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ADM2017

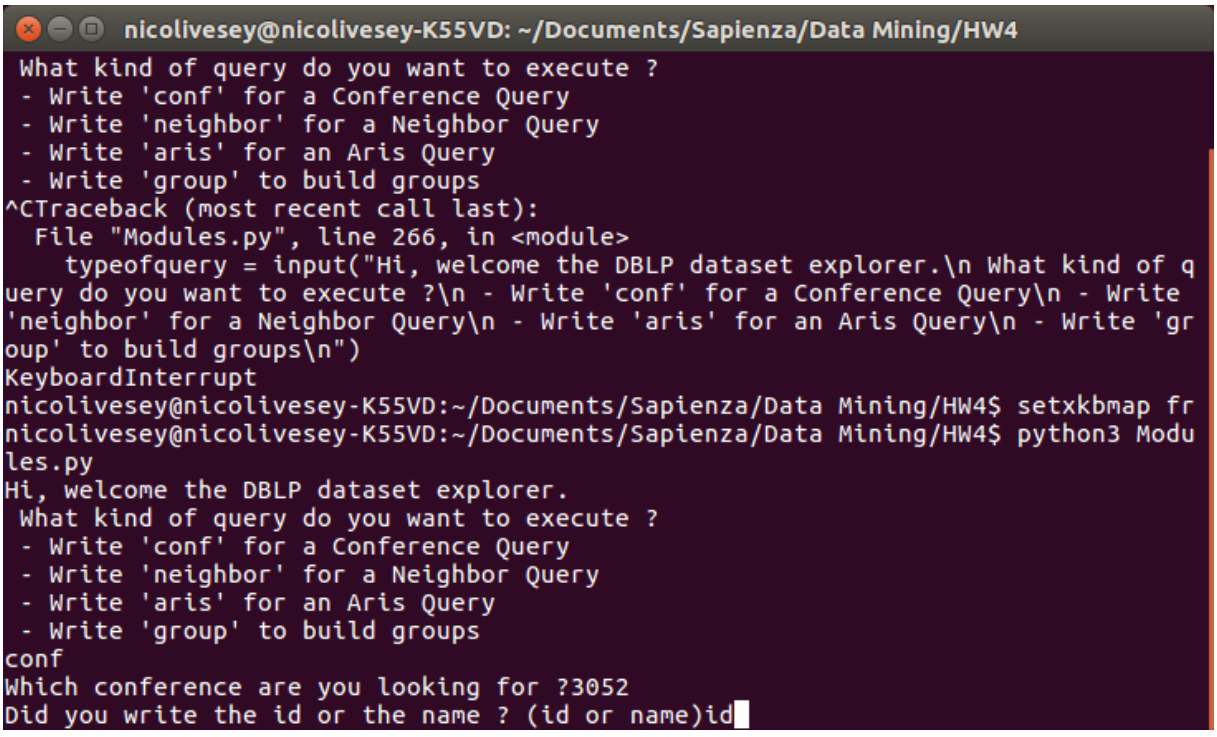
Homework 4

So first, I wanted to tell you that we were only two on this homework since Hamed Asadollahi never replied to my emails and messages.

