



НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ
УНИВЕРСИТЕТ

Social Network Analysis Network Science

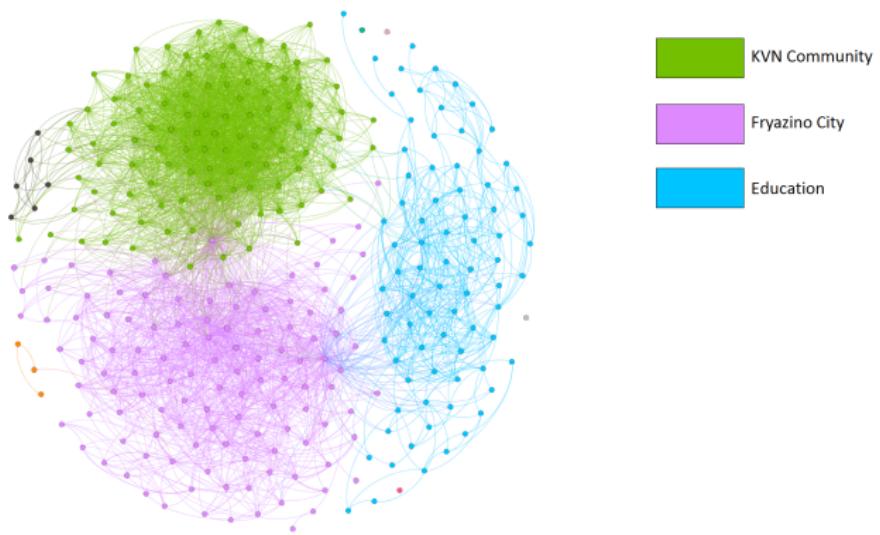
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2017

Friend's graph

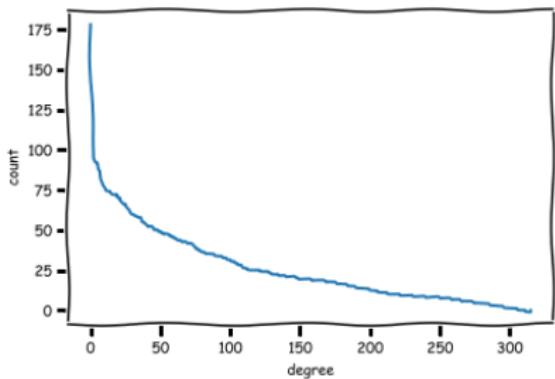
Downloaded from vk.com via api



There are 3 main communities: friends from my hometown, friends from KVN and friends from universities

Friend's graph

Degree distribution



Network complies with **power law**.



