Abhishek Bachchan-Aishwarya Rai
1:	40-52	val=1.0000	/ Aishwarya Rai-Akshay Kumar
1:	40-73	val=1.0000	/ Aishwarya Rai-Amitabh Bachchan
1:	40-206	val=1.0000	/ Aishwarya Rai-Danny Denzongpa
1:	40-277	val=1.0000	/ Aishwarya Rai-Govinda
1:	40-307	val=2.0000	/ Aishwarya Rai-Hrithik Roshan
1:	40-311	val=1.0000	/ Aishwarya Rai-Ila Arun
1:	40-526	val=1.0000	/ Aishwarya Rai-Neha Dhupia
1:	40-538	val=1.0000	/ Aishwarya Rai-Nikhil Dwivedi
1:	40-658	val=1.0000	/ Aishwarya Rai-Rajinikanth
1:	40-675	val=1.0000	/ Aishwarya Rai-Randhir Kapoor
1:	40-688	val=1.0000	/ Aishwarya Rai-Ravi Kale
1:	40-876	val=1.0000	/ Aishwarya Rai-Sonu Sood
1:	40-900	val=1.0000	/ Aishwarya Rai-Supriya Pathak
1:	40-922	val=1.0000	/ Aishwarya Rai-Tanisha Mukherjee
1:	40-972	val=1.0000	/ Aishwarya Rai-Vikram

Newline



"Aishwarya Rai"
 "Ajay Devgn"
 "Akshay Kumar"
 "Amitabh Bachchan"
 "Anushka Sharma"
 "Arjun Rampal"
 "Bipasha Basu"
 "Deepika Padukone"
 "Emraan Hashmi"
 "Hrithik Roshan"
 "John Abraham"
 "Kareena Kapoor"
 "Katrina Kaif"
 "Priyanka Chopra"
 "Ranbir Kapoor"
 "Saif Ali Khan"
 "Salman Khan"
 "Sanjay Dutt"
 "Shahrukh Khan"
 "Sonakshi Sinha"
 "Sonam Kapoor"
 "Sunny Leone"

Step 5C: Displaying connections
for particular vertex



Step 6A: Calculating Distances from
All Vertices for every Node

Pajek64

File Net Nets Operations Partition Partitions Vector Vectors Permutation Permutations Cluster Hierarchy Options Draw Macro Info Tools

