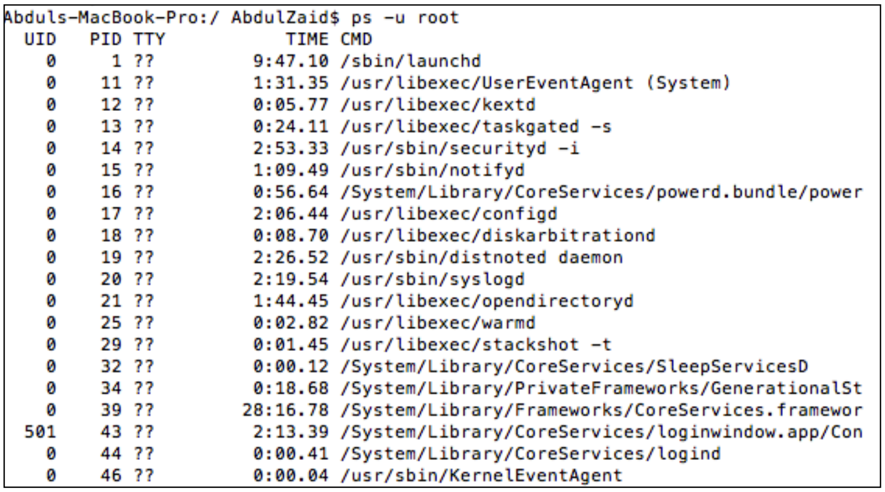
Process Survey

1. What root-owned processes are running?

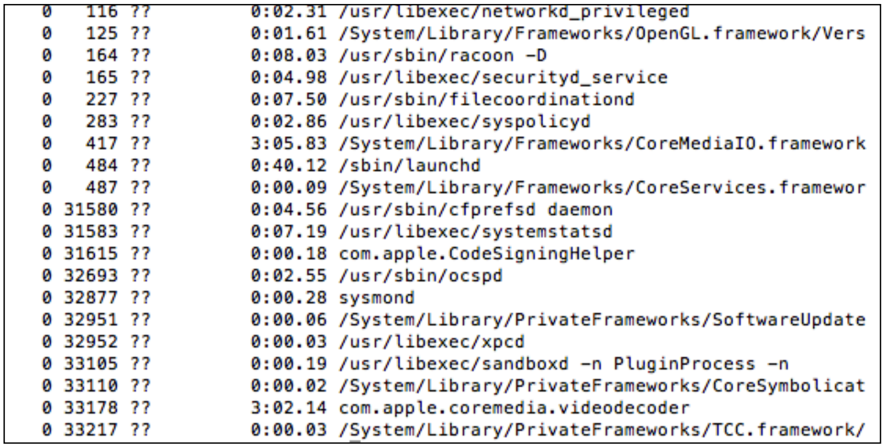
(a) Of course the processes are a lot and the below images show them all. However, in order to get the processes that are running as root I used the command: *ps -u root*

