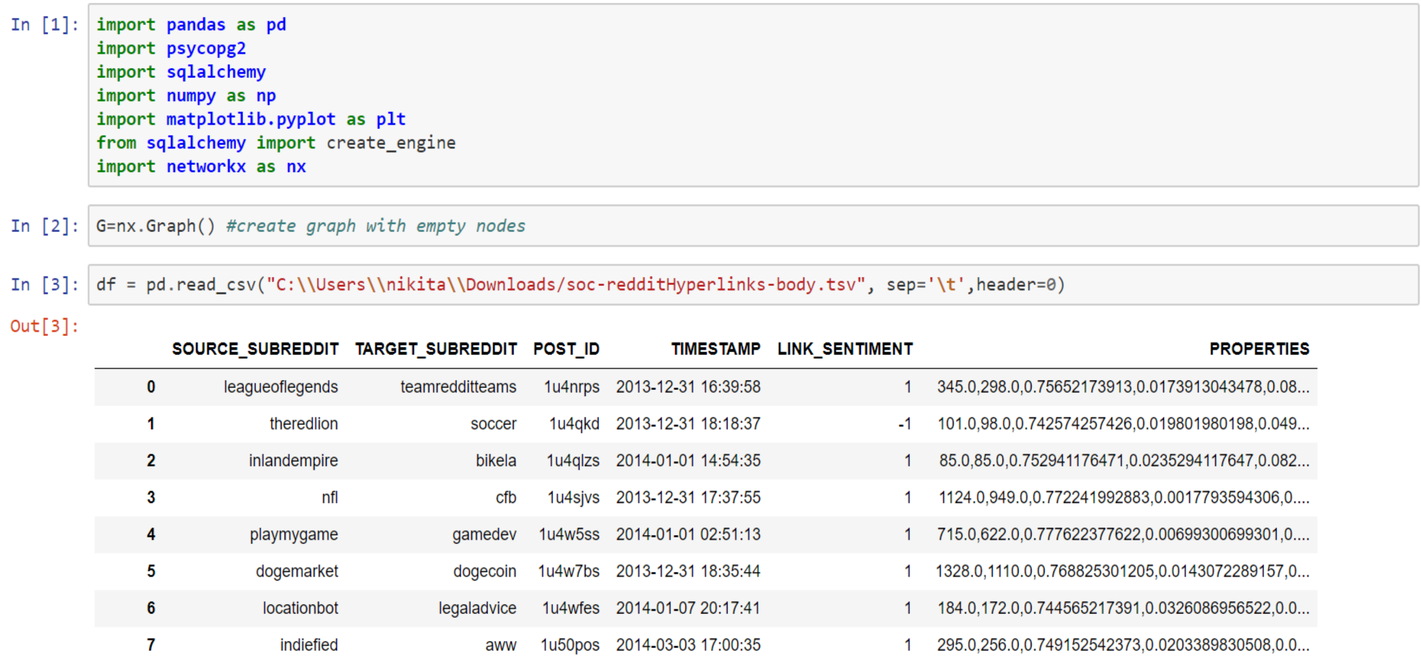
Using Networkx library:



