In [ ]:
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***HAZAL GUNDUZ***
```

```
***Assignment 3: Graph Visualization***
```

```
This week's assignment is to:
1. Load a graph database of your choosing from a text file or other
source. If you take a large network dataset from the web (such as from
https://snap.stanford.edu/data/), please feel free at this point to load
just a small subset of the nodes and edges.

***Data source***

https://snap.stanford.edu/data/facebook_combined.txt.gz
```

```
***Laod the libraries***
```

In [8]:
```
import networkx as nx
import pandas as pd
import matplotlib.pyplot as plt
from pylab import rcParams
```

In [32]:
```
%matplotlib inline
rcParams["figure.figsize"] = 5, 4
```

```
***Reading facebook data***
```

In [11]:
```
edu/data/facebook_combined.txt.gz", sep = " ", names = ['source','target'])
```

In [12]:
```
dt = dt[200:300]
```

In [13]:
```
dt.head()
```

Out[13]:

	source	target
200	0	201
201	0	202
202	0	203
203	0	204
204	0	205

In [14]:
```
dt.shape
```

Out[14]:
```
(100, 2)
```

2. Create basic analysis on the graph, including the graph's diameter, and at least one other metric of your choosing. You may either code the functions by hand (to build your intuition and insight), or use functions in an existing package.

Make a graph object

In [15]:
```
G = nx.from_pandas_edgelist(dt)
```

In [16]:
```
print( nx.info(G))
```

```
Name:
Type: Graph
Number of nodes: 101
Number of edges: 100
Average degree:   1.9802
```

The graph has 101 nodes, 100 edges, average degree is 1.9802

Diameter

In [17]:
```
nx.algorithms.diameter(G)
```

Out[17]: 2

The diameter of the graph is 2

3. Use a visualization tool of your choice (Neo4j, Gephi, etc.) to display information.

In [ ]:
```
%matplotlib inline
plt.rcParams['figure.figsize'] = (10, 6)
nx.draw(G, node_color='blue', with_labels=True)
```

%matplotlib inline plt.rcParams['figure.figsize'] = (10, 6) networkx.draw(G, node_color='blue', with_labels=True)

In [41]:
```
plt.savefig("facebook user network graph.png")
```

```
<Figure size 720x432 with 0 Axes>
```