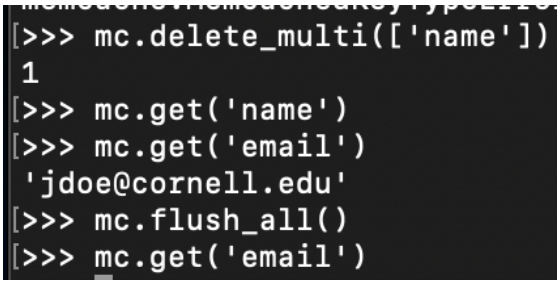
1) Install Memcached
2) Run Memcached (on Mac: **`/opt/homebrew/opt/memcached/bin/memcached -l localhost`**) <– `open a new terminal window once this is running in background`
3) Ensure Memcached is running (on Unix: **`ps -ef | grep -i memc`**)
4) Connect to Memcached through telnet (**telnet localhost 11211**) <— note that 11211 is default Memcached port
5) Run **stats** to retrieve statistics of our Memcached server (e.g., uptime, view how many times certain queries were run, etc…)
6) Let's add a key-val pair (<command> <key> <flag> <exp_time> <byte_size> <no_op>)
   - First (add key): `set foo 0 3600 3`
   - Second: Press enter to actually enter the value on the next line
   - Third (add val): `bar`
7) Memcached will return `STORED`
8) Run **stats** again to analyze differences
9) Run `get foo and see return`
10) Run `delete foo and wait for Memcached to let you know it's gone`
11) Run `get foo and nothing is returned`
12) Run stats to see that get_misses is now 1
13) Let's add another key-val (note: different between add and set is that add will not change value of a key but set will):
   - `add num 0 3600 2 0`
   - 50
14) Let's `get num`
15) Now let's append:
   - `append num 0 3600 2`
   - 25
16) What do you think get num will return? (Ans: 5025)
17) Now let's prepend:
   - `prepend num 0 3600 2`
   - 44
18) What do you think get num will return? (Ans: 445025)
19) Now let's replace:
   - `replace num 0 3600 2`
   - 40
20) What do you think get num will return? (Ans: 40)
21) We can increment num by 2: `incr num 2`
22) And then decrement by 2 as well: `decr num 2`
23) Let's clear our cache: `flush_all`
24) Running stats again shows that while curr_items are 0, total_items are still 5
25) Let's close our connection with memcached through telnet: `quit`
26) `Let's open it back up with command from 4) and notice that there are still total_items == 5`
27) Let's kill our current Memcached server by canceling the process we spawned in step 2 in another terminal window
28) Now we can restart our server by simply running the command from step 2 and

reinitiating a connection with telnet - at this point, total_items should be 0

29) The great thing about memcached is that it works with pretty much all languages and there are myriad interfaces… Let's experiment with one in Python!
30) Make sure a Memcached server is running and a telnet connection is open in another window
31) Open a new window and create a venv and specify a python version (e.g., `conda create --name test python=3.5`)
32) Activate your venv: `conda activate test`
33) Install the python-memcached interface into your venv: `conda install -c anaconda python-memcached`
34) Enter a Python shell: python
35) Write the following script to import, initiate a client, and set/get key/val pair:

```
>>> import memcache
>>> mc = memcache.Client(['127.0.0.1:11211'],debug=0)
>>> mc.set('greet','Hello World')
True
>>> mc.get('greet')
'Hello World'
>>>
```

36) Double-check existence of 'greet' by running 'get greet' in your telnet terminal window
37) This shows Memcached is language agonstic in real-time - great!
38) Let's now leverage our interface language by assigning Memcached to values we can extend...
39) Let's create an object with multiple keys: `mc.set_multi({'name':'John Doe', 'email':'jdoe@cornell.edu'})`
40) We can:
    - 
```
>>> mc.get('name')
'John Doe'
```
    - 
```
>>> mc.get_multi(['name','email'])
{'name': 'John Doe', 'email': 'jdoe@cornell.edu'}
```
41) Let's assign this key/val in our network cache to a Python value: `person = mc.get_multi(['name','email'])`
42) We can:
    - 
```
>>> person.keys()
dict_keys(['name', 'email'])
```
    - 
```
>>> person.values()
dict_values(['John Doe', 'jdoe@cornell.edu'])
```
43) More:

- 
```
>>> mc.delete_multi(['name'])
1
>>> mc.get('name')
>>> mc.get('email')
'jdoe@cornell.edu'
>>> mc.flush_all()
>>> mc.get('email')
```