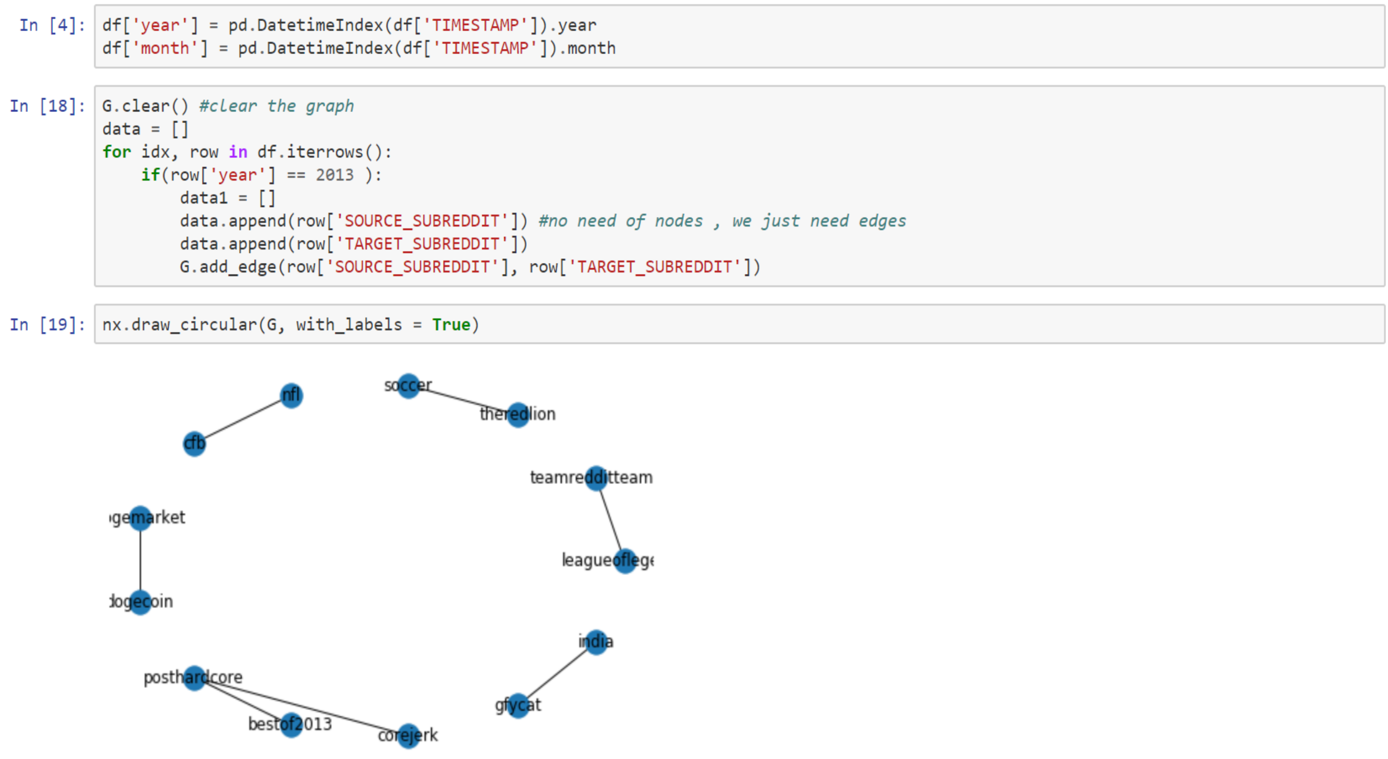
```
In [1]: import pandas as pd
        import psycopg2
        import sqlalchemy
        import numpy as np
        import matplotlib.pyplot as plt
        from sqlalchemy import create_engine
        import networkx as nx
```

```
In [2]: G=nx.Graph() #create graph with empty nodes
```

```
In [3]: df = pd.read_csv("C:\\Users\\nikita\\Downloads/soc-redditHyperlinks-body.tsv", sep='\t',header=0)
```

Out[3]:

