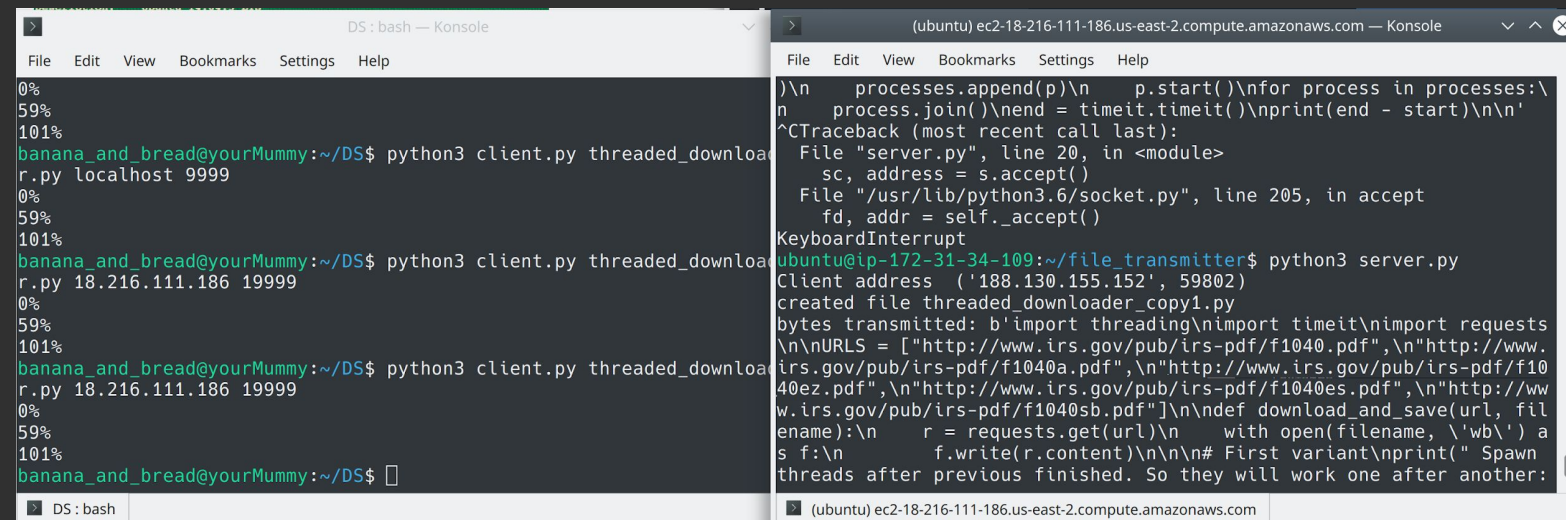


# Lab 6: Message-oriented Communication

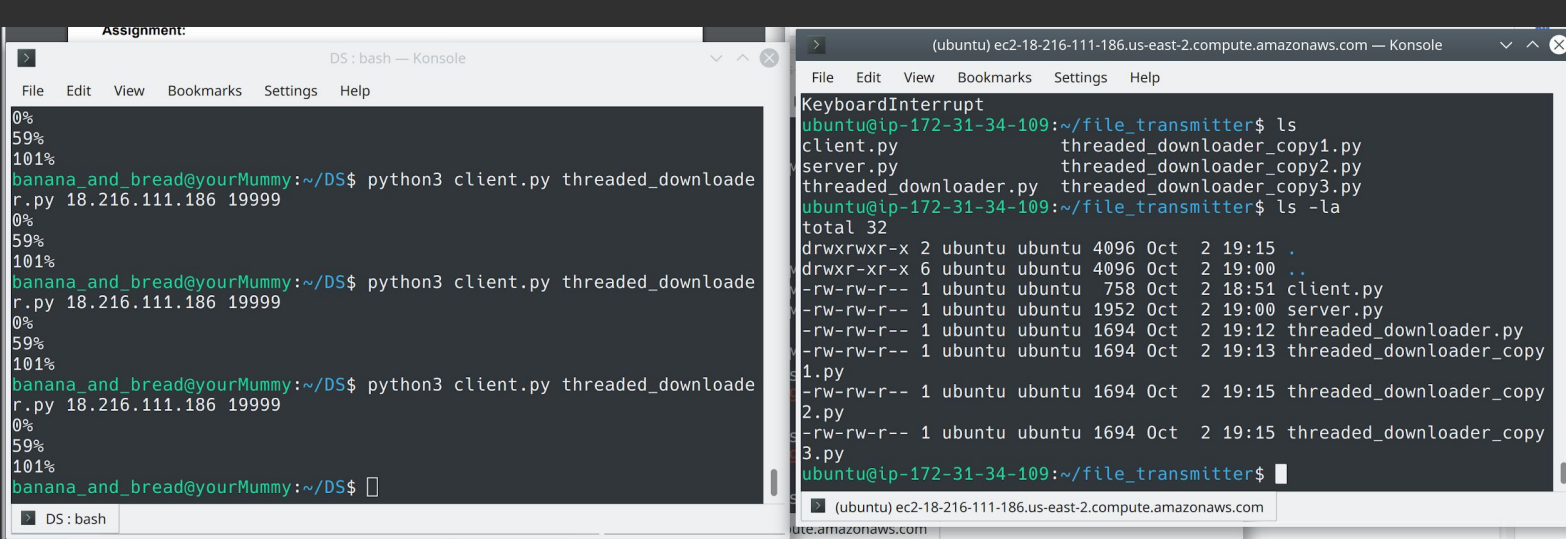
## 1) screenshot of sending progress



```
DS: bash — Konsole
File Edit View Bookmarks Settings Help
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py localhost 9999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py 18.216.111.186 19999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py 18.216.111.186 19999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$
```

```
(ubuntu) ec2-18-216-111-186.us-east-2.compute.amazonaws.com — Konsole
File Edit View Bookmarks Settings Help
)\n    processes.append(p)\n    p.start()\nfor process in processes:\n    process.join()\nend = timeit.timeit()\nprint(end - start)\n\n^CTraceback (most recent call last):\n  File "server.py", line 20, in <module>\n    sc, address = s.accept()\n  File "/usr/lib/python3.6/socket.py", line 205, in accept\n    fd, addr = self._accept()\nKeyboardInterrupt\nubuntu@ip-172-31-34-109:~/file_transmitter$ python3 server.py\nClient address ('188.130.155.152', 59802)\ncreated file threaded_downloader_copy1.py\nbytes transmitted: b'import threading\nimport timeit\nimport requests\n\nURLS = [\n    \"http://www.irs.gov/pub/irs-pdf/f1040.pdf\", \"http://www.irs.gov/pub/irs-pdf/f1040a.pdf\", \"http://www.irs.gov/pub/irs-pdf/f1040ez.pdf\", \"http://www.irs.gov/pub/irs-pdf/f1040es.pdf\", \"http://www.irs.gov/pub/irs-pdf/f1040sb.pdf\"]\n\ndef download_and_save(url, filename):\n    r = requests.get(url)\n    with open(filename, 'wb') as f:\n        f.write(r.content)\n\n# First variant\nprint(\" Spawn threads after previous finished. So they will work one after another:
```

