DATA 620 Assignment 1

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Assignment : "hello, graph world"

We are going to show the Krackhardt kite in the assignment. We are using Networkx library to create the grapgh object and matplotlib to show the actual plot.

We loads the correct libraries needed

```
import networkx as nx  # load the networkx library to create the graph object
import matplotlib.pyplot as plt
```

We are going to create the nodes and the edges below:

```
# create the nodes
GG = nx.Graph()

nodes = ["Andre","Beverly", "Carol", "Diane", "Ed",
         "Fernando", "Garth", "Heather", "Ike", "Jane"] # this is all the name that are goijng to be th
GG.add_nodes_from(nodes)
```

```
# Adding all the connection to the nodes (edges)

edges = [
    ("Andre", "Beverly"), ("Andre", "Carol"), ("Andre", "Diane"),
    ("Beverly", "Diane"), ("Beverly", "Ed"),
    ("Carol", "Diane"), ("Carol", "Fernando"),
    ("Diane", "Ed"), ("Diane", "Fernando"), ("Diane", "Garth"),
    ("Ed", "Garth"),
    ("Fernando", "Garth"), ("Fernando", "Heather"),
    ("Garth", "Heather"),
    ("Heather", "Ike"),
    ("Ike", "Jane")
]
GG.add_edges_from(edges)
```

Before we create the plot, let check how many edges and nodes are the GG objects.

```
# number of nodes
print(f" we have the {GG.number_of_nodes()} nodes for the the Krackhardt kite plot")
```

```
##  we have the 10 nodes for the the Krackhardt kite plot
```

```
list(nx.connected_components(GG))
```

```
## [{'Fernando', 'Jane', 'Diane', 'Ike', 'Ed', 'Heather', 'Garth', 'Andre', 'Carol', 'Beverly'}]
```

```
print(f" We have {GG.number_of_edges()} edges for the the Krackhardt kite plot")
```

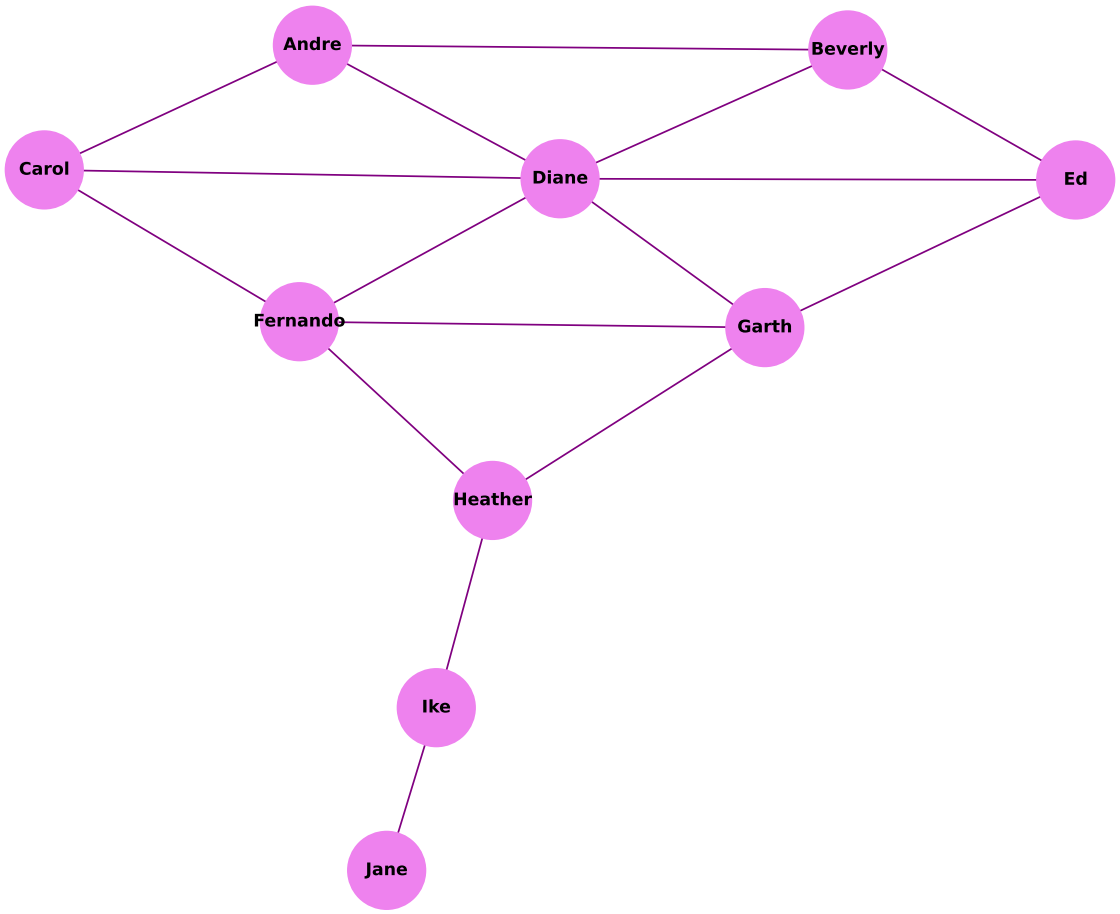
```
##  We have 16 edges for the the Krackhardt kite plot
```

```
GG.edges # This show all the connections
```

```
## EdgeView([('Andre', 'Beverly'), ('Andre', 'Carol'), ('Andre', 'Diane'), ('Beverly', 'Diane'), ('Beve
```

```
# plot the grapgh for GG
plt.figure(figsize=(10,8))
pos = nx.spring_layout(GG, seed = 42)

nx.draw(GG, pos, with_labels=True, node_color = 'violet',
        node_size= 2000, font_size = 10, font_weight = 'bold',
        edge_color='purple')
plt.title("Krackhardt Kite Grapgh", fontsize = 14)
plt.show()
```



The link is my Github