

## Lab 3

1- Create a shared group with name “ateam”, with two new users “andy” and “alice”, the password for these accounts is “iti41”.

```
root@hasnaa: ~  
root@hasnaa:~# groupadd ateam  
root@hasnaa:~# useradd -m andy -G ateam -p iti41  
root@hasnaa:~# useradd -m alice -G ateam -p iti41  
root@hasnaa:~# tail -n2 /etc/passwd  
andy:x:1007:3002:~/home/andy:/bin/sh  
alice:x:1008:1008:~/home/alice:/bin/sh  
root@hasnaa:~#
```

2- create a new directory “ateam-text” in /home.

```
root@hasnaa:~# mkdir ateam_text  
root@hasnaa:~#
```

3- change the group ownership of the “ateam-text” directory to “ateam” group.

```
root@hasnaa:~# chgrp ateam ateam_text/  
root@hasnaa:~#
```

4- Ensure the permissions of “ateam -text” allows group members to create and delete files.

```
root@hasnaa:~# ls -l  
total 64  
drwxr-xr-x 2 root root 4096 Jun 9 11:47 LAB1  
-rwxr-xr-x 1 root root 292 Jun 9 14:04 arth.sh  
drwxr-xr-x 2 root ateam 4096 Jun 10 13:38 ateam_text  
drwxr-xr-x 2 root root 4096 Jun 9 11:34 bash_day1  
-rw----- 1 root root 87 Jun 8 12:43 d1  
-rw-r--r-- 1 root root 0 Jun 8 12:33 error.txt  
-rw-r--r-- 1 root root 0 Jun 8 12:16 fie.txt  
-rw-r--r-- 1 root root 1548 Jun 9 09:19 gfile  
-rw-r--r-- 1 root root 30 Jun 8 12:17 has.txt  
-rwxr-xr-x 1 root root 76 Jun 9 11:53 lab2_script  
drwxr-xr-x 2 root root 4096 Jun 9 12:32 lab3  
drwxr-xr-x 2 root root 4096 Jun 9 13:55 lab4  
drwxr-xr-x 2 root root 4096 Jun 9 15:01 lab5  
drwxr-xr-x 2 root root 4096 Jun 9 15:01 lab6  
-rw-r--r-- 1 root root 104 Jun 8 15:09 mycv  
-rw-r--r-- 1 root root 5 Jun 8 12:33 output.txt  
drwx----- 3 root root 4096 Jun 8 09:20 snap  
drwxr-xr-x 3 root root 4096 Jun 8 11:50 xc  
root@hasnaa:~#
```

5- Ensure the permissions of “ateam -text” forbids others from accessing its files.

```
drwxr-xr-x 2 root ateam 4096 Jun 10 13:38 ateam_text
```

6- switch to the user "andy" , and navigate to "/home/ateam-text" folder

```
root@hasnaa:~# cd ateam_text
root@hasnaa:~/ateam_text#
```

7- create an empty file called "andyfile", and then record the default user and group ownership of the new file and its permissions

```
root@hasnaa:~/ateam_text# touch andyfile
root@hasnaa:~/ateam_text# ls -l
total 0
-rw-r--r-- 1 root root 0 Jun 10 13:43 andyfile
root@hasnaa:~/ateam_text#
```

8- change the group ownership of the file to "ateam" and record the new ownership and permissions.

```
root@hasnaa:~/ateam_text# chgrp ateam andyfile
root@hasnaa:~/ateam_text# ls -l
total 0
-rw-r--r-- 1 root ateam 0 Jun 10 13:43 andyfile
root@hasnaa:~/ateam_text#
```

9- exit from shell "andy" and then switch to "alice", and then navigate to "/home/ateam-text"

```
root@hasnaa:~# sudo su alice
$ whoami
alice
$ exit
root@hasnaa:~# cd ateam_text
root@hasnaa:~/ateam_text#
```

10- Determine alice's privileges to access and /or modify andyfile3.

```
root@hasnaa:~/ateam_text# ls -l andyfile
-rw-r--r-- 1 root ateam 0 Jun 10 13:43 andyfile
```

