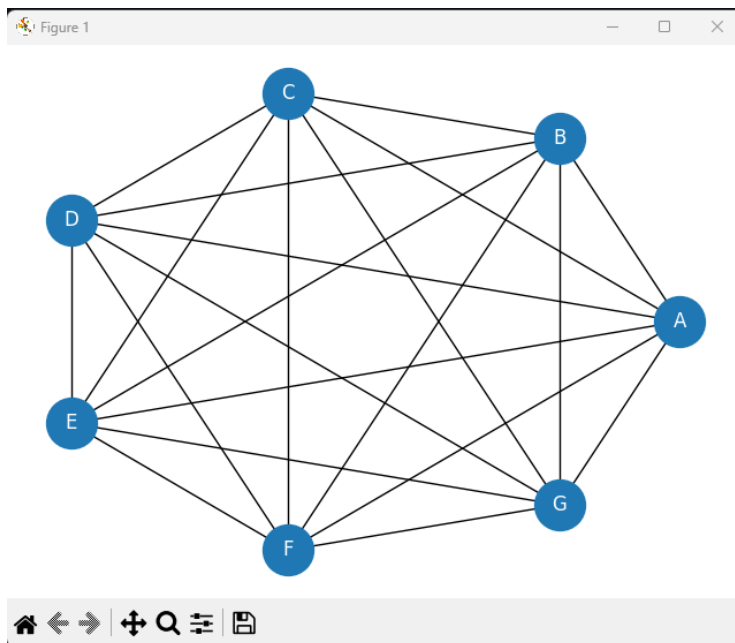


## Discrete Math Guest-Handshake Problem

### Python Code and Graph

Dyka Adlero Clifzier Holy Covenant

```
1  import networkx as nx
2  import matplotlib.pyplot as plt
3
4  def handshake_count(n):
5      return n * (n - 1) // 2
6
7  def draw_handshake_graph(n):
8      G = nx.complete_graph(n)
9      labels = {i: chr(65 + i) for i in range(n)}
10     pos = nx.circular_layout(G)
11     nx.draw(G, pos, with_labels=False, node_size=1000)
12     nx.draw_networkx_labels(G, pos, labels, font_color='white')
13     plt.title(f"Handshake Graph for {n} Guests")
14     plt.show()
15
16     guests = int(input("Enter number of guests: "))
17     print(f"Handshakes = {handshake_count(guests)}")
18
19     draw_handshake_graph(guests)
20
```



```
graph
    in range(n)}
    else, node_size=1000)
    s, labels, font_color='white')
    for {n} Guests")

    of guests: ")
    unt(guests))")
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** PORTS

```
PS C:\Users\user\Desktop\4. DM - Benfano> & C:\Users\user\AppData\Local\Programs\Python\Python313\python.exe
guests = int(input("Enter number of guests: "))
~~~~~
KeyboardInterrupt
❖ PS C:\Users\user\Desktop\4. DM - Benfano> & C:\Users\user\AppData\Local\Programs\Python\Python313\python.exe
Enter number of guests: 7
Handshakes = 21
```

> OUTLINE  
> TIMELINE

```
import networkx as nx
```

```
import matplotlib.pyplot as plt
```

```
def handshake_count(n):
```

```
    return n * (n - 1) // 2
```

```
def draw_handshake_graph(n):
```

```
    G = nx.complete_graph(n)
```

```
    labels = {i: chr(65 + i) for i in range(n)}
```

```
    pos = nx.circular_layout(G)
```

```
    nx.draw(G, pos, with_labels=False, node_size=2000)
```

```
    nx.draw_networkx_labels(G, pos, labels, font_color='white')
```

```
    plt.title(f"Handshake Graph for {n} Guests")
```

```
    plt.show()
```

```
guests = int(input("Enter number of guests: "))
```

```
print(f"Handshakes = {handshake_count(guests)}")
```

```
draw_handshake_graph(guests)
```