Network Analisys, Project One

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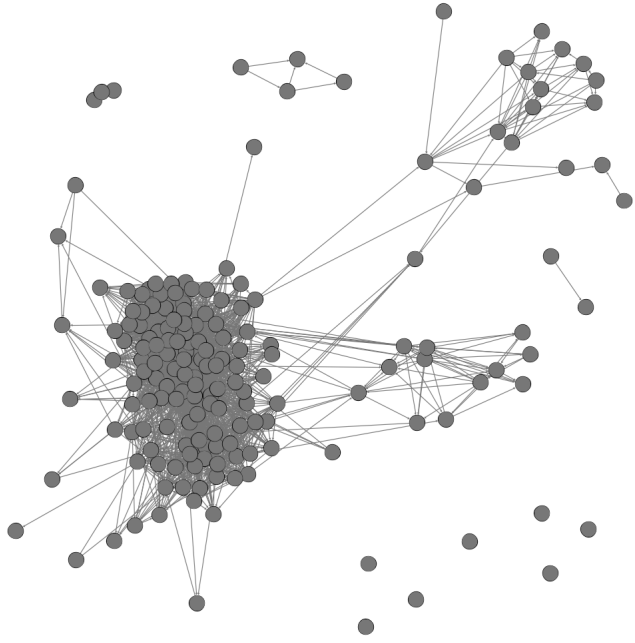
We have successfully downloaded our VK graph of friends from the Internet.
What to do?

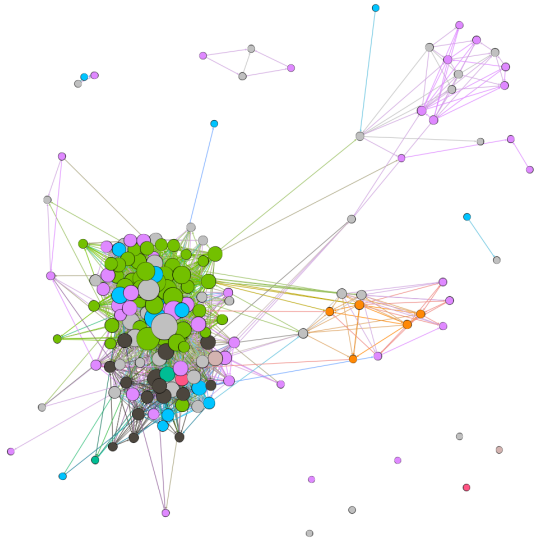
Let's draw it!



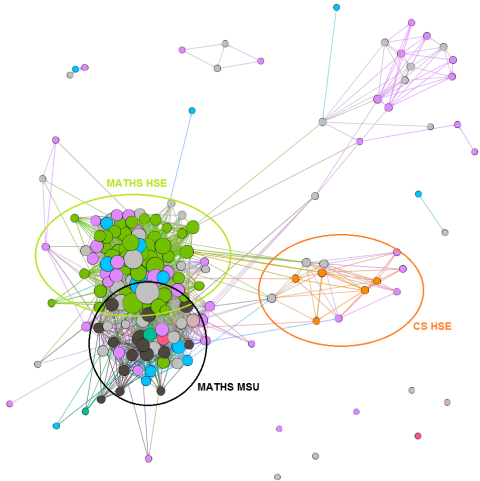
Looks boring. It needs some paint!

If we colour different values of attributes into different colours, it will be more sensible!

