Question 5

Manipulate/Complete the following code to :

5.1. install curl,

5.2. Create a directory structure Labs with subfolders lab1 and lab2

5.3. From your home directory find out when files were last accessed.

ls -l --time=atime

Code :

Import paramiko, time and regular expresion

```
# ------------------------------------------------------------------
#
# File          : L00170171_Q5_File_2.py
# Created       : 23/11/2021 13:59
# Author        : Lukasz S.
# Version       : v1.0.0
# Licencing     : (C) 2021 Lukasz S.
#
# Description   : Manipulate/Complete the following code to :
#                 1. install curl,
#                 2. Create a directory structure Labs with subfolders
#                    lab1 and lab2
#                 3. From your home directory find out when files were
#                    last accessed.
#
# ------------------------------------------------------------------

import paramiko
import time
import re

# Open SSH connection to the device
```

Connection to VM using SSH

```
L00170171_Q5_File_2.py

def ssh_connection(ip):
    try:

        username = 'l00170171'
        password = 'lukasz123'

        print("Establishing a connection...")
        session = paramiko.SSHClient()
        session.set_missing_host_key_policy(paramiko.AutoAddPolicy())
        session.connect(ip.rstrip("\n"), username=username, password=password)
        connection = session.invoke_shell()
```

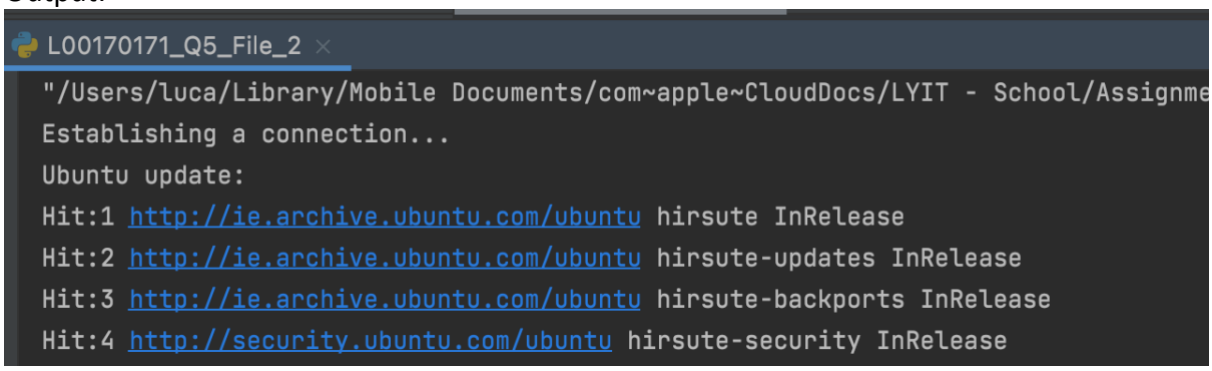
1. Install Curl but firs we need to update ubuntu

```
        # First we need to update Ubuntu box before install Curl
        stdin, stdout, stderr = session.exec_command('echo lukasz123 | sudo -S apt-get update\n')

        output = ""

        for line in stdout:
            output = output + line
        if output != "":
            print(f"Ubuntu update:\n{output}")
        else:
            print("There was no output for this command")
```

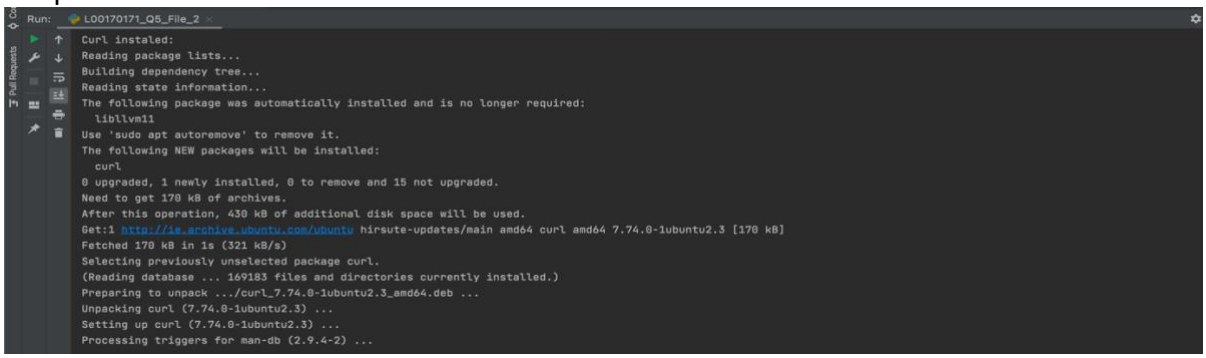
Output:



Installation Curl

```
48
49          # Installation Curly
50          stdin, stdout, stderr = session.exec_command('echo lukasz123 | sudo -S apt-get install -y curl\n')
51
52          output = ""
53
54          for line in stdout:
55              output = output + line
56          if output != "":
57              print(f"Curl installed:\n{output}")
58          else:
59              print("There was no output for this command")
60
61          # File last accessed
62          stdin, stdout, stderr = session.exec_command('ls -l --time=atime\n')
63
64          output = ""
65
66          for line in stdout:
67              output = output + line
68          if output != "":
69              print(f"File last accesed:\n{output}")
70          else:
71              print("There was no output for this command")
72
```

Output:



Curl on VM

2. Creating folder Lab and subfolders Lub1 and Lub2Output to show created folders

```python
# Creating new folders
session.exec_command("mkdir Labs\n")  # Creating folder Lab
session.exec_command("mkdir Labs/Lab1\n")  # Creating subfolder Lab1
session.exec_command("mkdir Labs/Lab2\n")  # Creating subfolder Lab2

# Showing creted folder Labs
stdin, stdout, stderr = session.exec_command('ls\n')

output = ""

for line in stdout:
    output = output + line
if output != "":
    print(f"Folder Labs:\n{output}")
else:
    print("There was no output for this command")

# Showing created subfolders
stdin, stdout, stderr = session.exec_command('ls ./Labs\n')

output = ""

for line in stdout:
    output = output + line
if output != "":
    print(f"Labs subfolders:\n{output}")
else:
    print("There was no output for this command")
```

Output to show created folder and subfolders:

```
L00170171_Q5_File_2

Folder Labs:
Desktop
Documents
Downloads
Labs
Music
Pictures
Public
snap
Templates
Videos

Labs subfolders:
Lab1
Lab2

Commands successfully executed on 192.168.178.122

Process finished with exit code 0
```

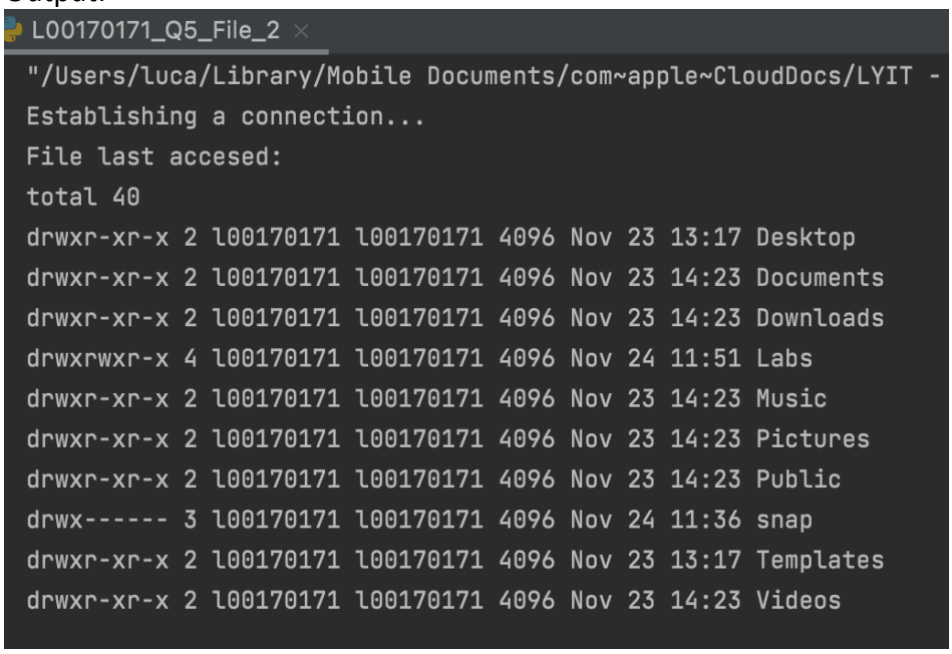
3. Showing when files were last accessed:

```python
# File last accessed
stdin, stdout, stderr = session.exec_command('ls -l --time=atime\n')

output = ""

for line in stdout:
    output = output + line
if output != "":
    print(f"File last accesed:\n{output}")
else:
    print("There was no output for this command")
```

Output:


L00170171_Q5_File_2
"/Users/luca/Library/Mobile Documents/com~apple~CloudDocs/LYIT -
Establishing a connection...
File last accesed:
total 40
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 13:17 Desktop
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Documents
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Downloads
drwxrwxr-x 4 l00170171 l00170171 4096 Nov 24 11:51 Labs
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Music
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Pictures
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Public
drwx------ 3 l00170171 l00170171 4096 Nov 24 11:36 snap
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 13:17 Templates
drwxr-xr-x 2 l00170171 l00170171 4096 Nov 23 14:23 Videos