Networks

3. Network from COLS in affiliation network N1 (1018)

Partitions

2. C:\MyResearch\Research\HICSS\HICSS47 Tutor

Vectors

2. Distribution of Distances in N3 (8)

Permutations

Cluster

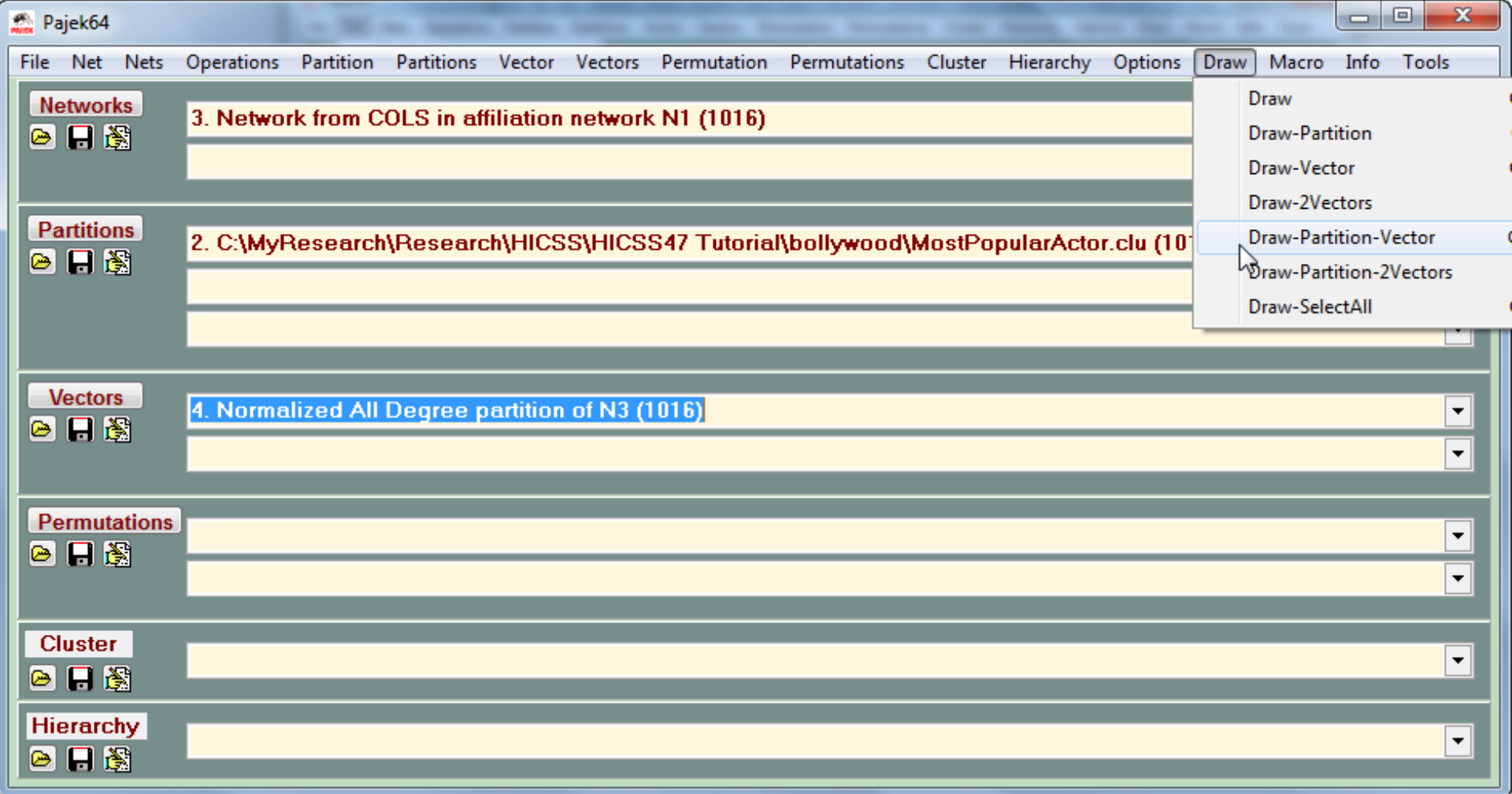
Hierarchy

Editing Vector: 2. Distribution of Distances in N3 (8)

Redisplay

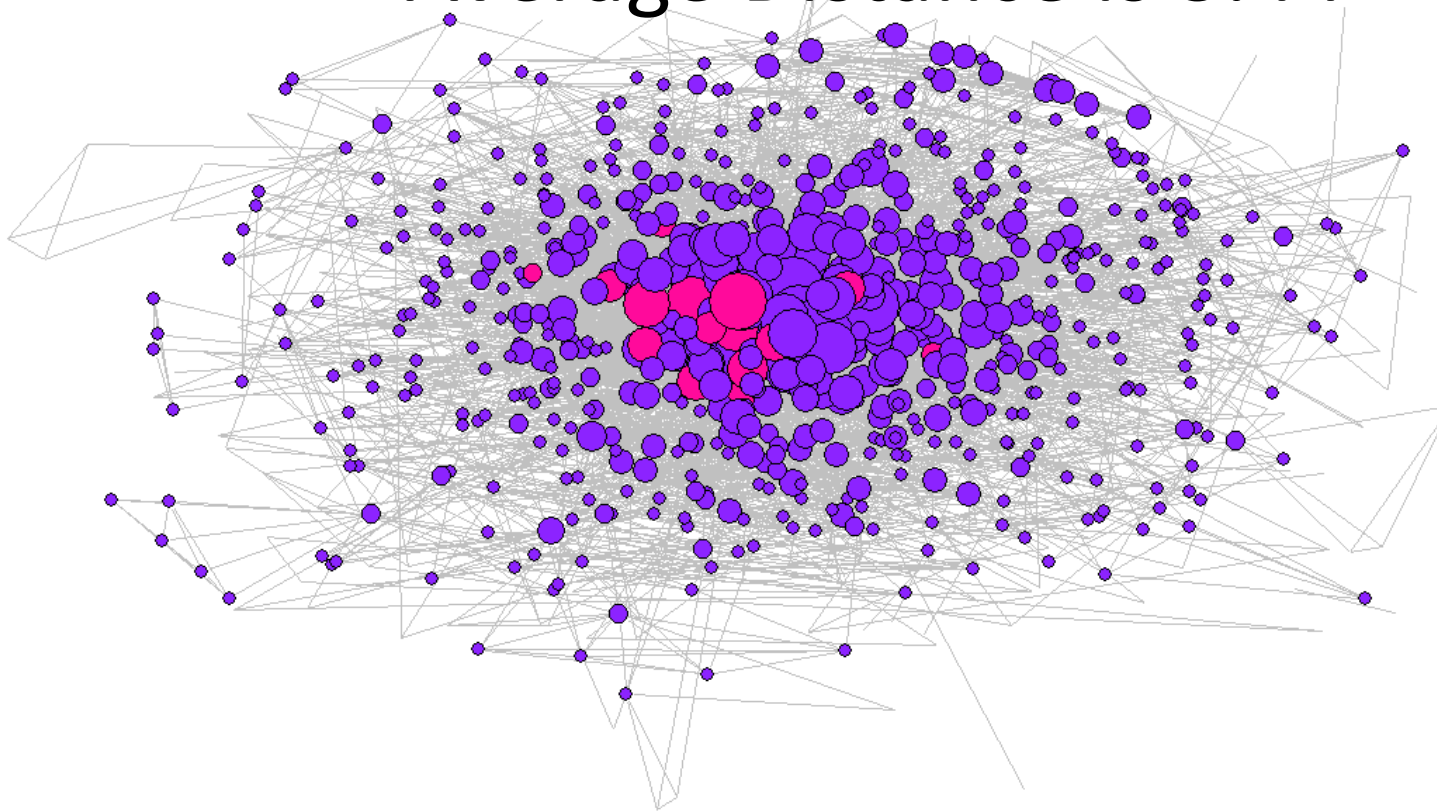
Vertex	Val
1	9730.000000
2	101906.000000
3	321560.000000
4	260446.000000
5	78450.000000
6	14406.000000
7	3066.000000
8	272.000000

