GoT_Network

April 12, 2023

Network Visualization in Python

[ ]:
```
import pandas as pd
import matplotlib.pyplot as plt
```

Read Data File

[ ]:
```
# load data
df = pd.read_csv("got_book_1.csv")
```

[ ]:
```
df.shape
```

[ ]:
```
df.head(5)
```

[ ]:
```
df.describe()
```

[ ]:
```
df.info()
```

[ ]:
```
# pick only important weights (hard threshold)
df = df.loc[df['weight']> 30, :]
```

[ ]:
```
df.shape
```

[ ]:
```
df.describe()
```

1. NetworkX

[ ]:
```
pip install --user -U networkx
```

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

[ ]:
```
# load pandas df as networkx graph
G = nx.from_pandas_edgelist(
    df,
    source='Source',
    target='Target',
    edge_attr='weight'
)
```

```
print("No of unique characters:", len(G.nodes))
print("No of connections:", len(G.edges))
```

[ ]:
```
# all graph options
graphs_viz_options = [nx.draw,
                      nx.draw_networkx,
                      nx.draw_circular,
                      nx.draw_kamada_kawai,
                      nx.draw_random,
                      nx.draw_shell,
                      nx.draw_spring]

# plot graph option
selected_graph_option = 0

# plot
plt.figure(figsize=(8,6), dpi=100)
graphs_viz_options[selected_graph_option](G)
```

2. PyVis

[ ]:
```
pip install --user -U pyvis
```

[ ]:
```
# import pyvis
from pyvis.network import Network
# create vis network
net = Network(
    notebook = True,
    width=1000,
    height=600,
    cdn_resources = 'in_line'
)
# load the networkx graph
net.from_nx(G)
# show
net.show("GoT.html")
```