**Java NemoLib – edit**

This documentation records all activities that edit the current nemolib-java, to improve the performance and add directed graph capability.

First I will explain how to install the current nemolib.

1. Installation and testing
   1. Linux
2. NemoLib – You should obtain **nemolib-0.1-SNAPSHOT.jar** library
   1. Log in to your Linux account and go to the directory where you want to copy the file from GitHub
   2. Command as the following: (Make sure you do not have “nemolib” directory in your linux )

git clone <https://github.com/drewandersen/nemolib.git>

* 1. After “nemolib” directory is created, go to the directory

cd nemolib

* 1. Type the following command

mvn package

1. Test Nemolib
   1. Download file

git clone <https://github.com/drewandersen/nemoprofile.git>

1. Install
   1. cd sequentialApp
   2. Modify compile.sh (modify the path for nemolib-0.1-SNAPSHOT.jar)
   3. Modify run.sh (the correct path for for nemolib-0.1-SNAPSHOT.jar)
2. Compile and run (type the followings)

./compile.sh

./run.sh ../data/test01 3 100

* 1. Windows

1. Environment: Netbeans and Cygwin
   1. For Netbeans, need jdk 8.x version (jdk 9.x not work)
   2. Download and install Cygwin (follow the link to learn how to install gcc and g++)

<http://preshing.com/20141108/how-to-install-the-latest-gcc-on-windows/>

* 1. Systems-> advanced->Environment Variables
     + 1. From the path variable, add
       2. C:\Cygwin64\bin (for 64 bit)
       3. C:\cygwin\bin (for 32)

1. Nemolib install
   1. Download as zip file

Link: <https://github.com/drewandersen/nemolib>

Open the project in the netbeans: Then build

Remember where is your jar file (target folder):

It will be in nemolib-master/target/ nemolib-0.1-SNAPSHOT.jar

1. Test NemoLib

<https://github.com/drewandersen/nemoprofile>

1. New project 🡪 java with existing code: Main folder is sequentialApp.

Add library jar from nemolib-master/target/ nemolib-0.1-SNAPSHOT.jar

1. Compile nauty and copy the labelg.exe program to sequentialApp/src/main/resources/

(If your project folder is sequentialApp , then no need to change)

The labelg program link is declared in nemoLib Labeler,java file

1. Click project🡪property. Add argument ../data/test01 3 100 (properties->run)
2. Compile nauty

In Windows, labelg program should be separately compiled

<http://pallini.di.uniroma1.it/>

Download nauty26r10.tar.gz

In linux, just follow the Readme file

In windows, use cygwin

Open cygwin-terminal

Go to the downloaded folder (cd /cygdrive/c/users/Wooyoung/programs)

Then use as if it is a linux-shell

If you are using netbeans IDE (using cygwin), just create a project with existing source, will build automatically

1. NemoLib-java edit
2. In the sequentialApp.java (testing program), change line 57

RandomGraphAnalyzer rga = new RandomGraphAnalyzer(new RandESU(probs), RAND\_GRAPH\_COUNT);

To

RandomGraphAnalyzer rga = new RandomGraphAnalyzer(new RandESU(probs), randGraphCount);

Since current setting generate 1,000 graphs no matter what, it is not working when you try to test with small number of random graphs.

1. 6/19/2018

Add directed property to the graph

SequentialApp.java 🡪

Boolean directed=false;

try {

targetGraph = GraphParser.parse(filename,directed );

}

GraphParser.java 🡪 Add one more file to add “directed”

Graph.java 🡪

private List<AdjacencyList> dir\_adjacencyLists; // added for directed graph

private Boolean directed; // added for directed graph

And changed most of functions

RandESU.java-> When create subgraph object, give the targetgraph’s dir as a parameter, and give the dir\_adjlist

public static void enumerate (Graph graph,

SubgraphEnumerationResult subgraphs,

int subgraphSize, List<Double> probs, int vertex) {

}

This function create subgraph object.

Subgraph.java-> add directed, and dir\_adjlists

Currently the matrix is only for upper diagonal bits for undirected graph.

Need another matrix that has the whole matrix for directed graph

So, modify AdjacencyMatrix as well

RandomGraphGenerator 🡪 generate function. Create graph with direction

6/22/2018

Currently everything works fine. However, since matrix bit set goes several for statement, it can slow down. Therefore, we will add additional adjacencylist that stores the to🡪from.