**Usage:**

*To run specific experiments see* ***experiments*** *sections.*

This folder contain both the k-plex lib which is used to enumerate the k-plexes, and kplex.py which includes running examples of how to use the kplex\_lib.

Note that these files **are not compiled** (to avoid incompatibility issues) hence you can see a longer running time, if you want to get better running time you should compile the python files to a version that **matches** you platform.

kplex.py also provides you a command line tool to run basic kplex enumeration.

You can also run the example program by calling kplex.py directly from python

Make sure that **snap.py** and all other .**py** files in this folder are in the same folder as **kplex.py**.

**Usage:**

Use python kplex.py args to run the program:

For example to run the algorithm on a graph with 1000 nodes and 10000 edges use:

python kplex.py --n=1000 --m=10000 --k=5 --type="all" --num\_of\_kplex=1000 --output=”output\_file”

To find k-plexes in a specified graph use:

python kplex.py —file=“my\_graph\_file.graph” --k=5 --type="all" --num\_of\_kplex=1000

**The expected graph format:**

Nodes are represented by a unique id (integer)

Each line in the file represents an edge by 2 nodes with a tab between them: v1 v2

You can see examples of the graph format under the folder graphs.

The kplex.py file contains many examples of how to use the kplex libraries.

**Experiments**

To run the experiments you need to specify the specific experiment you want.

The output will be found in a csv file and in a txt with the name of the experiment (in the folder of the py files)

* **Comparison with state of art**python kplex.py --type="all" --experiment="comparison"
* **Varying Node Size**python kplex.py --type="all" --experiment="nodes"
* **Varying Edge Density**  
  python kplex.py --type="all" --experiment="edges"
* **Varying k**python kplex.py --type="all" --experiment="k"
* **Varying Number of Results**python kplex.py --type="all" --experiment="results"
* **Connected versus Unconnected k-plexes**python kplex.py --type="all" --experiment="connected"
* **Non-synthetic Datasets**python kplex.py --type="all" --experiment="non-synthetic "