

SS:

First I ran the file_receiver using the command

```
'python file_receiver.py ss received_file.txt',
```

where 'received_file.txt' is the name of the new file that will be created.

Next I ran the file_sender using the command

```
'python file_sender.py ss Latin-Lipsum.txt'.
```

Here I am trying to copy the contents of 'Latin-Lipsum.txt' into the 'received_file.txt'

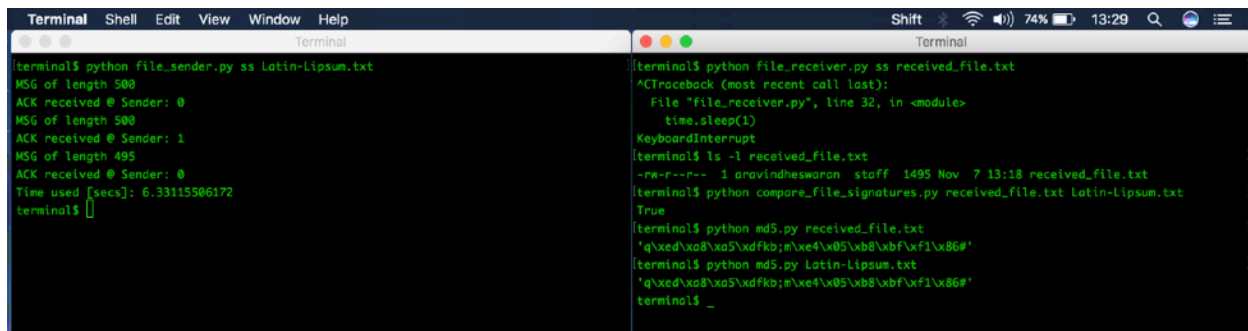
Then I shut down the file_receiver using a keyboard interrupt and did the 'ls' command. The file is created.

I wrote a custom program 'compare_file_signatures.py' to compare the signatures of the two files using the md5 hash. Next I ran the 'compare_file_signatures.py' using the command

```
'python compare_file_signatures.py Latin-Lipsum.txt received_file.txt'
```

The output returned so, I concluded that the file was exactly replicated at the receiver.

Though, there was no negative ACK in the screenshot provided, I was able to produce correct results when there was negative ACK returned or when there was a timeout.



```
Terminal Shell Edit View Window Help
Terminal
terminal$ python file_sender.py ss Latin-Lipsum.txt
MSG of length 500
ACK received @ Sender: 0
MSG of length 500
ACK received @ Sender: 1
MSG of length 495
ACK received @ Sender: 0
Time used [secs]: 6.33115506172
terminal$

Terminal
terminal$ python file_receiver.py ss received_file.txt
^CTraceback (most recent call last):
  File "file_receiver.py", line 32, in <module>
    time.sleep(1)
KeyboardInterrupt
terminal$ ls -l received_file.txt
-rw-r--r-- 1 aravindheswaran staff 1495 Nov 7 13:18 received_file.txt
terminal$ python compare_file_signatures.py received_file.txt Latin-Lipsum.txt
True
terminal$ python md5.py received_file.txt
'q\xed\xad\xas\xdfk;\xe4\x05\xb8\xbf\xf1\x86#'
terminal$ python md5.py Latin-Lipsum.txt
'q\xed\xad\xas\xdfk;\xe4\x05\xb8\xbf\xf1\x86#'
terminal$ _
```

GBN:

Since, I was not able to completely able to resolve the question myself, I had a discussion with my classmate on how to approach this problem.

| | |
|---|--|
| <pre>terminal\$ python file_receiver.py gbn received_file_gbn.txt _</pre> | <pre>terminal\$ python file_sender.py gbn Latin-Lipsum.txt []</pre> |
| <pre>terminal\$ python file_receiver.py gbn received_file_gbn.txt ACTraceback (most recent call last): File "file_receiver.py", line 32, in <module> time.sleep(1) KeyboardInterrupt terminal\$ ls -al received_file_gbn.txt -rw-r--r-- 1 aravindheshwaran staff 0 Nov 28 02:46 received_file_gbn.txt terminal\$ cat received_file_gbn.txt terminal\$</pre> | <pre>terminal\$ python file_sender.py gbn Latin-Lipsum.txt MSG of length 500 ACTime used [secs]: 8.87446594238 Traceback (most recent call last): File "file_sender.py", line 28, in <module> while not transport_layer.send(msg): File "/Users/aravindheshwaran/Documents/NEU_Coursework/Fall2016/FCN/Assignmen ts/Assignment3/Programming/Programs/gbn.py", line 39, in send while not self.timer.wait(timeout = 1.5): File "/Library/Frameworks/Python.framework/Versions/2.7/lib/python2.7/thread ing.py", line 621, in wait self._cond.wait(timeout) File "/Library/Frameworks/Python.framework/Versions/2.7/lib/python2.7/thread ing.py", line 359, in wait _sleep(delay) KeyboardInterrupt terminal\$</pre> |

I first started the file_receiver using the command

`'python file_receiver.py gbn received_file_gbn.txt'`,

where `'received_file_gbn.txt'` will be the new file created.

Similarly, I started the file_sender using the command

`'python file_sender.py gbn Latin-Lipsum.txt'`

A part of the text (the first 500 bytes of data) was transferred from the sender to the receiver. I tried to implement as it was given in the question but for some reason, it would not fully execute. The program just gets stuck after sending the initial 500 bytes of data. I had to give the keyboard interrupt command (ctrl - c) to come out of execution.