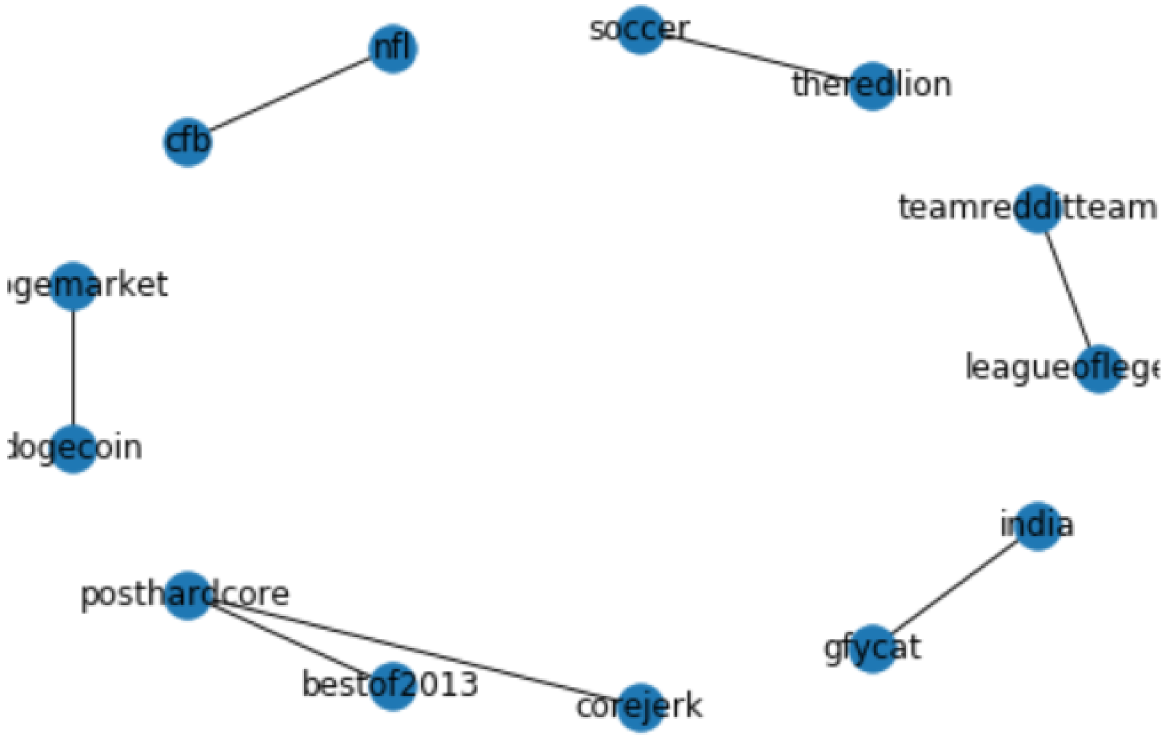
	SOURCE_SUBREDDIT	TARGET_SUBREDDIT	POST_ID	TIMESTAMP	LINK_SENTIMENT	PROPERTIES
0	leagueoflegends	teamredditteams	1u4nrps	2013-12-31 16:39:58	1	345.0,298.0,0.75652173913,0.0173913043478,0.08...
1	theredlion	soccer	1u4qkd	2013-12-31 18:18:37	-1	101.0,98.0,0.742574257426,0.019801980198,0.049...
2	inlandempire	bikela	1u4qlzs	2014-01-01 14:54:35	1	85.0,85.0,0.752941176471,0.0235294117647,0.082...
3	nfl	cfb	1u4sjvs	2013-12-31 17:37:55	1	1124.0,949.0,0.772241992883,0.0017793594306,0....
4	playmygame	gamedev	1u4w5ss	2014-01-01 02:51:13	1	715.0,622.0,0.777622377622,0.00699300699301,0....
5	dogemarket	dogecoin	1u4w7bs	2013-12-31 18:35:44	1	1328.0,1110.0,0.768825301205,0.0143072289157,0...
6	locationbot	legaladvice	1u4wfes	2014-01-07 20:17:41	1	184.0,172.0,0.744565217391,0.0326086956522,0.0...
7	indiefied	aww	1u50pos	2014-03-03 17:00:35	1	295.0,256.0,0.749152542373,0.0203389830508,0.0...



```
In [4]: df['year'] = pd.DatetimeIndex(df['TIMESTAMP']).year
        df['month'] = pd.DatetimeIndex(df['TIMESTAMP']).month
```

```
In [18]: G.clear() #clear the graph
         data = []
         for idx, row in df.iterrows():
             if(row['year'] == 2013 ):
                 data1 = []
                 data.append(row['SOURCE_SUBREDDIT']) #no need of nodes , we just need edges
                 data.append(row['TARGET_SUBREDDIT'])
                 G.add_edge(row['SOURCE_SUBREDDIT'], row['TARGET_SUBREDDIT'])
```