(b) The command used is: *Abduls-MacBook-Pro:/ AbdulZaid$ ps -u root*

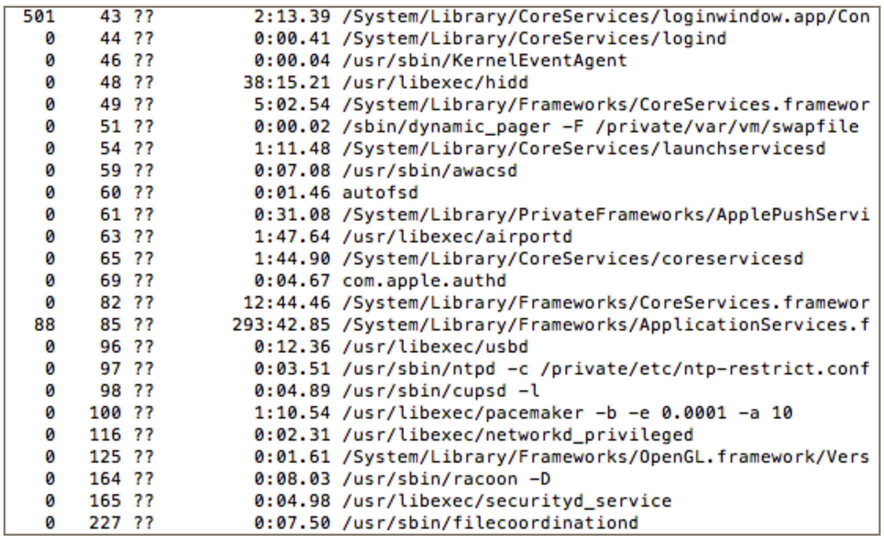
(c)



```
Abduls-MacBook-Pro:/ AbdulZaid$ ps -u root
  UID   PID TTY           TIME CMD
    0     1 ??         9:47.10 /sbin/launchd
    0    11 ??         1:31.35 /usr/libexec/UserEventAgent (System)
    0    12 ??         0:05.77 /usr/libexec/kextd
    0    13 ??         0:24.11 /usr/libexec/taskgated -s
    0    14 ??         2:53.33 /usr/sbin/securityd -i
    0    15 ??         1:09.49 /usr/sbin/notifyd
    0    16 ??         0:56.64 /System/Library/CoreServices/powerd.bundle/power
    0    17 ??         2:06.44 /usr/libexec/configd
    0    18 ??         0:08.70 /usr/libexec/diskarbitrationd
    0    19 ??         2:26.52 /usr/sbin/distnoted daemon
    0    20 ??         2:19.54 /usr/sbin/syslogd
    0    21 ??         1:44.45 /usr/libexec/opendirectoryd
    0    25 ??         0:02.82 /usr/libexec/warmd
    0    29 ??         0:01.45 /usr/libexec/stackshot -t
    0    32 ??         0:00.12 /System/Library/CoreServices/SleepServicesD
    0    34 ??         0:18.68 /System/Library/PrivateFrameworks/GenerationalSt
    0    39 ??        28:16.78 /System/Library/Frameworks/CoreServices.framewor
  501    43 ??         2:13.39 /System/Library/CoreServices/loginwindow.app/Con
    0    44 ??         0:00.41 /System/Library/CoreServices/logind
    0    46 ??         0:00.04 /usr/sbin/KernelEventAgent
```



```
    0   116 ??         0:02.31 /usr/libexec/networkd_privileged
    0   125 ??         0:01.61 /System/Library/Frameworks/OpenGL.framework/Vers
    0   164 ??         0:08.03 /usr/sbin/racoon -D
    0   165 ??         0:04.98 /usr/libexec/securityd_service
    0   227 ??         0:07.50 /usr/sbin/filecoordinationd
    0   283 ??         0:02.86 /usr/libexec/syspolicyd
    0   417 ??         3:05.83 /System/Library/Frameworks/CoreMediaIO.framework
    0   484 ??         0:40.12 /sbin/launchd
    0   487 ??         0:00.09 /System/Library/Frameworks/CoreServices.framewor
    0 31580 ??         0:04.56 /usr/sbin/cfprefsd daemon
    0 31583 ??         0:07.19 /usr/libexec/systemstatsd
    0 31615 ??         0:00.18 com.apple.CodeSigningHelper
    0 32693 ??         0:02.55 /usr/sbin/ocspd
    0 32877 ??         0:00.28 sysmond
    0 32951 ??         0:00.06 /System/Library/PrivateFrameworks/SoftwareUpdate
    0 32952 ??         0:00.03 /usr/libexec/xpcd
    0 33105 ??         0:00.19 /usr/libexec/sandboxd -n PluginProcess -n
    0 33110 ??         0:00.02 /System/Library/PrivateFrameworks/CoreSymbolicat
    0 33178 ??         3:02.14 com.apple.coremedia.videodecoder
    0 33217 ??         0:00.03 /System/Library/PrivateFrameworks/TCC.framework/
```