## 2) screenshot of ls -la . output



```
Assignment:
DS: bash — Konsole
File Edit View Bookmarks Settings Help
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py 18.216.111.186 19999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py 18.216.111.186 19999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$ python3 client.py threaded_downloader.py 18.216.111.186 19999
0%
59%
101%
banana_and_bread@yourMummy:~/DS$
```

```
(ubuntu) ec2-18-216-111-186.us-east-2.compute.amazonaws.com — Konsole
File Edit View Bookmarks Settings Help
KeyboardInterrupt
ubuntu@ip-172-31-34-109:~/file_transmitter$ ls
client.py
server.py
threaded_downloader.py
threaded_downloader_copy1.py
threaded_downloader_copy2.py
threaded_downloader_copy3.py
ubuntu@ip-172-31-34-109:~/file_transmitter$ ls -la
total 32
drwxrwxr-x 2 ubuntu ubuntu 4096 Oct  2 19:15 .
drwxr-xr-x 6 ubuntu ubuntu 4096 Oct  2 19:00 ..
-rw-rw-r-- 1 ubuntu ubuntu 758 Oct  2 18:51 client.py
-rw-rw-r-- 1 ubuntu ubuntu 1952 Oct  2 19:00 server.py
-rw-rw-r-- 1 ubuntu ubuntu 1694 Oct  2 19:12 threaded_downloader.py
-rw-rw-r-- 1 ubuntu ubuntu 1694 Oct  2 19:13 threaded_downloader_copy1.py
-rw-rw-r-- 1 ubuntu ubuntu 1694 Oct  2 19:15 threaded_downloader_copy2.py
-rw-rw-r-- 1 ubuntu ubuntu 1694 Oct  2 19:15 threaded_downloader_copy3.py
ubuntu@ip-172-31-34-109:~/file_transmitter$
```

## 3) well formatted source code (next page)



Client.py:

```
import os
import socket
import sys

files = [sys.argv[1]]
ip = sys.argv[2]
port = sys.argv[3]
s = socket.socket()
s.connect((ip, int(port)))
size = 0
for i in files:
    size = os.path.getsize(i) + size

transmitted = 0
print("0%")
for i in files:
    f = open(i, "rb")
    name = i + "!!!"
    end = "/-/--/!"
    bin_name = str.encode(name)
    bin_end = str.encode(end)
    length_1 = len(bin_name)
    length_2 = len(bin_end)
    file_contents = f.read(1024 - length_1 - length_2)
    l = bin_name + file_contents
    while (l):
        transmitted = transmitted + len(l)
        print(f"{int(transmitted * 100 / size)}%")
        next_part = f.read(1024 - length_2)
        if not next_part:
            l = l + bin_end
        s.send(l)
        l = next_part
```

4) link to GitHub repo or gist with source code.

Code is here:

<https://github.com/BananaAndBread/DS/tree/master/Lab6>