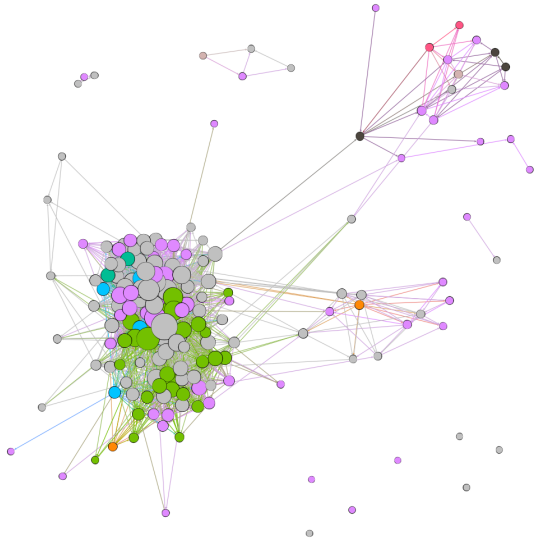
Faculties



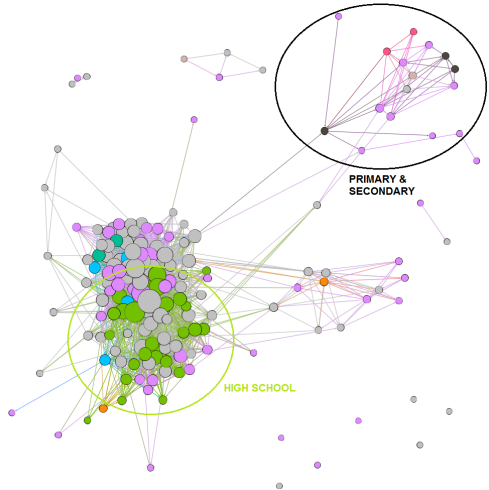
Faculties

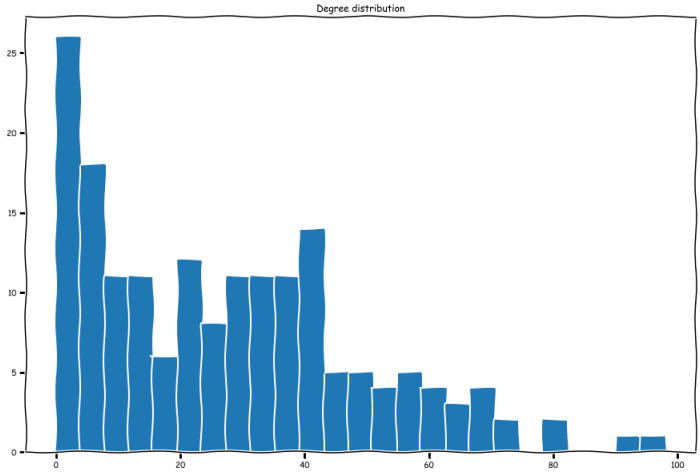


Schools



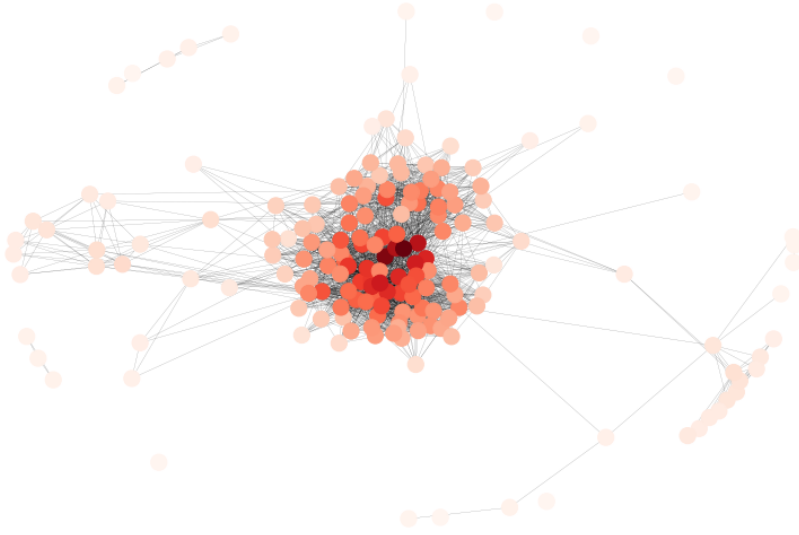
Schools



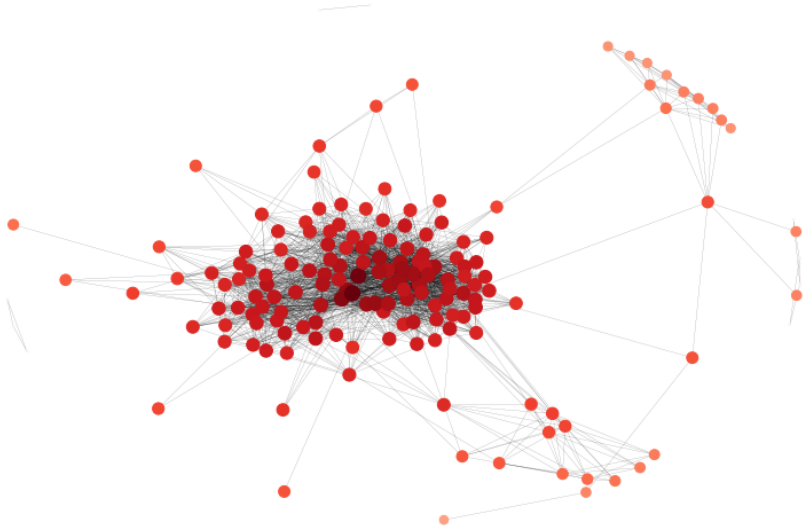

Degree distribution
25
20
15
10
5
0
0
20
40
60
80
100

The distribution is neither like power law nor Poissonian.