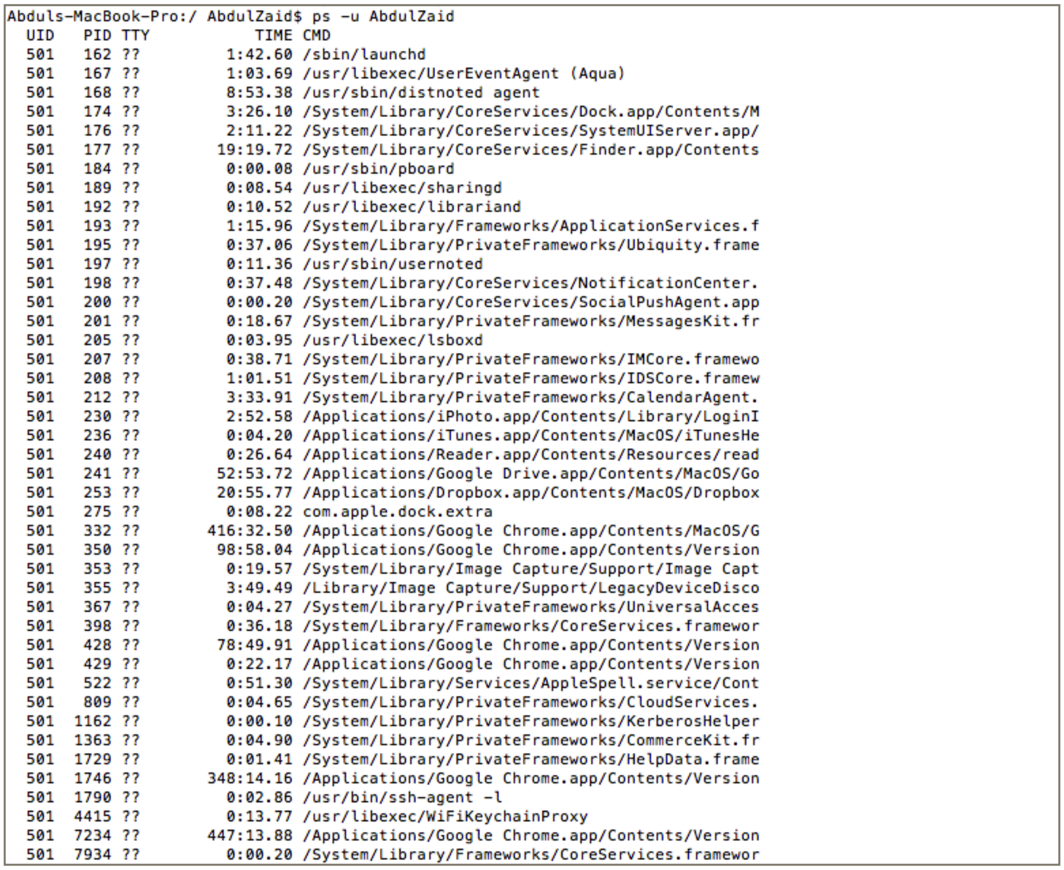
```
  501    43 ??         2:13.39 /System/Library/CoreServices/loginwindow.app/Con
    0    44 ??         0:00.41 /System/Library/CoreServices/logind
    0    46 ??         0:00.04 /usr/sbin/KernelEventAgent
    0    48 ??        38:15.21 /usr/libexec/hidd
    0    49 ??         5:02.54 /System/Library/Frameworks/CoreServices.framewor
    0    51 ??         0:00.02 /sbin/dynamic_pager -F /private/var/vm/swapfile
    0    54 ??         1:11.48 /System/Library/CoreServices/launchservicesd
    0    59 ??         0:07.08 /usr/sbin/awacsd
    0    60 ??         0:01.46 autofsd
    0    61 ??         0:31.08 /System/Library/PrivateFrameworks/ApplePushServi
    0    63 ??         1:47.64 /usr/libexec/airportd
    0    65 ??         1:44.90 /System/Library/CoreServices/coreservicesd
    0    69 ??         0:04.67 com.apple.authd
    0    82 ??        12:44.46 /System/Library/Frameworks/CoreServices.framewor
   88    85 ??       293:42.85 /System/Library/Frameworks/ApplicationServices.f
    0    96 ??         0:12.36 /usr/libexec/usbd
    0    97 ??         0:03.51 /usr/sbin/ntpd -c /private/etc/ntp-restrict.conf
    0    98 ??         0:04.89 /usr/sbin/cupsd -l
    0   100 ??         1:10.54 /usr/libexec/pacemaker -b -e 0.0001 -a 10
    0   116 ??         0:02.31 /usr/libexec/networkd_privileged
    0   125 ??         0:01.61 /System/Library/Frameworks/OpenGL.framework/Vers
    0   164 ??         0:08.03 /usr/sbin/racoon -D
    0   165 ??         0:04.98 /usr/libexec/securityd_service
    0   227 ??         0:07.50 /usr/sbin/filecoordinationd
```

2. What processes are running on your account?

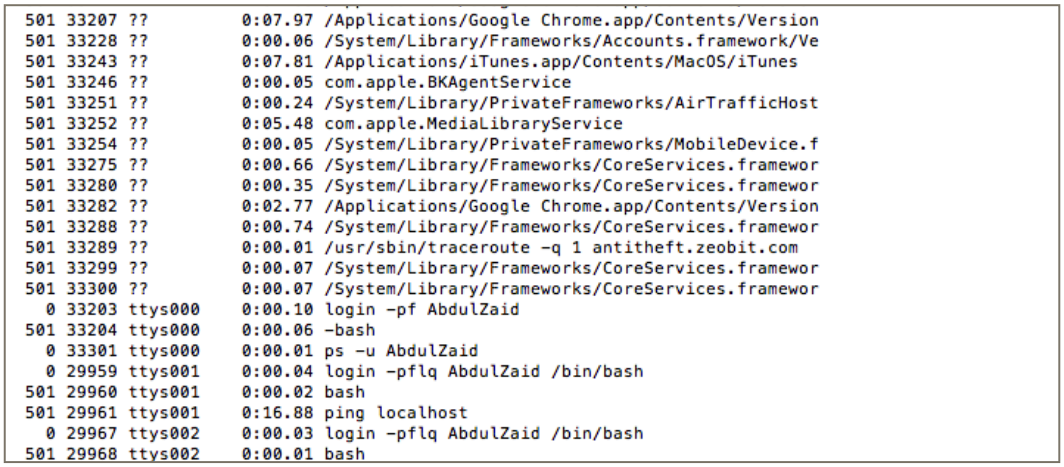
(a) The processes that are running on my account are a lot, for example in my case, *bash, chrome, screen,* and a lot more*.* I used *ps -u AbdulZaid*