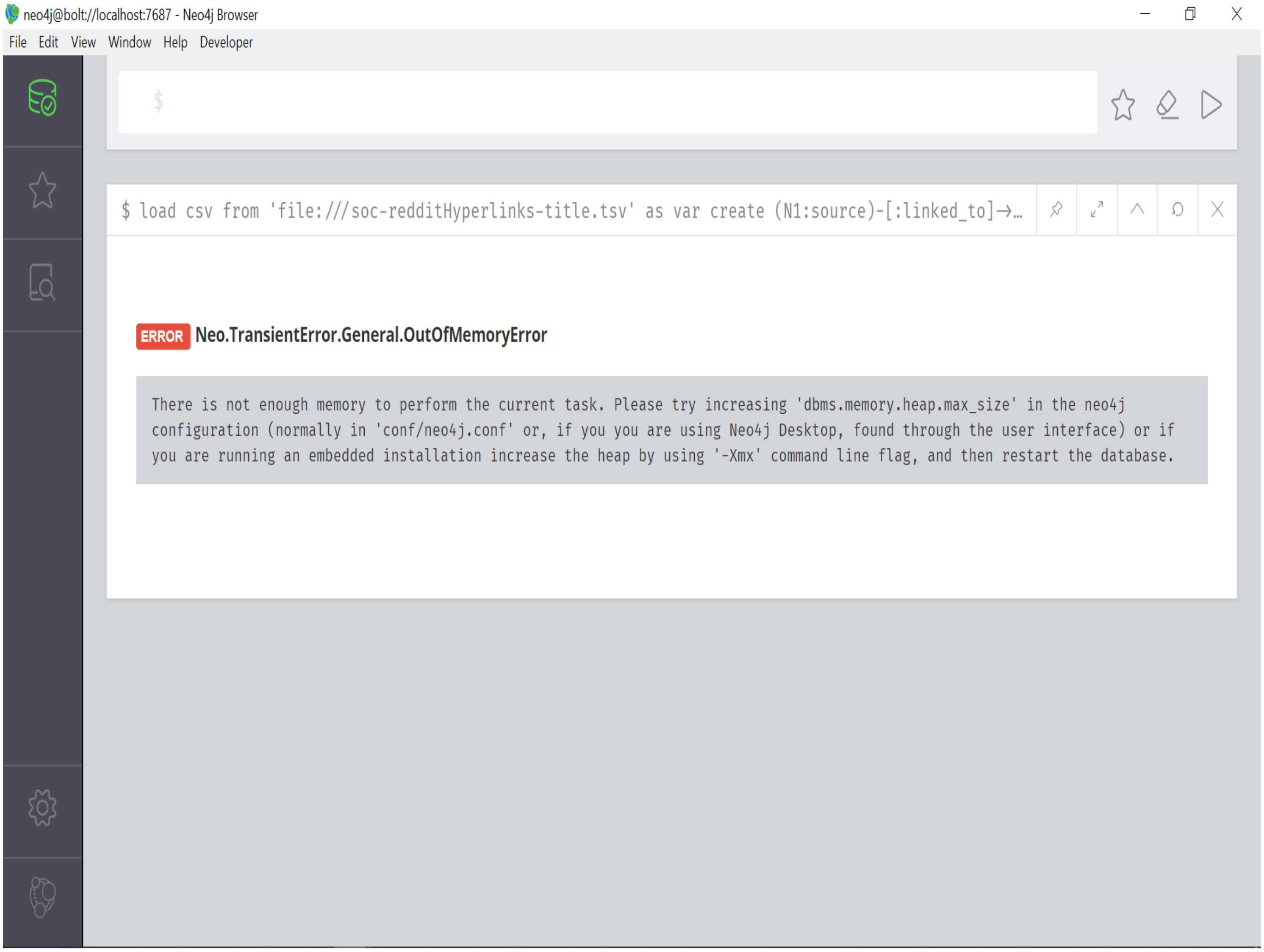
```
In [19]: nx.draw_circular(G, with_labels = True)
```


soccer
theredlion
nfl
cfb
teamredditteam
leagueoflege
gemarket
dogecoin
india
gfycat
posthardcore
bestof2013
corejerk

Using Neo4j Browser and CQL:

