1. **Network Traffic Analysis Tool:**

```
# Add a new Log to logs:
def addLog(logs):
    srcip=input("Enter source IP: ")
    desip=input("Enter desitination IP: ")
    protocol=input("Enter protocol: ")
    ip=int(input("Enter bytes transferred: "))

    logs.append((srcip,desip,protocol,ip))

    print("Log entry added successfully!")

# Display the logs in logs:
def displayLogs(logs):
    if len(logs) == 0:
        print("No Logs have been added!")
        return

    print("Network Traffic Logs:")

    for log in logs:
        print(f"Source IP: {log[0]}, Destination IP: {log[1]}, Protocol: {log[2]}, Bytes Transferred: {log[3]}")

# Search Log:
def search(logs):
    IP = input("Enter the IP to search: ")

    print(f"Log entries involving IP {IP}")
    try:
        found=False
        for log in logs:
            if log[0] == IP or log[1]== IP:
                found=True
                print(f"Source IP: {log[0]}, Destination IP: {log[1]}, Protocol: {log[2]}, Bytes Transferred: {log[3]}")

        if not found:
            raise Exception(f"No Log with IP {IP} in the logs")
    except Exception as err:
        print(str(err))

# Filter Logs:
def filterLogs(logs):
    protocol =  input("Enter the Protocol to filter: ")
```

```
44.
45.     for Log in logs:
46.         if Log[2] == protocol:
47.             print(f"- {Log[0]}")
48.
49.# Calcualate the bytes:
50.def calcBytesTrans(logs):
51.     totalBytes=0
52.
53.     for log in logs:
54.         totalBytes+=log[3]
55.
56.     print("Total bytes transfrred: ", totalBytes)
57.
58.def main():
59.     # Shoping List:
60.     logs=[]
61.     print("Welcome to the Network Traffic Analysis Tool!")
62.
63.     print("\n1. Add Log Entries")
64.     print("\n2. Display Log Entries")
65.     print("\n3. Search for Log Entries by IP")
66.     print("\n4. Calculate Total Bytes Transferred")
67.     print("\n5. Filter Log Entries by Protocol")
68.     print("\n6. Exit")
69.
70.     while(True):
71.         choice=int(input("\nEnter your choice:"))
72.
73.         if choice==1:
74.             addLog(logs)
75.         elif choice==2:
76.             displayLogs(logs)
77.         elif choice==3:
78.             search(logs)
79.         elif choice==4:
80.             calcBytesTrans(logs)
81.         elif choice==5:
82.             filterLogs(logs)
83.         elif choice==6:
84.             exit()
85.         else:
86.             print("Invalid Choice!"
87.if __name__=="__main__":
88.     main()
```

Output:

```
Welcome to the Network Traffic Analysis Tool!

1. Add Log Entries

2. Display Log Entries

3. Search for Log Entries by IP

4. Calculate Total Bytes Transferred

5. Filter Log Entries by Protocol

6. Exit

Enter your choice:2
No Logs have been added!

Enter your choice:1
Enter source IP: 1.1.2.1
Enter desitination IP: 1.2.3.1
Enter protocol: TCP
Enter bytes transferred: 428374
Log entry added successfully!

Enter your choice:1
Enter source IP: 1.2.31.1
Enter desitination IP: 3.2.41.12
Enter protocol: UDP
Enter bytes transferred: 34324
Log entry added successfully!

Enter your choice:1
Enter source IP: 1.34.32.123
Enter desitination IP: 12
Enter protocol: UDP
Enter bytes transferred: 423423
Log entry added successfully!

Enter your choice:2
Network Traffic Logs:
Source IP: 1.1.2.1, Destination IP: 1.2.3.1, Protocol: TCP, Bytes Transferred: 428374
Source IP: 1.2.31.1, Destination IP: 3.2.41.12, Protocol: UDP, Bytes Transferred: 34324
Source IP: 1.34.32.123, Destination IP: 12, Protocol: UDP, Bytes Transferred: 423423
```

```
Enter your choice:3
Enter the IP to search: 1.2.31.1
Log entries involving IP 1.2.31.1
Source IP: 1.2.31.1, Destination IP: 3.2.41.12, Protocol: UDP, Bytes Transferred: 34324

Enter your choice:3
Enter the IP to search: 1.2.3.1
Log entries involving IP 1.2.3.1
Source IP: 1.1.2.1, Destination IP: 1.2.3.1, Protocol: TCP, Bytes Transferred: 428374

Enter your choice:3
Enter the IP to search: 1.1.1.1
Log entries involving IP 1.1.1.1
No Log with IP 1.1.1.1 in the logs

Enter your choice:4
Total bytes transfrred:  886121

Enter your choice:5
Enter the Protocol to filter: TCP
- 1.1.2.1

Enter your choice:5
Enter the Protocol to filter: UDP
- 1.2.31.1
- 1.34.32.123

Enter your choice:6
```

