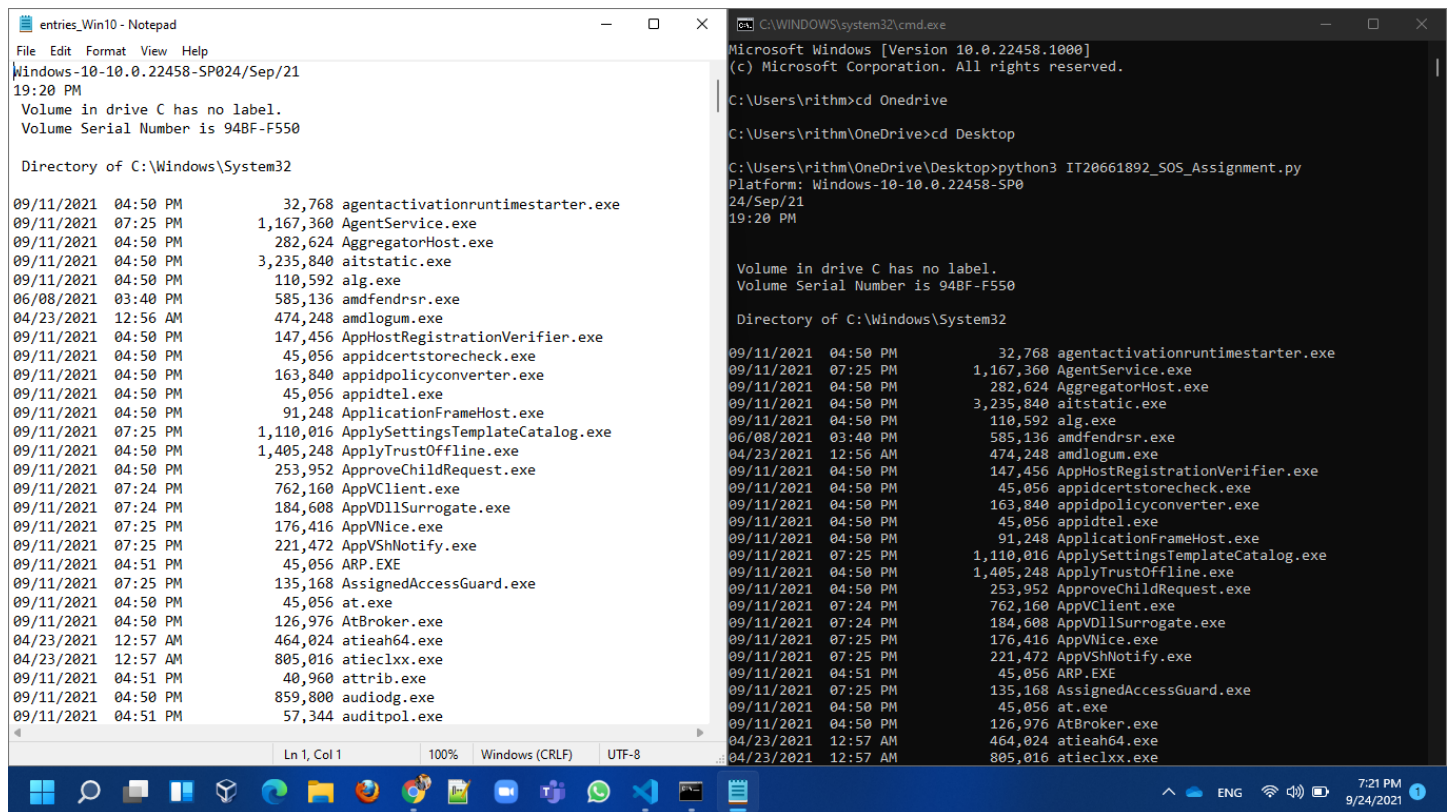


## Year 2 Semester 1 2021

### Assignment 2

### IE2032 – Secure Operating Systems



The screenshot shows a Windows 10 desktop environment. On the left, a Notepad window titled 'entries\_Win10 - Notepad' is open, displaying the directory of C:\Windows\System32. The directory listing includes various system files and their sizes. On the right, a Command Prompt window titled 'C:\WINDOWS\system32\cmd.exe' is open, showing the execution of a Python script named 'IT20661892\_SOS\_Assignment.py' located at 'C:\Users\rithm\OneDrive\Desktop'. The Command Prompt output shows the directory of C:\Windows\System32, which matches the listing in the Notepad window.

```

File Edit Format View Help
Windows-10-10.0.22458-SP024/Sep/21
19:20 PM
Volume in drive C has no label.
Volume Serial Number is 948F-F550

Directory of C:\Windows\System32

09/11/2021 04:50 PM          32,768 agentactivationruntimestarter.exe
09/11/2021 07:25 PM    1,167,360 AgentService.exe
09/11/2021 04:50 PM    282,624 AggregatorHost.exe
09/11/2021 04:50 PM    3,235,840 aitstatic.exe
09/11/2021 04:50 PM    110,592 alg.exe
06/08/2021 03:40 PM    585,136 amdfeedrsr.exe
04/23/2021 12:56 AM    474,248 amdlogum.exe
09/11/2021 04:50 PM    147,456 AppHostRegistrationVerifier.exe
09/11/2021 04:50 PM    45,056 appidcertstorecheck.exe