-Loaded tsv file of 571928 records

OutOfMemoryError while loading

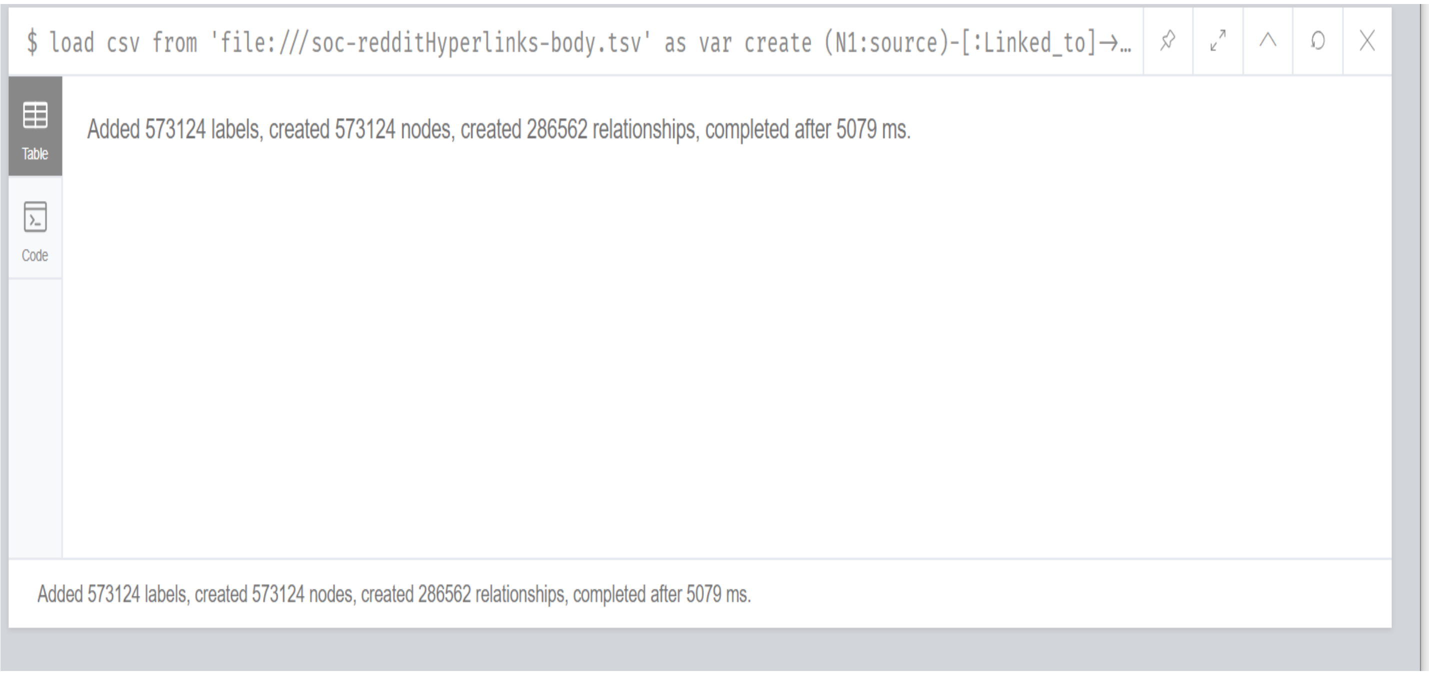

neo4j@bolt://localhost:7687 - Neo4j Browser
File Edit View Window Help Developer
$

```
$ load csv from 'file:///soc-redditHyperlinks-title.tsv' as var create (N1:source)-[:linked_to]→…
```

ERROR Neo.TransientError.General.OutOfMemoryError

```
There is not enough memory to perform the current task. Please try increasing 'dbms.memory.heap.max_size' in the neo4j
configuration (normally in 'conf/neo4j.conf' or, if you you are using Neo4j Desktop, found through the user interface) or if
you are running an embedded installation increase the heap by using '-Xmx' command line flag, and then restart the database.
```