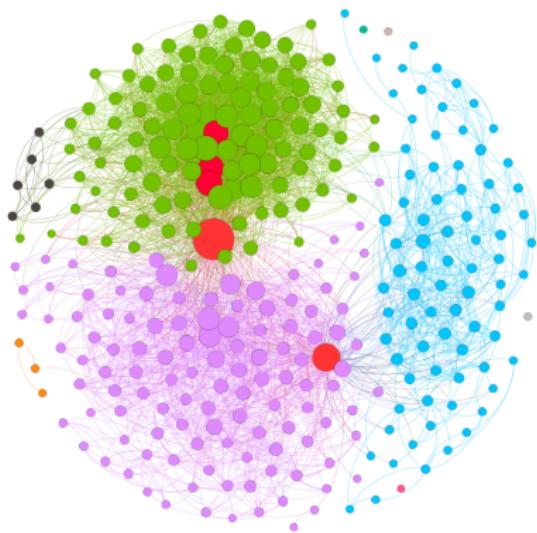
Properties

Clustering coefficient, average path length, diameter

- Clustering coefficient: 0.59
- Average path length: 2.61
- Diameter: 8

Centrality

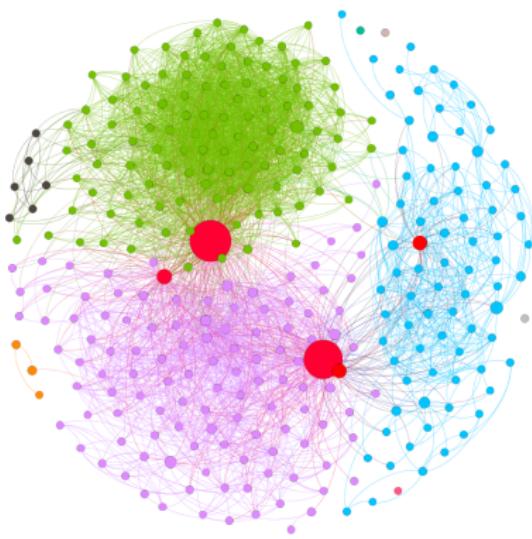
Degree centrality



Node's size is ordered by degree centrality value. Red nodes correspond to top degree centrality nodes. In real world its correspond to friends with highest number of our common friends.

Centrality

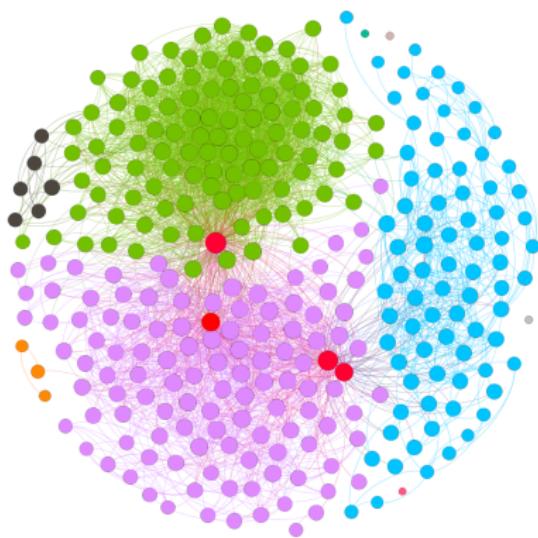
Betweenness centrality



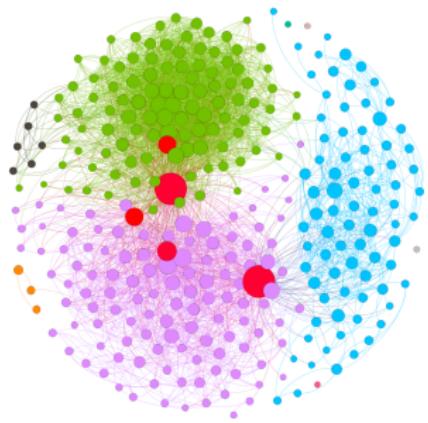
Node's size is ordered by betweenness centrality value. Red nodes correspond to top betweenness centrality nodes. They are friends, who contact with my friends from different communities.

Centrality

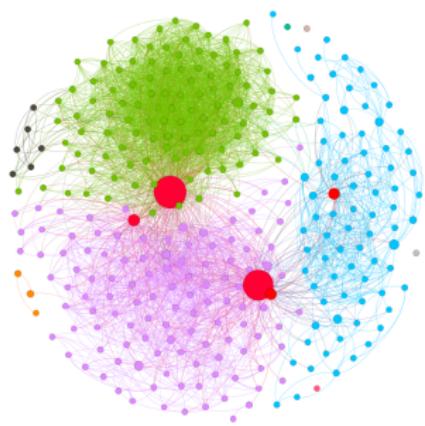
Closeness centrality



Node's size is ordered by closeness centrality value. It can be seen, that all nodes have about identical closeness centrality.