(b)The Command used is: *Abduls-MacBook-Pro:/ AbdulZaid$ ps -u AbdulZaid*

(c)



```
Abduls-MacBook-Pro:/ AbdulZaid$ ps -u AbdulZaid
  UID   PID TTY           TIME CMD
  501   162 ??         1:42.60 /sbin/launchd
  501   167 ??         1:03.69 /usr/libexec/UserEventAgent (Aqua)
  501   168 ??         8:53.38 /usr/sbin/distnoted agent
  501   174 ??         3:26.10 /System/Library/CoreServices/Dock.app/Contents/M
  501   176 ??         2:11.22 /System/Library/CoreServices/SystemUIServer.app/
  501   177 ??        19:19.72 /System/Library/CoreServices/Finder.app/Contents
  501   184 ??         0:00.08 /usr/sbin/pboard
  501   189 ??         0:08.54 /usr/libexec/sharingd
  501   192 ??         0:10.52 /usr/libexec/librariand
  501   193 ??         1:15.96 /System/Library/Frameworks/ApplicationServices.f
  501   195 ??         0:37.06 /System/Library/PrivateFrameworks/Ubiquity.frame
  501   197 ??         0:11.36 /usr/sbin/usernoted
  501   198 ??         0:37.48 /System/Library/CoreServices/NotificationCenter.
  501   200 ??         0:00.20 /System/Library/CoreServices/SocialPushAgent.app
  501   201 ??         0:18.67 /System/Library/PrivateFrameworks/MessagesKit.fr
  501   205 ??         0:03.95 /usr/libexec/lsboxd
  501   207 ??         0:38.71 /System/Library/PrivateFrameworks/IMCore.framewo
  501   208 ??         1:01.51 /System/Library/PrivateFrameworks/IDSCore.framew
  501   212 ??         3:33.91 /System/Library/PrivateFrameworks/CalendarAgent.
  501   230 ??         2:52.58 /Applications/iPhoto.app/Contents/Library/LoginI
  501   236 ??         0:04.20 /Applications/iTunes.app/Contents/MacOS/iTunesHe
  501   240 ??         0:26.64 /Applications/Reader.app/Contents/Resources/read
  501   241 ??        52:53.72 /Applications/Google Drive.app/Contents/MacOS/Go
  501   253 ??        20:55.77 /Applications/Dropbox.app/Contents/MacOS/Dropbox
  501   275 ??         0:08.22 com.apple.dock.extra
  501   332 ??       416:32.50 /Applications/Google Chrome.app/Contents/MacOS/G
  501   350 ??        98:58.04 /Applications/Google Chrome.app/Contents/Version
  501   353 ??         0:19.57 /System/Library/Image Capture/Support/Image Capt
  501   355 ??         3:49.49 /Library/Image Capture/Support/LegacyDeviceDisco
  501   367 ??         0:04.27 /System/Library/PrivateFrameworks/UniversalAcces
  501   398 ??         0:36.18 /System/Library/Frameworks/CoreServices.framewor
  501   428 ??        78:49.91 /Applications/Google Chrome.app/Contents/Version
  501   429 ??         0:22.17 /Applications/Google Chrome.app/Contents/Version
  501   522 ??         0:51.30 /System/Library/Services/AppleSpell.service/Cont
  501   809 ??         0:04.65 /System/Library/PrivateFrameworks/CloudServices.
  501  1162 ??         0:00.10 /System/Library/PrivateFrameworks/KerberosHelper
  501  1363 ??         0:04.90 /System/Library/PrivateFrameworks/CommerceKit.fr
  501  1729 ??         0:01.41 /System/Library/PrivateFrameworks/HelpData.frame
  501  1746 ??       348:14.16 /Applications/Google Chrome.app/Contents/Version
  501  1790 ??         0:02.86 /usr/bin/ssh-agent -l
  501  4415 ??         0:13.77 /usr/libexec/WiFiKeychainProxy
  501  7234 ??       447:13.88 /Applications/Google Chrome.app/Contents/Version
  501  7934 ??         0:00.20 /System/Library/Frameworks/CoreServices.framewor
```



