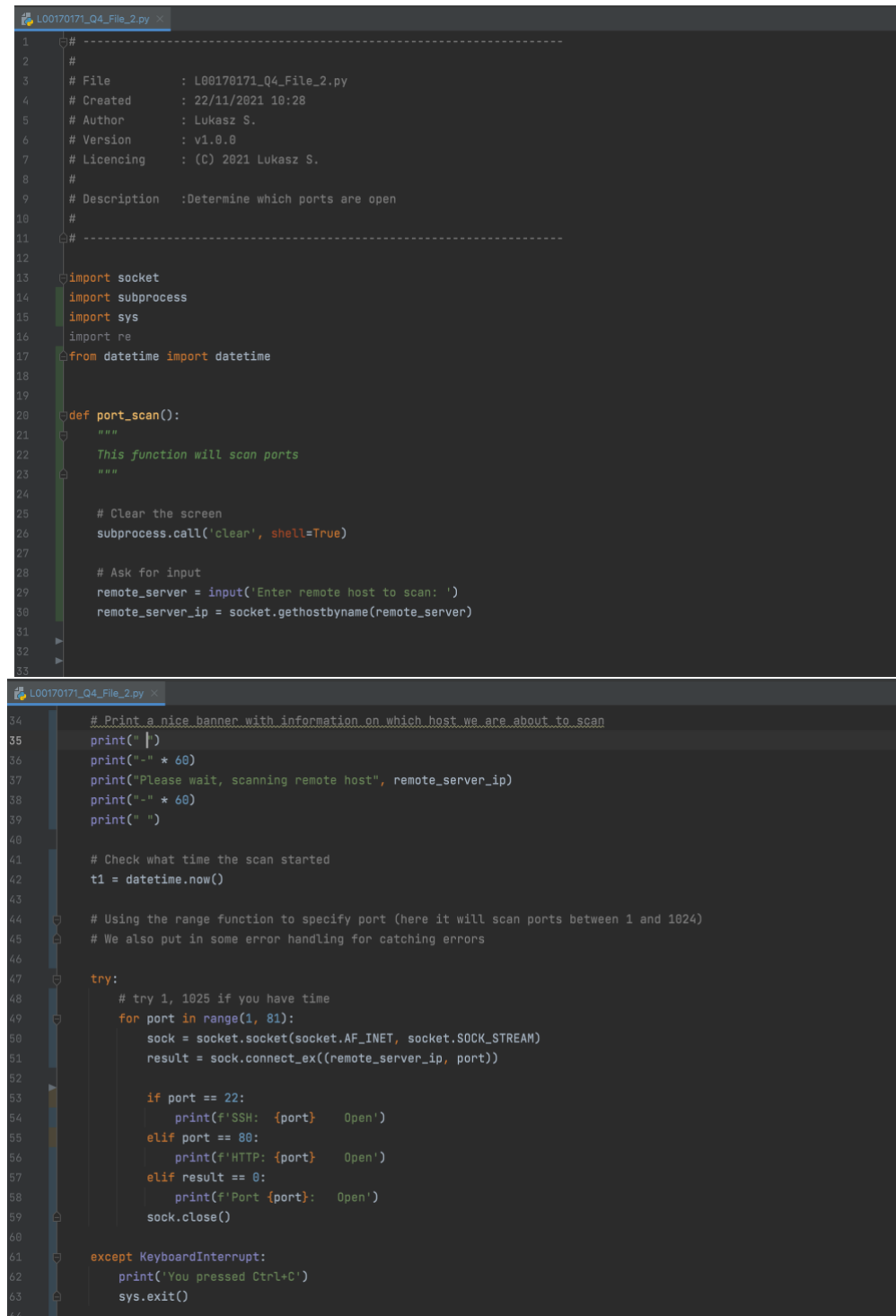


Question 4:

Write a Python script to determine which ports are open and display the information in a tidy format. Where port 22 is shown as open display the word “SSH” where port 80 is shown as open display the word “HTTP”. Take screenshots of the code running on your system. Save them to a file named L0012345_Q4_File_1 where L0012345 is replace by your own L number. Save the script as L0012345_Q4_File_2

1. Code ScreenShot



```
1 # -----
2 #
3 # File      : L00170171_Q4_File_2.py
4 # Created   : 22/11/2021 10:28
5 # Author    : Lukasz S.
6 # Version   : v1.0.0
7 # Licencing : (C) 2021 Lukasz S.
8 #
9 # Description : Determine which ports are open
10 #
11 # -----
12
13 import socket
14 import subprocess
15 import sys
16 import re
17 from datetime import datetime
18
19
20 def port_scan():
21     """
22     This function will scan ports
23     """
24
25     # Clear the screen
26     subprocess.call('clear', shell=True)
27
28     # Ask for input
29     remote_server = input('Enter remote host to scan: ')
30     remote_server_ip = socket.gethostbyname(remote_server)
31
32
33
34 # Print a nice banner with information on which host we are about to scan
35 print("\n")
36 print("-" * 60)
37 print("Please wait, scanning remote host", remote_server_ip)
38 print("-" * 60)
39 print("\n")
40
41 # Check what time the scan started
42 t1 = datetime.now()
43
44 # Using the range function to specify port (here it will scan ports between 1 and 1024)
45 # We also put in some error handling for catching errors
46
47 try:
48     # try 1, 1025 if you have time
49     for port in range(1, 81):
50         sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
51         result = sock.connect_ex((remote_server_ip, port))
52
53         if port == 22:
54             print(f'SSH: {port}    Open')
55         elif port == 80:
56             print(f'HTTP: {port}    Open')
57         elif result == 0:
58             print(f'Port {port}:    Open')
59         sock.close()
60
61 except KeyboardInterrupt:
62     print('You pressed Ctrl+C')
63     sys.exit()
64
```

```

64
65     except socket.gaierror:
66         print('Hostname could not be resolved. Exiting')
67         sys.exit()
68
69     except socket.error:
70         print("Couldn't connect to server")
71         sys.exit()
72
73     # Checking the time again
74     t2 = datetime.now()
75
76     # Calculates the difference of time, to see how long it took to run the script
77     total = t2 - t1
78
79     # Printing the information to screen
80     # Print a nice banner with information on which host we are about to scan
81     print(" ")
82     print("-" * 60)
83     print('Scanning Completed in: ', total)
84     print("-" * 60)
85
86
87 if __name__ == "__main__":
88     port_scan()
89

```

1. Code execute

```

Run: L00170171_Q4_File_2 x
Enter remote host to scan: 192.168.178.122
-----
Please wait, scanning remote host 192.168.178.122
-----
SSH:  22    Open
HTTP: 80    Open
-----
Scanning Completed in:  0:00:00.031131
-----
Process finished with exit code 0

```