Step 6B: Calculated Distribution of Distances
stored in Vector



Step 6D: Drawing combination of
Most Popular (color) and Degree (Size)

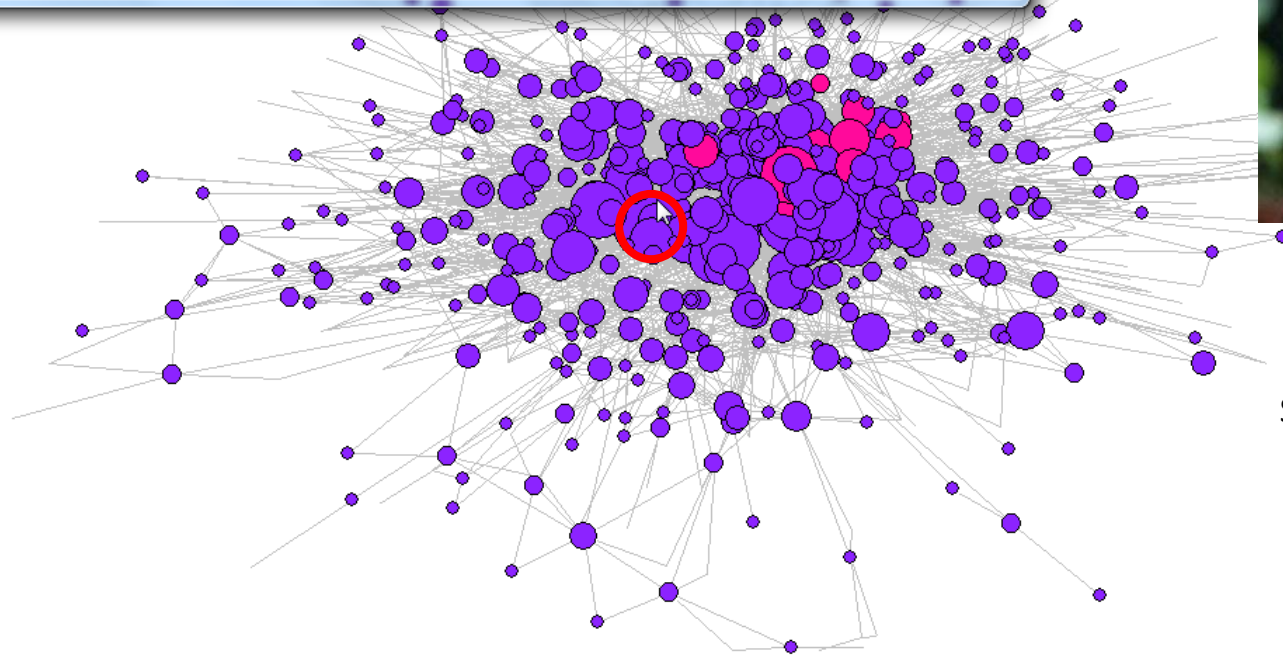
Average Distance is 3.44



Step 6D: Drawing combination of
Most Popular (color) and Degree (Size)

Editing Network: 1. C:\MyResearch\Research\HICSS\HICSS47 Tutorial\bollywood\bollywood_actor_to_actor.net (1016), Vertex:105

File			
1:	1-105	val=1.0000	/ A. K. Hangal-Anupam Kher
1:	12-105	val=1.0000	/ Aashish Chaudhary-Anupam Kher
1:	13-105	val=1.0000	/ Aashish Vidyarthi-Anupam Kher
1:	18-105	val=1.0000	/ Abhishek Bachchan-Anupam Kher
1:	20-105	val=1.0000	/ Abid Ali-Anupam Kher
1:	30-105	val=1.0000	/ Aditya Pancholi-Anupam Kher



470 Movies
Bend it like Beckham
Mistress of Spices
Silver Linings Playbook

Step 6D: Center of Bollywood