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Contents: Three main folders;

1. Client
   1. Client.py
2. Server\_A
   1. Parent Directory Server A
   2. Server\_A.py
3. Server\_B
4. Parent Directory Server B
5. Server\_B.py

4.closeServers.py

5.utils

References:

<https://www.geeksforgeeks.org/socket-programming-python/>

<https://stackoverflow.com/questions/35407560/attributeerror-dict-object-has-no-attribute-predictors>

<https://gist.github.com/jossef/593ade757881bb7ddfe0>

<https://stackoverflow.com/questions/39632667/how-do-i-kill-the-process-currently-using-a-port-on-localhost-in-windows>

<https://www.kite.com/python/answers/how-to-kill-a-process-by-name-in-python>

<https://blog.finxter.com/python-how-to-import-modules-from-another-folder/>

<https://www.geeksforgeeks.org/socket-programming-python/>

<https://www.geeksforgeeks.org/python-os-chdir-method/>

<https://www.w3resource.com/python-exercises/python-basic-exercise-107.php>

<https://www.geeksforgeeks.org/python-ways-to-concatenate-two-lists/>

<https://www.techiedelight.com/sort-list-of-objects-python/>

<https://tutorialspoint4all.com/python-program-to-convert-bytes-to-kilobytes-megabytes-gigabytes-and-terabytes/>

<https://www.geeksforgeeks.org/python-intersection-two-lists/>

<https://stackoverflow.com/questions/5194057/better-way-to-convert-file-sizes-in-python>

Prerequisites:

* Needed Windows OS 10 as some part might/will work with only Windows OS and not UNIX.
* Needed Python 3.x Installed

How to Run this project:

1. Unzip the folder.
2. Go to Server\_A folder and run the Server\_A. py file. Open cmd/windows terminal and type the file name with .py extension (python Server\_A.py)
3. Go to Server\_B folder and run the Server\_B. py file. Open cmd/windows terminal and type the file name with .py extension (python Server\_B.py)
4. Go to Client folder and run the Client.py. Open cmd/windows terminal and type the file name with .py extension (python Client.py)
5. Try and change directory components by windows explorer.
6. Make sure to not add a file with it’s filename having space(‘ ’) in it.
7. After the data is fetched try running closeServers.py to close the server and free the resources, make sure to check the port number as per server A and B’s cmd. And edit the port numbers in the closeServer file and then try to run.

Limitations :

1. Does not allow writing the filename with spaces in it.
2. Does not allow to create a new file while the servers are running as the new file will have a default filename with spaces in it. Rather copy from a place and then modify or add it.

Elaborations on How and Why some approach is used:

1. SCP is used in subprocess because SCP is command for transferring files from server to server or from one machine to another.
2. Because both servers are running on same machine we don’t need to mention IP address in the part of scp command.
3. If it were running on different machines, we can setup keygen on both machines and do the passwordless scp which works the same way.
4. Using of SCP is not limited to single machine. But using python’s libraries to copy such as ‘shutil’ will lead to limitation of single machine.