

CS406 - SebastianNetwork

March 31, 2020

```
[2]: # reading the tweets

text = '@thomasd|Today is a great day @tylerb @sebastianm'

# list_of_interactions = []

comps = text.split('|')

# print('Person 1', comps[0])
# print('Comp Actual Tweet: ', comps[1])

list_of_interactions = []
words = comps[1].split()
for word in words:
    if word.startswith('@'):
        # print('Person 2', word)
        pair = (comps[0], word)
        list_of_interactions.append(pair)

for pair in list_of_interactions:
    print(pair)

# words = components[1].split()

# for word in words:
#     if word.startswith('@'):
#         list_of_interactions.append( (components[0], word) )
```

```
('@thomasd', '@tylerb')
('@thomasd', '@sebastianm')
```

```
[3]: print(list_of_interactions)
```

```
[('@thomasd', '@tylerb'), ('@thomasd', '@sebastianm')]
```

```
[4]: def read_tweets(file_name):
    list_of_interactions = []
    file_reader = open(file_name)
    for line in file_reader:
        comps = line.split('|')
        if len(comps) == 3:
            words = comps[2].split()
            for word in words:
                if word.startswith('@'):
                    pair = (comps[1], word.strip(':'))
                    list_of_interactions.append(pair)
    return list_of_interactions

[5]: interactions = read_tweets('cs406-tweet-desktop.txt')
    for pair in interactions:
        print(pair)
```

```
('@SparkyGary28', '@ColdDixonElec')
('@antichristianna', '@cfbennett2')
('@mehmoodagha', '@godfatheriv')
('@leenene_', '@JANGWONYOUNG')
('@namuhobi', '@gukksbunny')
('@Cadub1', '@TheWalkingDead')
('@Cadub1', '@Eminem')
('@rlysara', '@heyhaechan')
('@FCBFussball', '@HernandezRole_')
('@Ade4liver', '@ProfAkinAbayomi')
('@Ade4liver', '@jidesanwoolu')
('@Ade4liver', '@drobafemihamzat')
('@petzmark', '@Zac_Petkanas')
('@Fudanshi_Prince', '@pmoazi')
('@maga_mjaeger_1', '@JodyBelcher7')
('@GPohly', '@macombdaily')
('@_kenyattah', '@TheUnitedLink')
('@SorrelShandy_', '@apollonia_k')
('@SorrelShandy_', '@xhaidandmatheo')
('@SorrelShandy_', '@joziebaby')
('@SorrelShandy_', '@Sherol94')
('@06111999_', '@Asyrafhoyeh')
('@waterme50981478', '@lunaestrellados')
('@PlaidHeart', '@iStan4QueenKaty')
('@stqnqvengers', '@StarkLoyola')
('@SandesNerea', '@armixer_baru')
('@Appy_Queen', '@SMSObsessed')
('@ArtisticParley', '@MistyLady4')
('@ArtisticParley', '@MistyLady4')
('@ArtisticParley', '@artfinder')
```

```

('@dinnerwithndg', '@OxfordSBS')
('@bearlee_there', '@JenJDanna')
('@emmanmcbell192', '@Jaybafaunt')
('@ciaaara_j', '@Iustyfeels')
('@Omega_Ode', '@bitchim999')
('@jaehyunpchy', '@LeeJeno_IDN')
('@KJFurzer', '@h4nn4hbird7')
('@KJFurzer', '@LilBreezyVert')
('@lovekiksy', '@Unkle_K')
('@kerrycashion', '@KamVTV')
('@Milagro20688462', '@7_taelysian')
('@Milagro20688462', '@BTSPublicity')
('@Milagro20688462', '@JEONSMOON')
('@Milagro20688462', '@BTS_twt')
('@esrabootilly', '@lmgriffjohnson')
('@AphroditexRose', '@Sajjadroblox')
('@Sargaent', '@Kharrii1')
('@sgrmidolov', '@iamproffi')
('@sgrmidolov', '@ginachron')
('@estoemarigona', '@sl2trippy')
('@JK114189279', '@deirika')
('@Mansi84847190', '@adventuresofzo')
('@Mansi84847190', '@RajBaddhan')
('@SOMUCHFANGIRLIG', '@JAMJAMPICS')
('@JiShNu2525', '@MoviePlanet8')
('@c_fardeen', '@_BriaDanielle')
('@c_fardeen', '@skinny_que')
('@soyladelatango', '@miltonroses')
('@KIHUNRIGHTS', '@MIDDLEOFTHE1TE')
('@A__Calvo', '@fishingforleave')
('@joshkenzie', '@vintagemozart')
('@joshkenzie', '@')
('@MicheytheMouse', '@we_yoh')
('@ChaaNNNNN_Byun', '@Koreaboo')
('@SomeUglyNigga', '@FrqntFlyerKhaya')
('@SomeUglyNigga', '@Shlimhardaway')
('@yasmin69', '@Bravo_Zyi')
('@byesrry', '@ctrlvlogs')
('@byesrry', '@2020predicts')