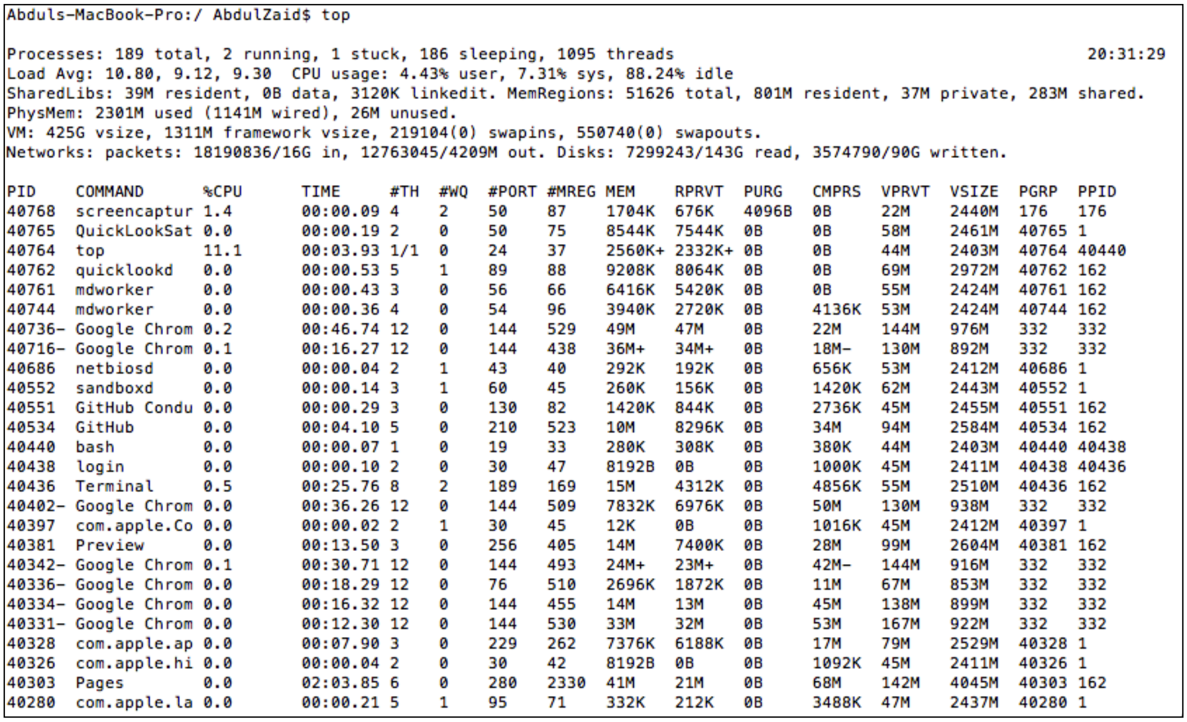
```
  501 33207 ??         0:07.97 /Applications/Google Chrome.app/Contents/Version
  501 33228 ??         0:00.06 /System/Library/Frameworks/Accounts.framework/Ve
  501 33243 ??         0:07.81 /Applications/iTunes.app/Contents/MacOS/iTunes
  501 33246 ??         0:00.05 com.apple.BKAgentService
  501 33251 ??         0:00.24 /System/Library/PrivateFrameworks/AirTrafficHost
  501 33252 ??         0:05.48 com.apple.MediaLibraryService
  501 33254 ??         0:00.05 /System/Library/PrivateFrameworks/MobileDevice.f
  501 33275 ??         0:00.66 /System/Library/Frameworks/CoreServices.framewor
  501 33280 ??         0:00.35 /System/Library/Frameworks/CoreServices.framewor
  501 33282 ??         0:02.77 /Applications/Google Chrome.app/Contents/Version
  501 33288 ??         0:00.74 /System/Library/Frameworks/CoreServices.framewor
  501 33289 ??         0:00.01 /usr/sbin/traceroute -q 1 antitheft.zeobit.com
  501 33299 ??         0:00.07 /System/Library/Frameworks/CoreServices.framewor
  501 33300 ??         0:00.07 /System/Library/Frameworks/CoreServices.framewor
    0 33203 ttys000    0:00.10 login -pf AbdulZaid
  501 33204 ttys000    0:00.06 -bash
    0 33301 ttys000    0:00.01 ps -u AbdulZaid
    0 29959 ttys001    0:00.04 login -pflq AbdulZaid /bin/bash
  501 29960 ttys001    0:00.02 bash
  501 29961 ttys001    0:16.88 ping localhost
    0 29967 ttys002    0:00.03 login -pflq AbdulZaid /bin/bash
  501 29968 ttys002    0:00.01 bash
```

3. Run a typical working set of applications (e.g web browser, chat program, text editor, etc.). Which application is using the most real memory? The most virtual memory?

