

Execution-flow:

1. Initially, execute `server_b.py` so that PORT 8081 will be open to communicate with inbound connection.

WORKING-DIRECTORY: `workspace`
COMMAND: `\$ python server_b.py`

2. Then execute `server_a.py` specifying a PORT-ID so run at other than 8080, which will connect a socket to 5000 internally to fetch data from `directory_b`.

WORKING-DIRECTORY: `workspace`
COMMAND: `\$ python server_a.py`

3. Finally execute `client.py` which will fetch data from `server_a.py` listing all the files under `directory_a` and `directory_b` in a sorted manner.

WORKING-DIRECTORY: `workspace`
COMMAND: `\$ python client.py`

- 3.1. To lock a file from the <WORKING-DIRECTORY> we execute the <client.py> script as:

WORKING-DIRECTORY: `workspace`
COMMAND: `\$ python client.py -lock -{file_index}`

- 3.2. To unlock a locked file from the <WORKING-DIRECTORY> we execute the <client.py> script as:

WORKING-DIRECTORY: `workspace`
COMMAND: `\$ python client.py -unlock -{file_index}`

4. That's it. Your task will be completed successfully!

LIBRARIES USED FOR THIS PROJECT

To use multithreading to access multiple clients we are using <threading> std-lib
To create SERVER A socket for listening client requests we are using <socket> std-lib
To access files and directories we are using <os> std-lib

To process bytes data we are using <json> std-lib

To get list of files from a directory we are using <gt_list> function from <myutils> custom-lib

To use an observer to capture file-system events we are using <Observer> from <watchdog.observers>

To use an event-handler we are using <FileSystemEventHandler> from <watchdog.events>

To delete a file we are using <remove> function from <os> std-lib

To copy a file we are using <copyfile> function from <shutil> std-lib

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REFERENCES

WATCHDOG:

<https://xiaouwang.medium.com/create-a-watchdog-in-python-to-look-for-filesystem-changes-aaabefd14de4>

<https://www.programcreek.com/python/example/96680/watchdog.events.FileSystemEventHandler>

<https://github.com/gorakhargosh/watchdog>

<https://pythonhosted.org/watchdog/api.html#module-watchdog.events>

MD5 HASH:

<https://stackoverflow.com/questions/1131220/get-md5-hash-of-big-files-in-python>