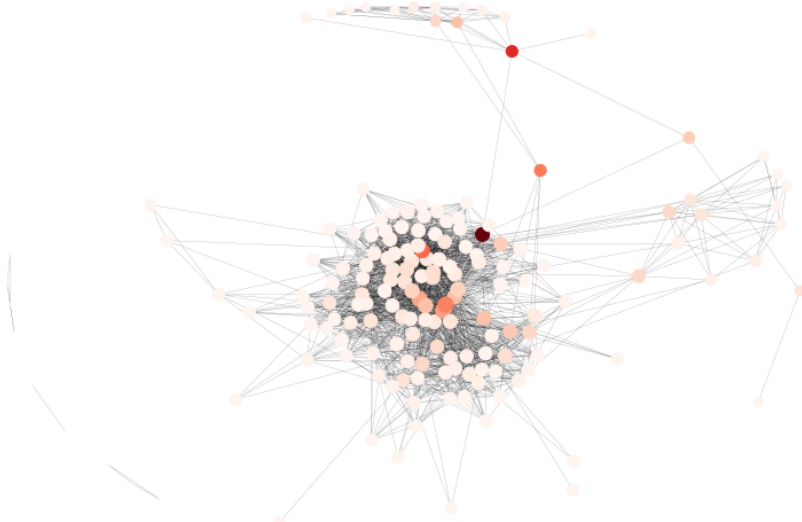
Degree



Closeness



Betweenness



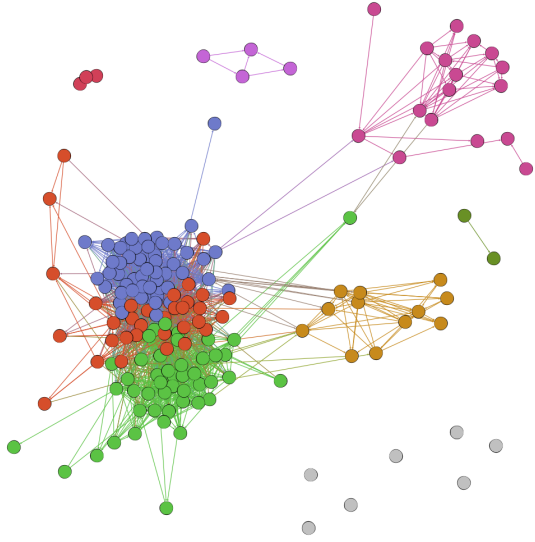
Top nodes:

- for Degree, Closeness and PageRank – the same!
- for Betweenness – different!

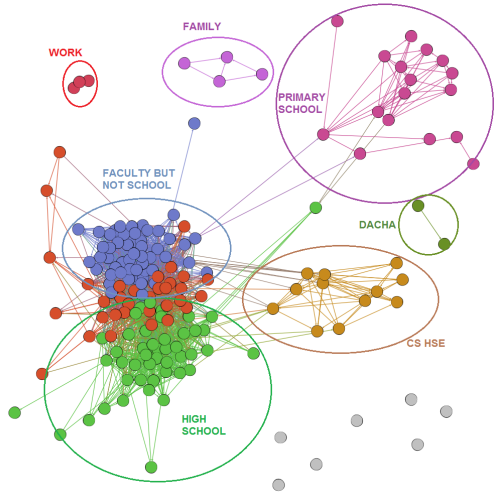
We get following communities after implementing this algorithm:

Vincent D Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Etienne Lefebvre, Fast unfolding of communities in large networks, in Journal of Statistical Mechanics: Theory and Experiment 2008 (10), P1000

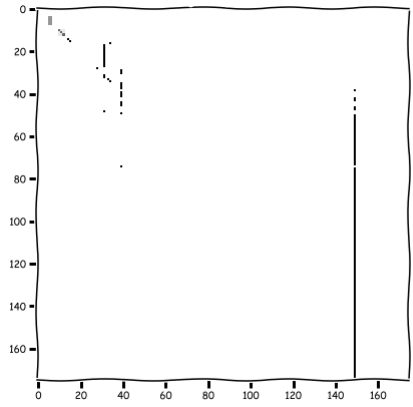
Communities

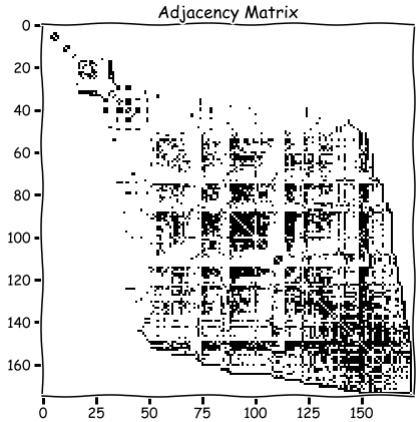


Communities



After implementing the Markov's algorightm we get such communities in comparison with the graph adjacency matrix:





The End. Thank You!