(a) The application that is using the most real memory (MEM) is ***Google Chrome**,* and the program that is using the most Virtual memory (VSIZE) is ***Apple Pages.***

(b) The command used: *Abduls-MacBook-Pro:/ AbdulZaid$ top*

(c)



```
Abduls-MacBook-Pro:/ AbdulZaid$ top

Processes: 189 total, 2 running, 1 stuck, 186 sleeping, 1095 threads                                  20:31:29
Load Avg: 10.80, 9.12, 9.30  CPU usage: 4.43% user, 7.31% sys, 88.24% idle
SharedLibs: 39M resident, 0B data, 3120K linkedit. MemRegions: 51626 total, 801M resident, 37M private, 283M shared.
PhysMem: 2301M used (1141M wired), 26M unused.
VM: 425G vsize, 1311M framework vsize, 219104(0) swapins, 550740(0) swapouts.
Networks: packets: 18190836/16G in, 12763045/4209M out. Disks: 7299243/143G read, 3574790/90G written.

PID    COMMAND      %CPU      TIME     #TH  #WQ  #PORT #MREG MEM    RPRVT  PURG   CMPRS  VPRVT  VSIZE  PGRP  PPID
40768  screencaptur 1.4       00:00.09 4    2    50    87    1704K  676K   4096B  0B     22M    2440M  176   176
40765  QuickLookSat 0.0       00:00.19 2    0    50    75    8544K  7544K  0B     0B     58M    2461M  40765 1
40764  top          11.1      00:03.93 1/1  0    24    37    2560K+ 2332K+ 0B     0B     44M    2403M  40764 40440
40762  quicklookd   0.0       00:00.53 5    1    89    88    9208K  8064K  0B     0B     69M    2972M  40762 162
40761  mdworker     0.0       00:00.43 3    0    56    66    6416K  5420K  0B     0B     55M    2424M  40761 162
40744  mdworker     0.0       00:00.36 4    0    54    96    3940K  2720K  0B     4136K  53M    2424M  40744 162
40736- Google Chrom 0.2       00:46.74 12   0    144   529   49M    47M    0B     22M    144M   976M   332   332
40716- Google Chrom 0.1       00:16.27 12   0    144   438   36M+   34M+   0B     18M-   130M   892M   332   332
40686  netbiosd     0.0       00:00.04 2    1    43    40    292K   192K   0B     656K   53M    2412M  40686 1
40552  sandboxd     0.0       00:00.14 3    1    60    45    260K   156K   0B     1420K  62M    2443M  40552 1
40551  GitHub Condu 0.0       00:00.29 3    0    130   82    1420K  844K   0B     2736K  45M    2455M  40551 162
40534  GitHub       0.0       00:04.10 5    0    210   523   10M    8296K  0B     34M    94M    2584M  40534 162
40440  bash         0.0       00:00.07 1    0    19    33    280K   308K   0B     380K   44M    2403M  40440 40438
40438  login        0.0       00:00.10 2    0    30    47    8192B  0B     0B     1000K  45M    2411M  40438 40436
40436  Terminal     0.5       00:25.76 8    2    189   169   15M    4312K  0B     4856K  55M    2510M  40436 162
40402- Google Chrom 0.0       00:36.26 12   0    144   509   7832K  6976K  0B     50M    130M   938M   332   332
40397  com.apple.Co 0.0       00:00.02 2    1    30    45    12K    0B     0B     1016K  45M    2412M  40397 1
40381  Preview      0.0       00:13.50 3    0    256   405   14M    7400K  0B     28M    99M    2604M  40381 162
40342- Google Chrom 0.1       00:30.71 12   0    144   493   24M+   23M+   0B     42M-   144M   916M   332   332
40336- Google Chrom 0.0       00:18.29 12   0    76    510   2696K  1872K  0B     11M    67M    853M   332   332
40334- Google Chrom 0.0       00:16.32 12   0    144   455   14M    13M    0B     45M    138M   899M   332   332
40331- Google Chrom 0.0       00:12.30 12   0    144   530   33M    32M    0B     53M    167M   922M   332   332
40328  com.apple.ap 0.0       00:07.90 3    0    229   262   7376K  6188K  0B     17M    79M    2529M  40328 1
40326  com.apple.hi 0.0       00:00.04 2    0    30    42    8192B  0B     0B     1092K  45M    2411M  40326 1
40303  Pages        0.0       02:03.85 6    0    280   2330  41M    21M    0B     68M    142M   4045M  40303 162
40280  com.apple.la 0.0       00:00.21 5    1    95    71    332K   212K   0B     3488K  47M    2437M  40280 1
```