```

```
[6]: import networkx as nx
```

```
[7]: covid_graph = nx.Graph()
```

```
[8]: print(nx.info(covid_graph))
```

Name:

Type: Graph

```
Number of nodes: 0
Number of edges: 0
```

```
[9]: covid_graph.add_edges_from(interactions)
```

```
[10]: print(nx.info(covid_graph))
```

```
Name:
Type: Graph
Number of nodes: 119
Number of edges: 68
Average degree: 1.1429
```

```
[38]: nx.draw(covid_graph, with_labels = True)
```



```
[39]: my_community = covid_graph.nodes()
      # print(my_community)
      length_of_two = 0
      length_of_three = 0
      length_of_four = 0
      length_of_five = 0
      length_of_six = 0
```

```

length_of_seven = 0
for node_s in my_community:
    for node_t in my_community:
        if node_s != node_t:
            if nx.has_path(covid_graph, node_s, node_t) :
                shortest_path = nx.shortest_path(covid_graph, node_s, node_t)
                print(shortest_path, 'has a length of = >', len(shortest_path))
                if len(shortest_path) == 2:
                    length_of_two+=1
                if len(shortest_path) == 3:
                    length_of_three+=1
                if len(shortest_path) == 4:
                    length_of_four+=1
                if len(shortest_path) == 5:
                    length_of_five+=1
                if len(shortest_path) == 6:
                    length_of_six+=1
                if len(shortest_path) == 7:
                    length_of_seven+=1

```

```

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['@ProfAkinAbayomi', '@Ade4liver'] has a length of = > 2
['@ProfAkinAbayomi', '@Ade4liver', '@jidesanwoolu'] has a length of = > 3
['@ProfAkinAbayomi', '@Ade4liver', '@drobafemihamzat'] has a length of = > 3
['@jidesanwoolu', '@Ade4liver'] has a length of = > 2

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['@jidesanwoolu', '@Ade4liver', '@ProfAkinAbayomi'] has a length of = > 3
 ['@jidesanwoolu', '@Ade4liver', '@drobafemihamzat'] has a length of = > 3
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```

['@SomeUglyNigga', '@Shlimhardaway'] has a length of = > 2
['@FrqntFlyerKhaya', '@SomeUglyNigga'] has a length of = > 2
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```

```

[40]: # create a histogram
      # how many nodes of length 2
      # how many nodes of length 3
      # how many nodes of length 4
      # etc....
      print("Length 2: ", length_of_two)
      print("Length 3: ", length_of_three)
      print("Length 4: ", length_of_four)
      print("Length 5: ", length_of_five)
      print("Length 6: ", length_of_six)
      print("Length 7: ", length_of_seven)

```

```

Length 2: 136
Length 3: 48
Length 4: 0
Length 5: 0
Length 6: 0
Length 7: 0

```

```

[70]: # for a duration of three days please do the same work about
      # generate average lenght statistics
      # compare the result for each run

```

```

[ ]:

```