2. **Event Attendance Tracking System**

```python
# Add a new Attendee to attendees:
def addAttendee(attendees):
    name = input("Enter the attendee name: ")

    attendees.add(name)

    print("Attendee entry added successfully!")

# Display the attendees in attendees:
def displayAttendees(attendees):
    if len(attendees) == 0:
        print("No Attendees have been added!")
        return

    print("Attendee Names:")
```

```
    for attendee in attendees:
        print(attendee)

# Search Attendee:
def checkAttendee(attendees):
    name = input("Enter the name: ")

    print(f"Attendee entries involving IP {name}")
    try:
        if name in attendees:
            print(f"{name} is present")
        else:
            raise Exception(f"No Attendee with name {name} in the attendees")
    except Exception as err:
        print(str(err))

def removeAttendee(attendees):
    name = input("Enter the name to be removed: ")

    if name in attendees:
        attendees.remove(name)
    else:
        print(f"No Attendee with name {name} in the attendees")

# Calcualate the bytes:
def calcStats(attendees):
    print(f"Total unique attendees: {len(attendees)}")


def main():
    # Shoping List:
    attendees=set()
    print("Welcome to the Event Attendance Tracking System!")

    print("\n1. Record Attendees")
    print("\n2. Display Attendees")
    print("\n3. Check Attendance")
    print("\n4. Remove Attendee")
    print("\n5. Calculate Attendee Statistics")
    print("\n6. Exit")

    while(True):
        choice=int(input("\nEnter your choice:"))

        if choice==1:
```

```
            addAttendee(attendees)
        elif choice==2:
            displayAttendees(attendees)
        elif choice==3:
            checkAttendee(attendees)
        elif choice==4:
            removeAttendee(attendees)
        elif choice==5:
            calcStats(attendees)
        elif choice==6:
            exit()
        else:
            print("Invalid Choice!")

if __name__=="__main__":
    main()
```

Outputs:

```
Welcome to the Event Attendance Tracking System!

1. Record Attendees

2. Display Attendees

3. Check Attendance

4. Remove Attendee

5. Calculate Attendee Statistics

6. Exit

Enter your choice:2
No Attendees have been added!

Enter your choice:1
Enter the attendee name: Reecha T
Attendee entry added successfully!

Enter your choice:1
Enter the attendee name: Danish S
Attendee entry added successfully!

Enter your choice:1
Enter the attendee name: Kishor B
Attendee entry added successfully!

Enter your choice:2
Attendee Names:
Kishor B
Reecha T
Danish S
```

```
Enter your choice:3
Enter the name: Reecha T
Attendee entries involving IP Reecha T
Reecha T is present

Enter your choice:3
Enter the name: Kishor
Attendee entries involving IP Kishor
No Attendee with name Kishor in the attendees

Enter your choice:4
Enter the name to be removed: Reecha T

Enter your choice:2
Attendee Names:
Kishor B
Danish S

Enter your choice:5
Total unique attendees: 2

Enter your choice:5
Total unique attendees: 2

Enter your choice:6
```