

# Cyber Security Domain

INTERNSHIP PROJECT – 1

I am Rakesh Puttala,

I giving this presentation regarding for my first Internship project

## NETWORK AND PORT SCANNER:

to build a scanner by using the **python** to detect the live and non-live hosts.and

To scan the ports weather that are closed or open for a particular host through **IP Address**.

To build the scanner in the vs code or pycharm we need to install the nmap package That we can install by using the command **pip install python-nmap**.

```
C:\Users\rakes\python>pip install python-nmap
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: python-nmap in c:\users\rakes\appdata\roaming\python\python312\site-packages (0.7.1)
```

After installing of the nmap package the we can proceed to code the scanner I

have created the file name as **scanner.py** .

```
scanner.py > ...
1 import argparse
2 import nmap
3
4 def argument_parser():
5     """Allow target to specify target host and port"""
6     parser = argparse.ArgumentParser(description = "TCP port scanner. accept a hostname/IP address and list of ports
7     | | | | | | | | | | "scan. Attempts to identify the service running on a port.")
8     parser.add_argument("-o", "--host", nargs = "?", help = "Host IP address")
9     parser.add_argument("-p", "--ports", nargs="?", help = "comma-separation port list, such as '25,80,8080'")
10
11     var_args = vars(parser.parse_args()) # Convert argument name space to dictionary
12     return var_args
13
14 def nmap_scan(host_id, port_num):
15     """Use nmap utility to check host ports for status."""
16     nm_scan = nmap.PortScanner()
17     nm_scan.scan(host_id, port_num)
18     state = nm_scan[host_id]['tcp'][int(port_num)]['state'] # Indicate the type of scan and port number
19     result = ('[*] {host} tcp/{port} {state}'.format(host=host_id, port=port_num, state=state))
20
21     return result
22
23
24 if __name__ == '__main__': # Runs the actual program
25     try:
26         user_args = argument_parser()
27         host = user_args["host"]
28         ports = user_args["ports"].split(",") # Make a list from port numbers
29         for port in ports:
30             print(nmap_scan(host, port))
31     except AttributeError:
32         print("Error, please provide the command_line argument")
```

Or this tool can be access with the file link given below:

[https://drive.google.com/file/d/1984xzK4R8\\_C2qs1RXXhoFu8nAlrfCpZe/view?usp=sharing](https://drive.google.com/file/d/1984xzK4R8_C2qs1RXXhoFu8nAlrfCpZe/view?usp=sharing)

And code to access for you I have give that below to execute by copy this code

---

```
import argparse import
```

```
nmap
```

```
def argument_parser():
```

```
    """Allow target to specify target host and port"""    parser =
```

```
    argparse.ArgumentParser(description = "TCP port scanner. accept a hostname/IP
    address and list of ports to"
```

```
        "scan. Attenpts to identify the service running on a port.")
```

```
    parser.add_argument("-o", "--host", nargs = "?", help = "Host IP address")
```

```

parser.add_argument("-p", "--ports", nargs="?", help = "comma-separation port list, such
as '25,80,8080'") var_args = vars(parser.parse_args()) # Convert argument name space
to dictionary return var_args

def nmap_scan(host_id, port_num):
    """Use nmap utility to check host ports for status.""" nm_scan = nmap.PortScanner()
nm_scan.scan(host_id, port_num) state =
nm_scan[host_id]['tcp'][int(port_num)]['state'] # Indicate the type of scan and port
number result = ("[*] {host} tcp/{port} {state}".format(host=host_id, port=port_num,
state=state))

    return result

if name == 'main': # Runs the actual program try:
    user_args = argument_parser() host = user_args["host"]
ports = user_args["ports"].split(",") # Make a list from port numbers
for port in ports:
    print(nmap_scan(host, port))
except AttributeError:
    print("Error, please provide the commad_line argument")

```

---

this will detect the live and non\_live hosts and port status of the particular host by giving input as ip address.

I have tested my code on

## **1.testfire.net 2.scanme.com**

To get those hosts ip address I have used nslookup in the kali linux Commands

which I have used to get,

**nslookup testfire.net nslookup**

**scanme.com**

```
(kali㉿rakesh)-[~]
$ nslookup testfire.net
Server:          10.255.255.254
Address:         10.255.255.254#53

Non-authoritative answer:
Name:   testfire.net
Address: 65.61.137.117

(kali㉿rakesh)-[~]
$ nslookup scanme.com
Server:          10.255.255.254
Address:         10.255.255.254#53

Non-authoritative answer:
Name:   scanme.com
Address: 54.229.140.24
```

The I have used their ip address to test the tool scanner.py Command to get output of the tool is

**python scanner.py -o <ip\_address> -p <port\_numbers separating with comma>**

Then I have get that which port is open ,or which port is closed,or which port is filtered me among the list of ports which I have been searching for.

```
PS C:\Users\rakes\python> pip install python-nmap
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: python-nmap in c:\users\rakes\appdata\roaming\python\python312\site-packages (0.7.1)
PS C:\Users\rakes\python> python scanner.py -o 65.61.137.117 -p 80
[*] 65.61.137.117 tcp/80 open
PS C:\Users\rakes\python> python scanner.py -o 65.61.137.117 -p 80,443,8080
[*] 65.61.137.117 tcp/80 open
[*] 65.61.137.117 tcp/443 open
[*] 65.61.137.117 tcp/8080 filtered
PS C:\Users\rakes\python> python scanner.py -o 54.229.140.24 -p 80,443,8080
[*] 54.229.140.24 tcp/80 open
[*] 54.229.140.24 tcp/443 open
[*] 54.229.140.24 tcp/8080 filtered
PS C:\Users\rakes\python> █
```

This scanner was clearly shown that a specific port of the particular host is open or closed or filtered.

Here for the testfire.net server

The port num 80,443 are open state and port num 8080 was filtered me from the server.

**By this scanner we scan any port of the host weather it is live or non-live host.**

---

# Thank U