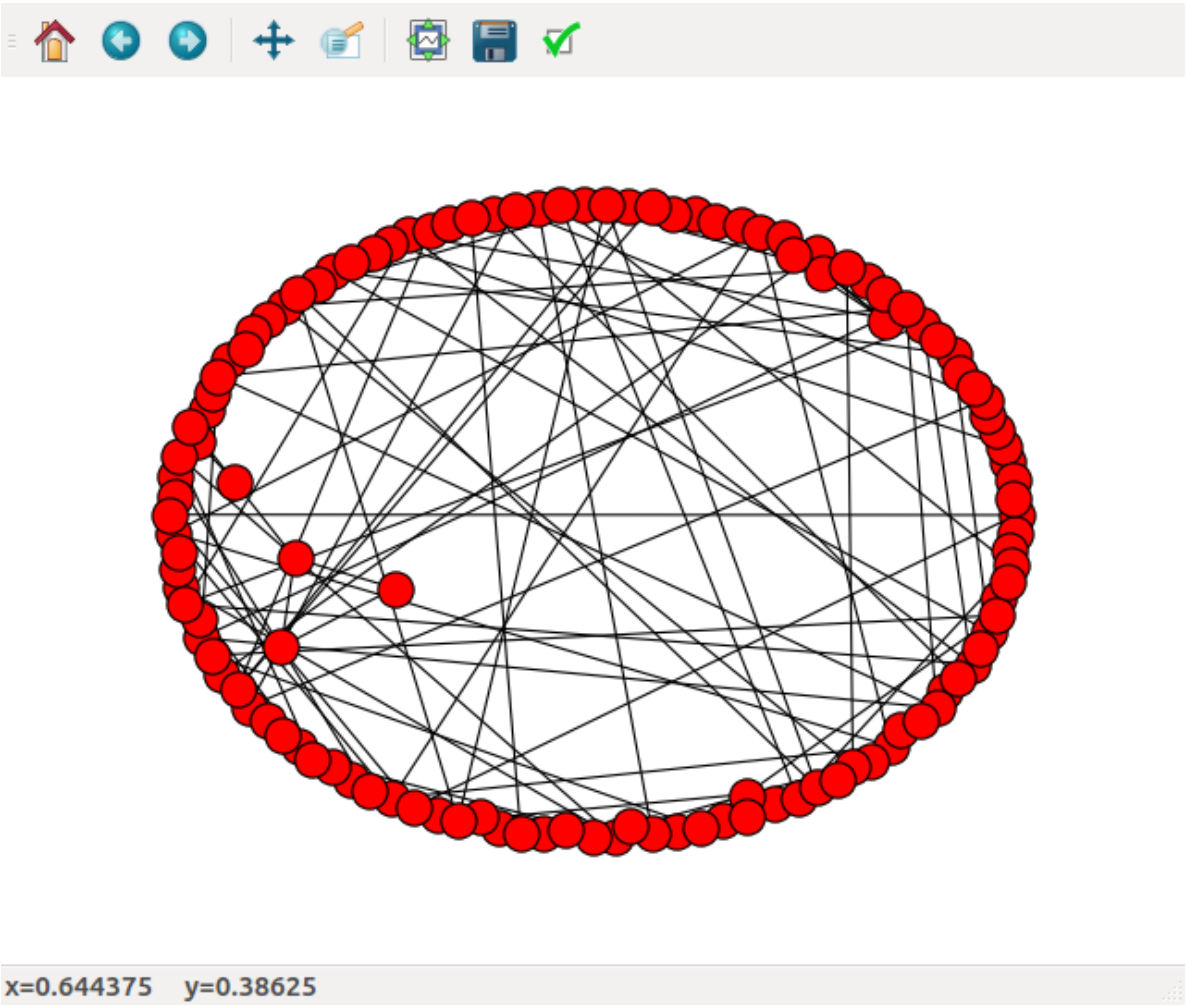
Here we will interpret the results of what we did in this homework based on the networks analysis in Python.

Conference Query

In this part we want to obtain a subgraph with all the authors who have participate at least once to a specified conference.



Here we execute a “conf” query and tell the id of the conference we are looking for.