After increasing heap size to 2Gb

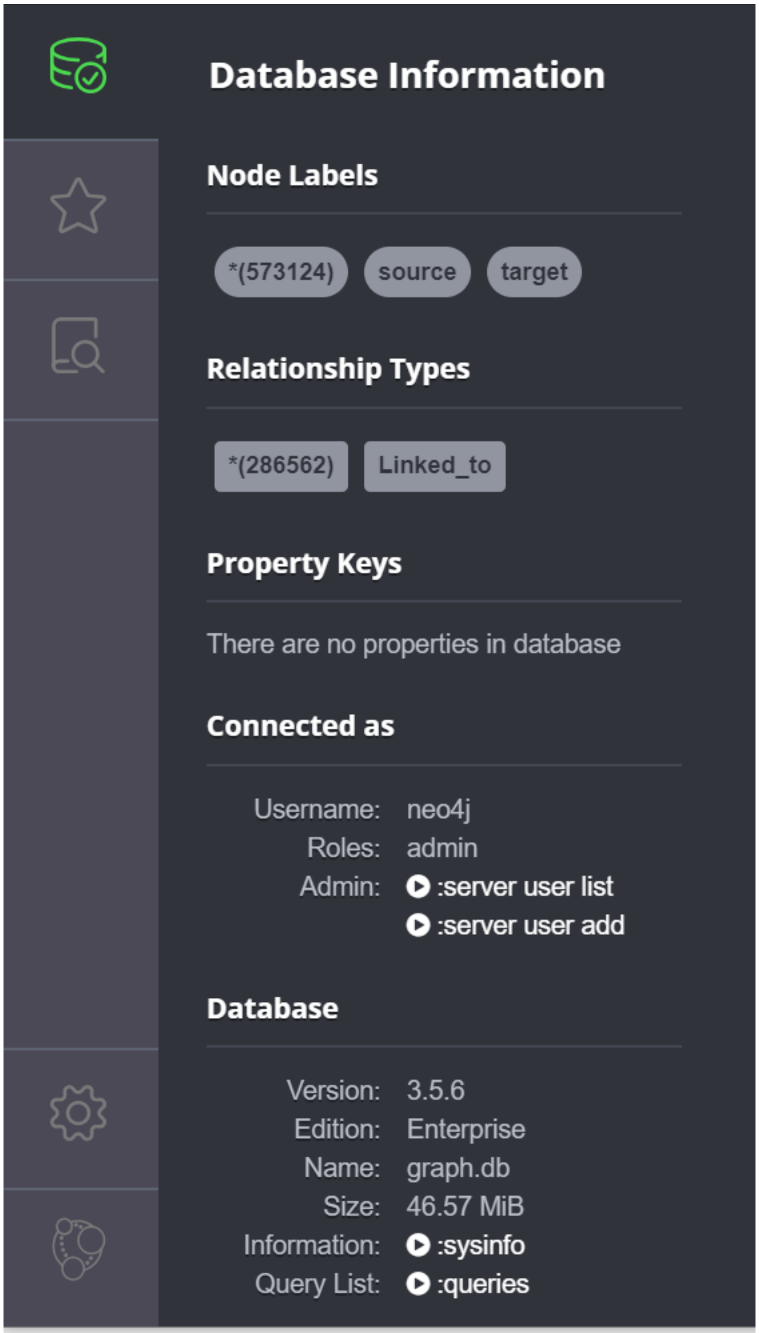


```
$ load csv from 'file:///soc-redditHyperlinks-body.tsv' as var create (N1:source)-[:Linked_to]→…
```

```
Added 573124 labels, created 573124 nodes, created 286562 relationships, completed after 5079 ms.
```

Added 573124 labels, created 573124 nodes, created 286562 relationships, completed after 5079 ms.