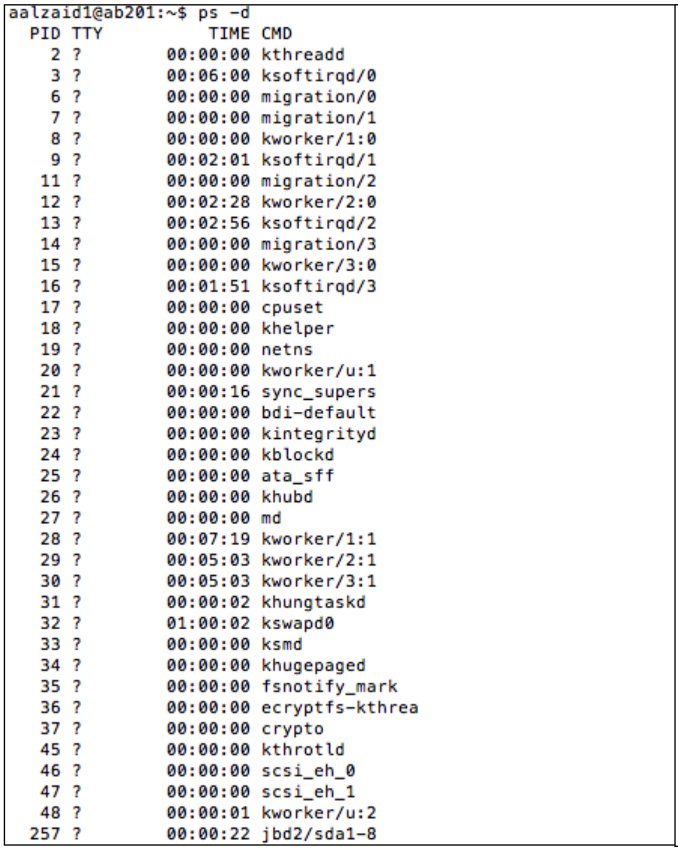
JD: Although top gives you the needed information, you are required to get this *interactively*. This does not work well for automation or scripting. We want commands that give you the desired answer immediately, with a minimum of manual work.

4. Login to my.cs.lmu.edu. Who else, other than root and you, has processes running at that time?

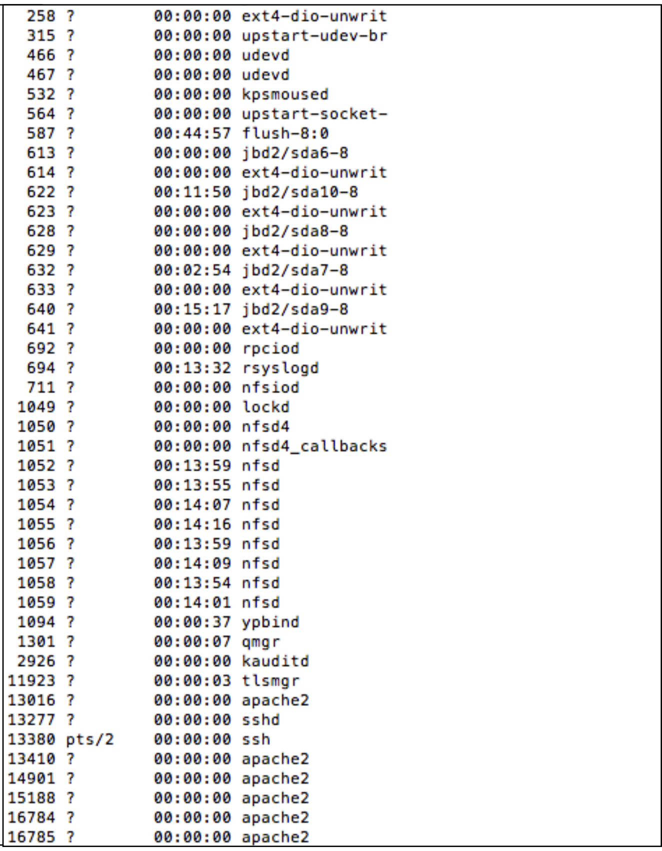
(a) The processes running at that time includes: *kthreadd, ksoftirqd, migration, udevd, nfsd, apache2, sshd, and ps,* and many others.