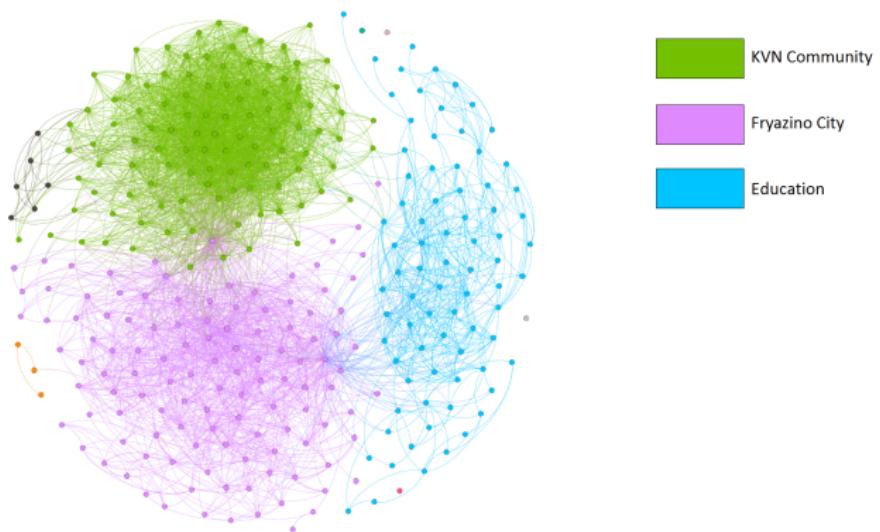
Pagerank



Betweenness

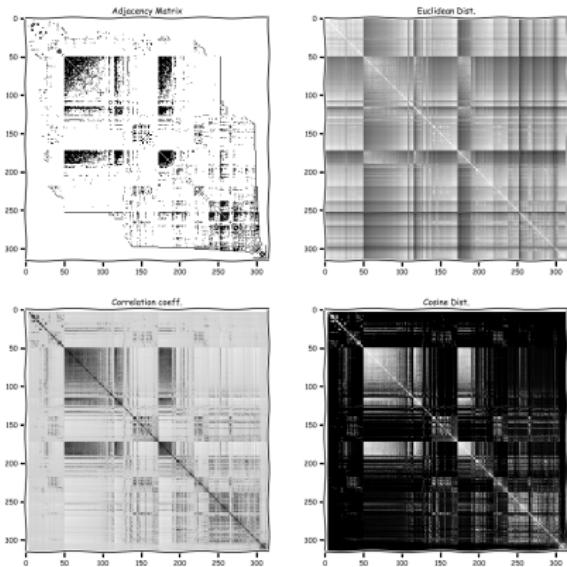
Node's size is ordered by pagerank value. Top pagerank nodes are similar to top betweenness nodes.

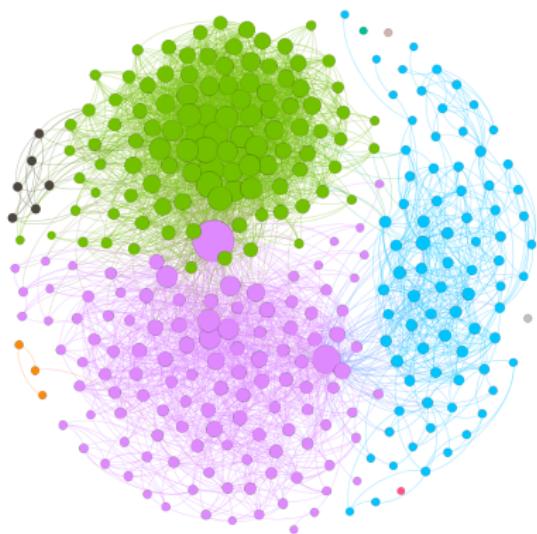
Assortative mixing



People from hometown are friends to people from hometown.
People from KVN — to people from KVN. That is assortative mixing.

Similarity





Nodes with high degree are friends to nodes with high degree, and nodes with low degree — to nodes with low degree. So, this graph is similar to **preferential attachment** model.

Conclusion



- It has analyzed my friend's graph in this project.
- It was used Gephi for visualizing and python's library networkx for analyze.