09/11/2021 04:50 PM    163,840 appidpolicyconverter.exe
09/11/2021 04:50 PM    45,056 appidtel.exe
09/11/2021 04:50 PM    91,248 ApplicationFrameHost.exe
09/11/2021 07:25 PM    1,110,016 ApplySettingsTemplateCatalog.exe
09/11/2021 04:50 PM    1,405,248 ApplyTrustOffline.exe
09/11/2021 04:50 PM    253,952 ApproveChildRequest.exe
09/11/2021 07:24 PM    762,160 AppVClient.exe
09/11/2021 07:24 PM    184,608 AppVDllSurrogate.exe
09/11/2021 07:25 PM    176,416 AppVNice.exe
09/11/2021 07:25 PM    221,472 AppVShNotify.exe
09/11/2021 04:51 PM    45,056 ARP.EXE
09/11/2021 07:25 PM    135,168 AssignedAccessGuard.exe
09/11/2021 04:50 PM    45,056 at.exe
09/11/2021 04:50 PM    126,976 AtBroker.exe
04/23/2021 12:57 AM    464,024 atieah64.exe
04/23/2021 12:57 AM    805,016 atieclxx.exe
09/11/2021 04:51 PM    40,960 attrib.exe
09/11/2021 04:50 PM    859,800 audiodg.exe
09/11/2021 04:51 PM    57,344 auditpol.exe

Ln 1, Col 1    100%    Windows (CRLF)    UTF-8

C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22458.1000]
(c) Microsoft Corporation. All rights reserved.

C:\Users\rithm>cd OneDrive
C:\Users\rithm\OneDrive>cd Desktop
C:\Users\rithm\OneDrive\Desktop>python3 IT20661892_SOS_Assignment.py
Platform: Windows-10-10.0.22458-SP0
24/Sep/21
19:20 PM

Volume in drive C has no label.
Volume Serial Number is 948F-F550