Details of Data after loading into Neo4j Browser



Database Information

Node Labels

*(573124) source target

Relationship Types

*(286562) Linked_to

Property Keys

There are no properties in database

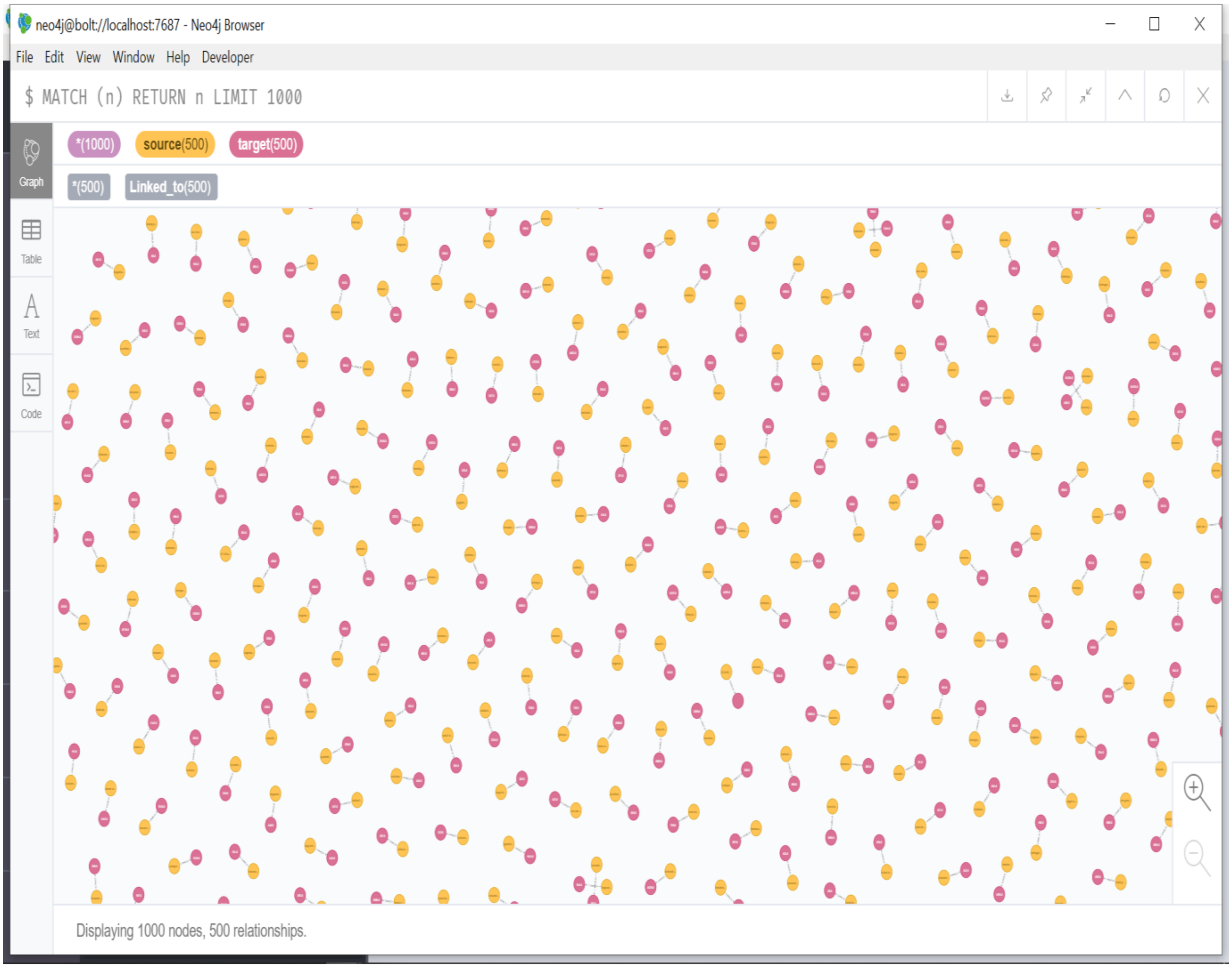
Connected as

Username: neo4j
Roles: admin
Admin: ▶ :server user list
▶ :server user add

Database

Version: 3.5.6
Edition: Enterprise
Name: graph.db
Size: 46.57 MiB
Information: ▶ :sysinfo
Query List: ▶ :queries