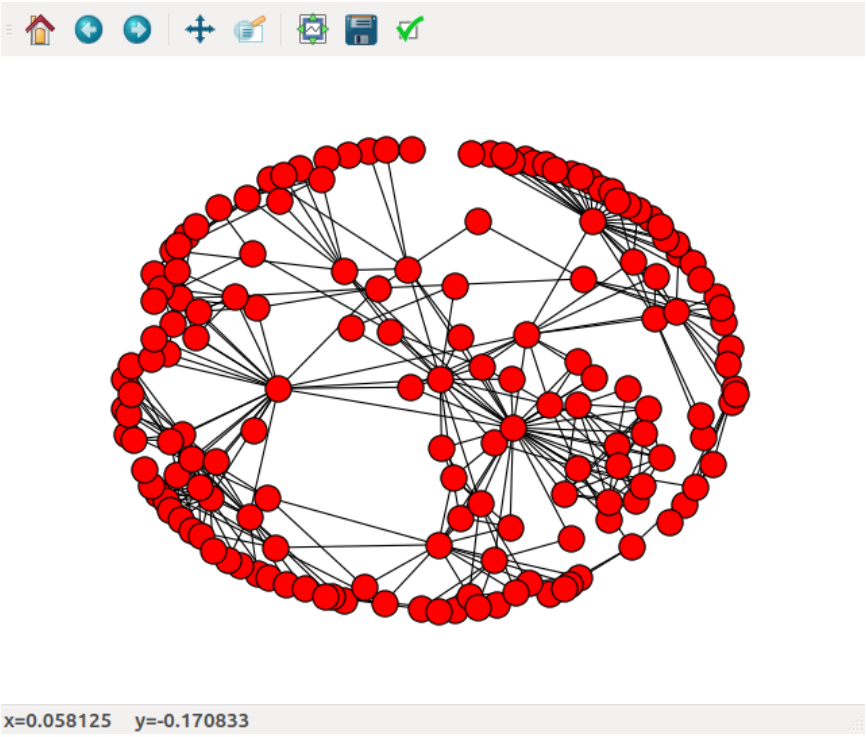
We get this graph. Unfortunately, I forgot to take in count the different measure tools for the plot part and didn’t have time to complete it at last.

Neighbor Query

Here the goal is to get a subgraph of the K-order neighbors of a specified author.

```
nicolivesey@nicolivesey-K55VD: ~/Documents/Sapienza/Data Mining/HW4
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ setxkbmap fr
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ python3 Modu
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
conf
Which conference are you looking for ?3052
Did you write the id or the name ? (id or name)id
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ python3 Modu
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
neighbor
Which author are you looking for ? (the center of your graph)aris anagnostopoulo
s
How deep should I search ? (number of edges)3
```

We ask for a “neighbour” query.



And we get this graph.

Aris Query

I tried to build a software able to find the shortest path between a given author and Aris Anagnostopoulos.

```
nicolivesey@nicolivesey-K55VD: ~/Documents/Sapienza/Data Mining/HW4
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ python3 Modu
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
neighbor
Which author are you looking for ? (the center of your graph)aris anagnostopoulo
s
How deep should I search ? (number of edges)3
Did you write the id or the name ? (id or name)name
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ python3 Modu
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
aris
Which author are you looking for ? (connected to Aris Anagnostopoulos)(you have
to give the id)20336
```

We ask for an “Aris” query.

```
nicolivesey@nicolivesey-K55VD: ~/Documents/Sapienza/Data Mining/HW4
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
aris
Which author are you looking for ? (connected to Aris Anagnostopoulos)(you have
to give the id)71582
Sorry but this author is not connected to Aris Anagnostopoulos at all
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$ python3 Modu
les.py
Hi, welcome the DBLP dataset explorer.
 What kind of query do you want to execute ?
 - Write 'conf' for a Conference Query
 - Write 'neighbor' for a Neighbor Query
 - Write 'aris' for an Aris Query
 - Write 'group' to build groups
aris
Which author are you looking for ? (connected to Aris Anagnostopoulos)(you have
to give the id)16617
The distance of their connection is 0.9473684210526316
nicolivesey@nicolivesey-K55VD:~/Documents/Sapienza/Data Mining/HW4$
```

And the we obtain the sum of all the weights of the edges in the shortest path. It makes sense since the weight is calculated upon the Jaccard distance (inverse of Jaccard similarity) which is used to calculate dissimilarity. So the bigger the distance obtained is, the more different are the two authors.

Group Building

Tahmasib did this part.