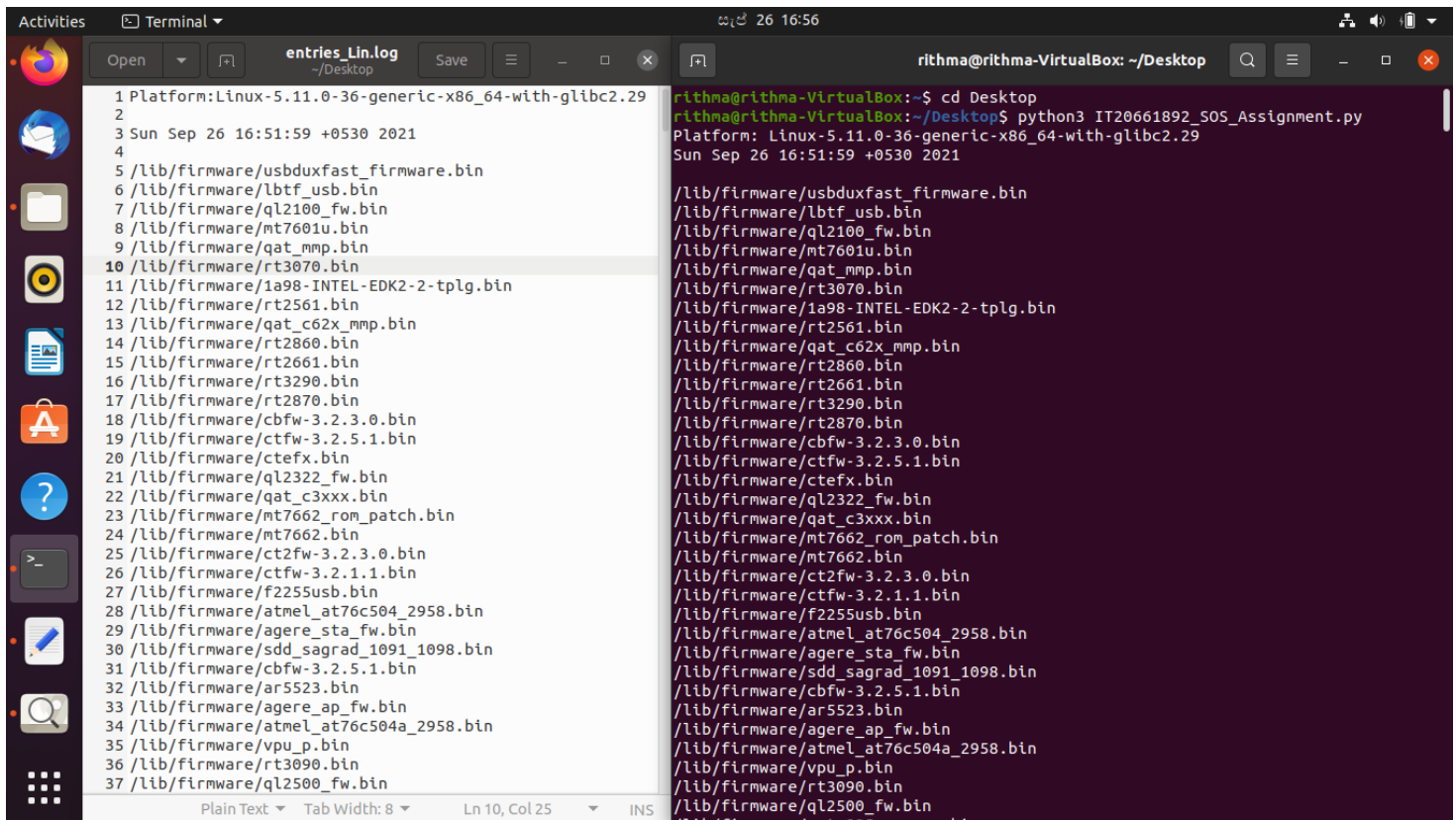
Directory of C:\Windows\System32

09/11/2021 04:50 PM          32,768 agentactivationruntimestarter.exe
09/11/2021 07:25 PM    1,167,360 AgentService.exe
09/11/2021 04:50 PM    282,624 AggregatorHost.exe
09/11/2021 04:50 PM    3,235,840 aitstatic.exe
09/11/2021 04:50 PM    110,592 alg.exe
06/08/2021 03:40 PM    585,136 amdfeedrsr.exe
04/23/2021 12:56 AM    474,248 amdlogum.exe
09/11/2021 04:50 PM    147,456 AppHostRegistrationVerifier.exe
09/11/2021 04:50 PM    45,056 appidcertstorecheck.exe
09/11/2021 04:50 PM    163,840 appidpolicyconverter.exe
09/11/2021 04:50 PM    45,056 appidtel.exe
09/11/2021 04:50 PM    91,248 ApplicationFrameHost.exe
09/11/2021 07:25 PM    1,110,016 ApplySettingsTemplateCatalog.exe
09/11/2021 04:50 PM    1,405,248 ApplyTrustOffline.exe
09/11/2021 04:50 PM    253,952 ApproveChildRequest.exe
09/11/2021 07:24 PM    762,160 AppVClient.exe
09/11/2021 07:24 PM    184,608 AppVDllSurrogate.exe
09/11/2021 07:25 PM    176,416 AppVNice.exe
09/11/2021 07:25 PM    221,472 AppVShNotify.exe
09/11/2021 04:51 PM    45,056 ARP.EXE
09/11/2021 07:25 PM    135,168 AssignedAccessGuard.exe
09/11/2021 04:50 PM    45,056 at.exe
09/11/2021 04:50 PM    126,976 AtBroker.exe
04/23/2021 12:57 AM    464,024 atieah64.exe
04/23/2021 12:57 AM    805,016 atieclxx.exe
  