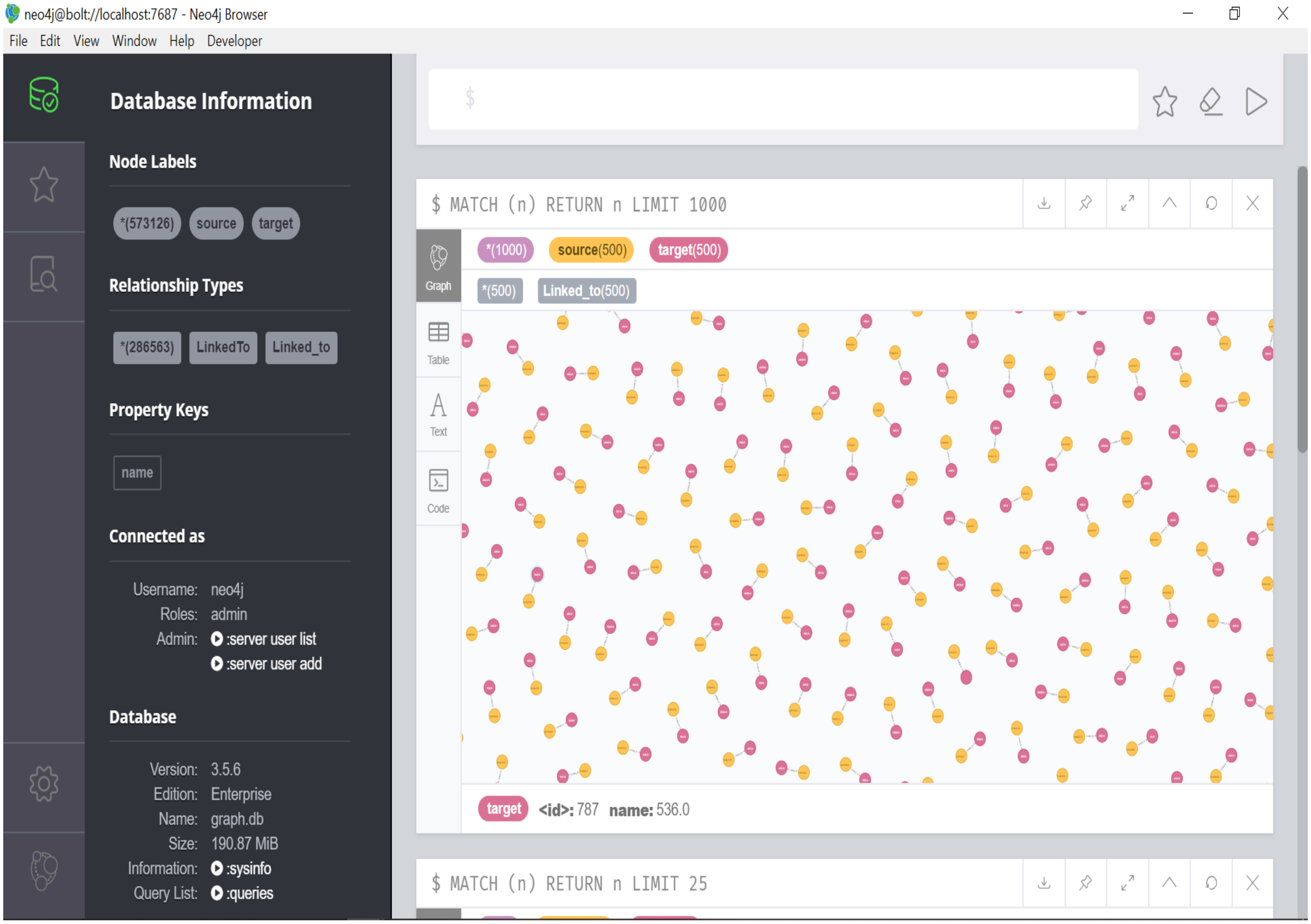
-Displaying 1000 nodes in Neo4J browser:



neo4j@bolt://localhost:7687 - Neo4j Browser
File Edit View Window Help Developer
Graph
Table
Text
Code
*(1000)
source(500)
target(500)
*(500)
Linked_to(500)

```
$ MATCH (n) RETURN n LIMIT 1000
```

Displaying 1000 nodes, 500 relationships.



Database Information

Node Labels

*(573126) source target

Relationship Types

*(286563) LinkedTo Linked_to

Property Keys

name

Connected as

Username: neo4j
Roles: admin
Admin: :server user list
:server user add

Database

Version: 3.5.6
Edition: Enterprise
Name: graph.db
Size: 190.87 MiB
Information: :sysinfo
Query List: :queries

```
$ MATCH (n) RETURN n LIMIT 1000
```

*(1000) source(500) target(500)

*(500) Linked_to(500)

target <id>: 787 name: 536.0

```
$ MATCH (n) RETURN n LIMIT 25
```