(b) The command used: *aalzaid1@ab201:~$ ps -d*

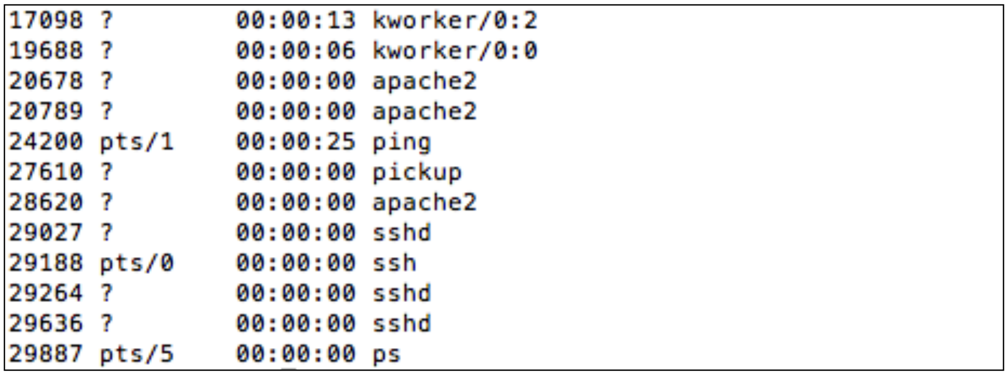
(c)



```
aalzaid1@ab201:~$ ps -d
  PID TTY          TIME CMD
    2 ?        00:00:00 kthreadd
    3 ?        00:06:00 ksoftirqd/0
    6 ?        00:00:00 migration/0
    7 ?        00:00:00 migration/1
    8 ?        00:00:00 kworker/1:0
    9 ?        00:02:01 ksoftirqd/1
   11 ?        00:00:00 migration/2
   12 ?        00:02:28 kworker/2:0
   13 ?        00:02:56 ksoftirqd/2
   14 ?        00:00:00 migration/3
   15 ?        00:00:00 kworker/3:0
   16 ?        00:01:51 ksoftirqd/3
   17 ?        00:00:00 cpuset
   18 ?        00:00:00 khelper
   19 ?        00:00:00 netns
   20 ?        00:00:00 kworker/u:1
   21 ?        00:00:16 sync_supers
   22 ?        00:00:00 bdi-default
   23 ?        00:00:00 kintegrityd
   24 ?        00:00:00 kblockd
   25 ?        00:00:00 ata_sff
   26 ?        00:00:00 khubd
   27 ?        00:00:00 md
   28 ?        00:07:19 kworker/1:1
   29 ?        00:05:03 kworker/2:1
   30 ?        00:05:03 kworker/3:1
   31 ?        00:00:02 khungtaskd
   32 ?        01:00:02 kswapd0
   33 ?        00:00:00 ksmd
   34 ?        00:00:00 khugepaged
   35 ?        00:00:00 fsnotify_mark
   36 ?        00:00:00 ecryptfs-kthrea
   37 ?        00:00:00 crypto
   45 ?        00:00:00 kthrotld
   46 ?        00:00:00 scsi_eh_0
   47 ?        00:00:00 scsi_eh_1
   48 ?        00:00:01 kworker/u:2
  257 ?        00:00:22 jbd2/sda1-8
```



```
  258 ?        00:00:00 ext4-dio-unwrit
  315 ?        00:00:00 upstart-udev-br
  466 ?        00:00:00 udevd
  467 ?        00:00:00 udevd
  532 ?        00:00:00 kpsmoused
  564 ?        00:00:00 upstart-socket-
  587 ?        00:44:57 flush-8:0
  613 ?        00:00:00 jbd2/sda6-8
  614 ?        00:00:00 ext4-dio-unwrit
  622 ?        00:11:50 jbd2/sda10-8
  623 ?        00:00:00 ext4-dio-unwrit
  628 ?        00:00:00 jbd2/sda8-8
  629 ?        00:00:00 ext4-dio-unwrit
  632 ?        00:02:54 jbd2/sda7-8
  633 ?        00:00:00 ext4-dio-unwrit
  640 ?        00:15:17 jbd2/sda9-8
  641 ?        00:00:00 ext4-dio-unwrit
  692 ?        00:00:00 rpciod
  694 ?        00:13:32 rsyslogd
  711 ?        00:00:00 nfsiod
 1049 ?        00:00:00 lockd
 1050 ?        00:00:00 nfsd4
 1051 ?        00:00:00 nfsd4_callbacks
 1052 ?        00:13:59 nfsd
 1053 ?        00:13:55 nfsd
 1054 ?        00:14:07 nfsd
 1055 ?        00:14:16 nfsd
 1056 ?        00:13:59 nfsd
 1057 ?        00:14:09 nfsd
 1058 ?        00:13:54 nfsd
 1059 ?        00:14:01 nfsd
 1094 ?        00:00:37 ypbind
 1301 ?        00:00:07 qmgr
 2926 ?        00:00:00 kauditd
11923 ?        00:00:03 tlsmgr
13016 ?        00:00:00 apache2
13277 ?        00:00:00 sshd
13380 pts/2    00:00:00 ssh
13410 ?        00:00:00 apache2
14901 ?        00:00:00 apache2
15188 ?        00:00:00 apache2
16784 ?        00:00:00 apache2
16785 ?        00:00:00 apache2
```



```
17098 ?        00:00:13 kworker/0:2
19688 ?        00:00:06 kworker/0:0
20678 ?        00:00:00 apache2
20789 ?        00:00:00 apache2
24200 pts/1    00:00:25 ping
27610 ?        00:00:00 pickup
28620 ?        00:00:00 apache2
29027 ?        00:00:00 sshd
29188 pts/0    00:00:00 ssh
29264 ?        00:00:00 sshd
29636 ?        00:00:00 sshd
29887 pts/5    00:00:00 ps
```

JD: The -d option "removes session leaders." What is a session leader? Are you sure these are all users other than root and yourself? I don't think they are the same. Further, the question asks *who* these users are. You are listing *processes* here, not users.