Laboratory 2

- Write some functions to evaluate the quality of a community:
  1. An edge-cut function counts the total number of edges that are cut by a partitioning.
  2. The normalised mutual information function compares two community partitionings and determines how alike they are.
  3. Newman's modularity function computes how cohesive the communities in a community partitioning are.
- Using some of the SNAP graphs that you downloaded in Lab 1, apply the kmeans clustering methods in `laplacian.py` to partition the graph into $k \geq 2$ communities, where the k-means vectors are generated from eigenvectors and from rows of the adjacency matrix.
- Compute how similar the partitionings are by using NMI.
- Compute how good the partitionings are by using modularity and edge-cut.

Laboratory 2 – Case Study

Evaluate some community-finding methods on SNAP data and on simulated networks with embedded communities:

- Implement your own community-finding algorithm.
- Compare with at least two other algorithms.
- Compute their relative performance in terms of quality (NMI, modularity) and run-time.