```

Figure 1 Windows Environment (win 11-Devepoer mode)

## Year 2 Semester 1 2021

### Assignment 2



The screenshot shows a Linux environment (Ubuntu) with a terminal window open. The terminal displays a list of files and a command prompt. The files listed are:

```

1 Platform:Linux-5.11.0-36-generic-x86_64-with-glibc2.29
2
3 Sun Sep 26 16:51:59 +0530 2021
4
5 /lib/firmware/usbduxfast_firmware.bin
6 /lib/firmware/lbtf_usb.bin
7 /lib/firmware/ql2100_fw.bin
8 /lib/firmware/mt7601u.bin
9 /lib/firmware/qat_mmp.bin
10 /lib/firmware/rt3070.bin
11 /lib/firmware/1a98-INTEL-EDK2-2-tplg.bin
12 /lib/firmware/rt2561.bin
13 /lib/firmware/qat_c62x_mmp.bin
14 /lib/firmware/rt2860.bin
15 /lib/firmware/rt2661.bin
16 /lib/firmware/rt3290.bin
17 /lib/firmware/rt2870.bin
18 /lib/firmware/cbfw-3.2.3.0.bin
19 /lib/firmware/ctfw-3.2.5.1.bin
20 /lib/firmware/ctefx.bin
21 /lib/firmware/ql2322_fw.bin
22 /lib/firmware/qat_c3xxx.bin
23 /lib/firmware/mt7662_rom_patch.bin
24 /lib/firmware/mt7662.bin
25 /lib/firmware/ct2fw-3.2.3.0.bin
26 /lib/firmware/ctfw-3.2.1.1.bin
27 /lib/firmware/f2255usb.bin
28 /lib/firmware/atmel_at76c504_2958.bin
29 /lib/firmware/agere_sta_fw.bin
30 /lib/firmware/sdd_sagrad_1091_1098.bin
31 /lib/firmware/cbfw-3.2.5.1.bin
32 /lib/firmware/ar5523.bin
33 /lib/firmware/agere_ap_fw.bin
34 /lib/firmware/atmel_at76c504a_2958.bin
35 /lib/firmware/vpu_p.bin
36 /lib/firmware/rt3090.bin
37 /lib/firmware/ql2500_fw.bin
  
```

The terminal also shows a command prompt and the output of a command:

```

rithma@rithma-VirtualBox:~$ cd Desktop
rithma@rithma-VirtualBox:~/Desktop$ python3 IT20661892_S05_Assignment.py
Platform: Linux-5.11.0-36-generic-x86_64-with-glibc2.29
Sun Sep 26 16:51:59 +0530 2021
  
```

Figure 2 Linux Environment (Ubuntu)

**Year 2 Semester 1 2021****Assignment 2**

---

```
#IT20661892
```

```
#Importing built-in python libraries
```

```
import platform
```

```
import os
```

```
import datetime
```

```
#Define Function for windows platform to print output to Log File
```

```
def print_windows(printfile):
```

```
    output_path = "C:\\Users\\rithm\\OneDrive\\Desktop\\entries_Win10.log"
```

```
    fileprint = open(output_path, 'a')
```

```
    fileprint.write(f'{printfile}')
```

```
    fileprint.close()
```

```
#Define Function for windows platform to print output to Log File
```

```
def print_linux(printfile):
```

```
    output_path = "/home/rithma/Desktop/entries_Lin.log"
```

```
    fileprint = open(output_path, "a")
```

```
    fileprint.write(f'{printfile}')
```

```
    fileprint.close()
```

```
#Checking Condition to identify the os version is "Windows"
```

```
##'nt' means that Computer running windows
```

```
if os.name == "nt":
```

```
    #retrieve information about the platform on which the program is being currently executed
```

```
    system_info = platform.platform()
```

```
    print ('Platform:',(system_info))
```

```
    print_windows((system_info))
```

```
#Getting current System Date & Time
```

```
from datetime import datetime, timezone
```

```
datetime = datetime.now(timezone.utc).astimezone()
```

```
print(datetime.strftime("%d/%b/%y\n%H:%M %p"\n'))
```

```
print_windows(datetime.strftime("%d/%b/%y\n%H:%M %p"\n'))
```

**Year 2 Semester 1 2021****Assignment 2**

```
print()
print_windows("")
```

---

```
#Generate a list of all the '.exe' files available in 'C:\Windows\system32' directory
os.system('DIR C:\Windows\System32\*.exe')
os.system('DIR C:\Windows\System32\*.exe >>
"C:\\Users\\rithm\\OneDrive\\Desktop\\entries_Win10.log"')

pass

#Checking Condition to identify the os version is "Linux"
#posix= Linux
elif os.name == "posix":

    #retrieve information about the platform on which the program is being currently executed
    system_info = platform.platform()
    print ('Platform:',(system_info))
    print_linux("Platform:")
    print_linux(system_info)
    print_linux("\n")

    #Getting current System Date & Time
    from datetime import datetime, timezone
    SDT = datetime.now(timezone.utc).astimezone()
    print(SDT.strftime("%a %b %d %H:%M:%S %z %Y"\n'))
    print_linux("\n")
    print_linux(SDT.strftime("%a %b %d %H:%M:%S %z %Y"\n'))

    #Generate a list of all the '.bin' files in directories and subdirectories inside the 'lib' folder
    for root, dirs, files in os.walk('/lib/'):
        for file in files:
            if file.endswith('.bin'):
                print(os.path.join(root, file))
                print_linux("\n")
                print_linux(os.path.join(root, file))

    pass

#If either "Windows" or "Linux" not detected, programe will redirrect to else part execute
else:
    print("No match")
```