20230406_Wirtschaftsinformatik_MPW2

April 6, 2023

[1]:
```
!pip install networkx
```

```
Requirement already satisfied: networkx in
/Users/h4/anaconda3/lib/python3.9/site-packages (2.7.1)
```

[2]:
```
import networkx as nx
```

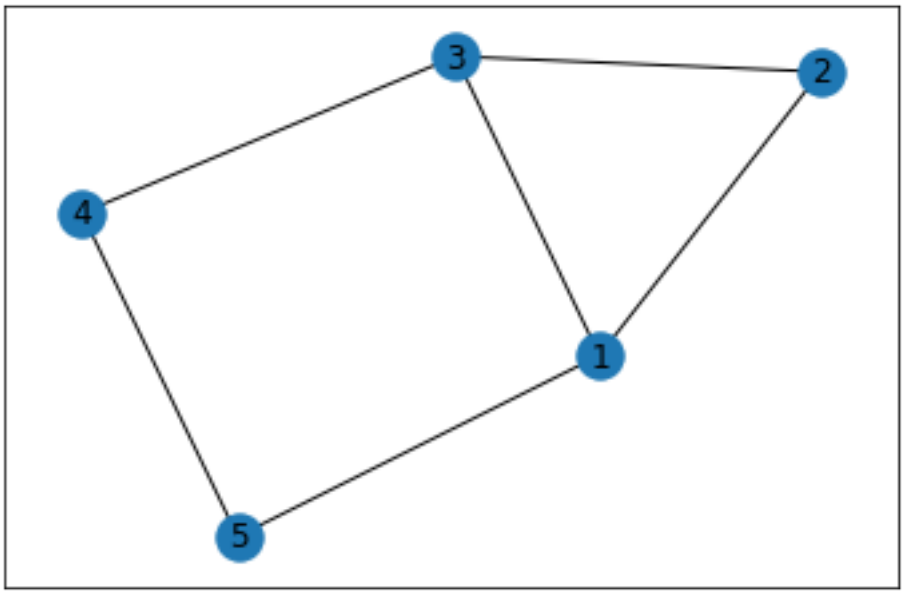
[3]:
```
import matplotlib.pyplot as plt
```

[4]:
```
# definieren wir einen Graph

G = nx.Graph()

G.add_edge(1,2)
G.add_edge(1,3)
G.add_edge(1,5)
G.add_edge(2,3)
G.add_edge(3,4)
G.add_edge(4,5)

nx.draw_networkx(G)
plt.show()
```



[5]:
```
print(nx.average_shortest_path_length(G))
# APL
```

```
1.4
```

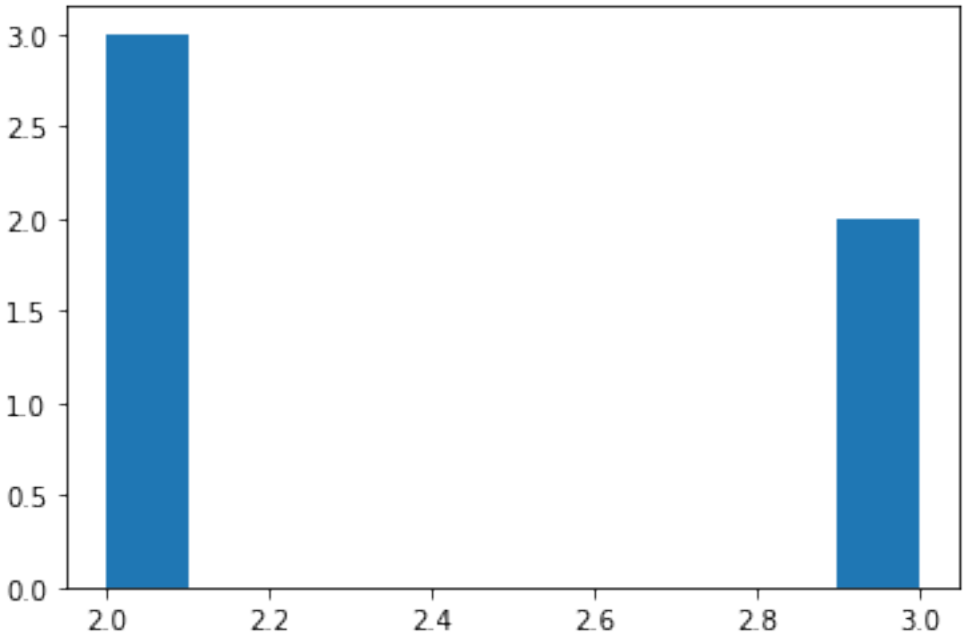
[6]:
```
print(nx.transitivity(G))
# Clustering Coefficient
```

```
0.3333333333333333
```

[10]:
```
# degree distribution (außerhalb der Prüfung)

def plot_degree_distribution(G):
    degrees = [G.degree(n) for n in G.nodes()]
    plt.hist(degrees)
    plt.show()

plot_degree_distribution(G)
```


3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.0
2.2
2.4
2.6
2.8
3.0

[ ]: