Discrete Math Guest-Handshake Problem

Python Code and Graph

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```python
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=1000)
    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)

```

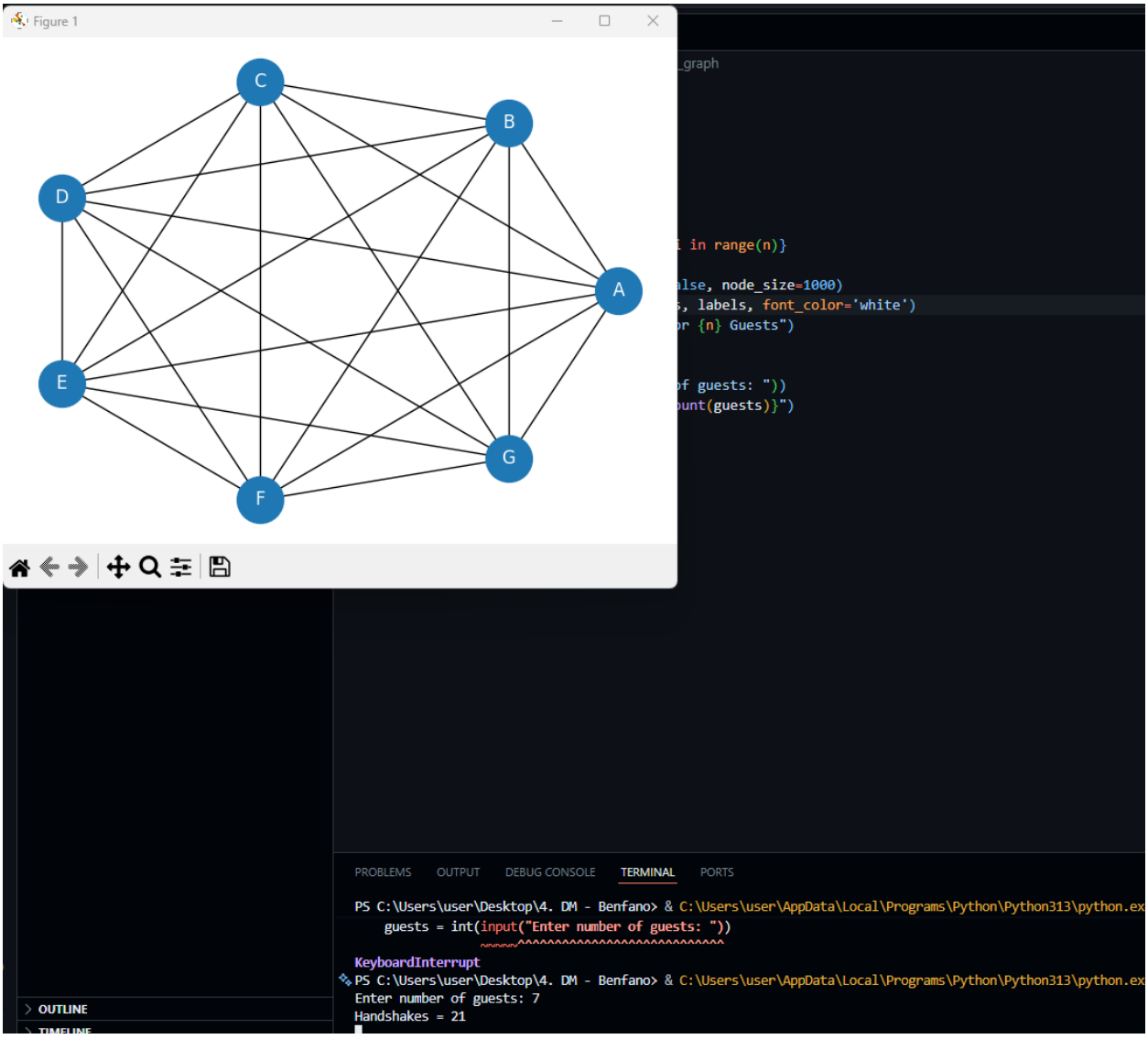
Figure 1
C
B
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G
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in range(n)}
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, labels, font_color='white')
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f guests: "))
unt(guests)}")
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
PS C:\Users\user\Desktop\4. DM - Benfano> & C:\Users\user\AppData\Local\Programs\Python\Python313\python.ex
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.ex
Enter number of guests: 7
Handshakes = 21
OUTLINE

```
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)
```