11- switch to your user again and then, In a terminal window, run the top utility. Size the window to be as tall as possible.

```

root@hasnaa:~# top
top - 14:22:28 up 1:29, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 51 total, 1 running, 50 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.2 us, 0.1 sy, 0.0 ni, 99.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3856.1 total, 2316.0 free, 556.3 used, 983.8 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used, 3062.8 avail Mem

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
    1 root        20   0   18440 11316 8256 S   1.0   0.3   0:58.71 systemd
   472 root        20   0   44236 37656 10268 S   0.7   1.0   0:33.40 python3
     2 root        20   0    2280  1300  1188 S   0.0   0.0   0:00.01 init-sys+
     8 root        20   0    2324    68    68 S   0.0   0.0   0:00.04 init
   43 root        19  -1   64128 19620 18556 S   0.0   0.5   0:00.45 systemd+
   66 root        20   0   21960  5800  4440 S   0.0   0.1   0:00.25 systemd+
   78 root        20   0    4492   184    36 S   0.0   0.0   0:00.00 snapfuse
   81 root        20   0    4780  1672  1232 S   0.0   0.0   0:00.94 snapfuse
   83 root        20   0    4492   180    36 S   0.0   0.0   0:00.00 snapfuse
   85 root        20   0    4624   192    36 S   0.0   0.0   0:00.00 snapfuse
   90 root        20   0    4492   152     4 S   0.0   0.0   0:00.00 snapfuse
   95 root        20   0    4732  1728  1216 S   0.0   0.0   0:03.14 snapfuse
   96 root        20   0    4492   160    12 S   0.0   0.0   0:00.00 snapfuse
   99 root        20   0    4768  1968  1412 S   0.0   0.0   0:01.25 snapfuse
  106 systemd+   20   0   25532 12620  8424 S   0.0   0.3   0:00.40 systemd+
  122 root        20   0    4304   2624  2384 S   0.0   0.1   0:00.01 cron
  124 message+   20   0    8704  4884  4168 S   0.0   0.1   0:00.42 dbus-dae+
  146 root        20   0   30100 19028 10240 S   0.0   0.5   0:00.20 networkd+
  148 syslog      20   0  222400  7244  4436 S   0.0   0.2   0:00.07 rsyslogd
  151 root        20   0 1763672 41476 19544 S   0.0   1.1   0:01.25 snapd
  158 root        20   0   15556  7640  6600 S   0.0   0.2   0:00.39 systemd+
  215 root        20   0    4780  3260  3024 S   0.0   0.1   0:00.11 subiquit+
  223 root        20   0    3236  1056   964 S   0.0   0.0   0:00.00 agetty
  237 root        20   0    3192  1032   944 S   0.0   0.0   0:00.00 agetty
  238 root        20   0  107220 21208 13100 S   0.0   0.5   0:00.12 unattend+
  352 root        20   0  820128 83400 22524 S   0.0   2.1   0:07.59 python3.+
  368 root        20   0    2296   112     0 S   0.0   0.0   0:00.00 SessionL+
  369 root        20   0    2296   120     0 S   0.0   0.0   0:00.06 Relay(37+
  370 root        20   0    6076  5092  3388 S   0.0   0.1   0:00.11 bash

```

12- Change the display to sort by the amount of memory in use by each process. Shift + m

```

top - 14:23:16 up 1:30, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 51 total, 1 running, 50 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.1 us, 0.5 sy, 0.0 ni, 99.4 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3856.1 total, 2316.7 free, 555.6 used, 983.8 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used, 3063.5 avail Mem

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
  352 root        20   0  820128 83400 22524 S   0.0   2.1   0:07.63 python3.+
  151 root        20   0 1763672 41476 19544 S   0.0   1.1   0:01.25 snapd
   472 root        20   0   44236 37656 10268 S   0.3   1.0   0:33.68 python3
  238 root        20   0  107220 21208 13100 S   0.0   0.5   0:00.12 unattend+
  988 root        20   0  292996 20548 17644 S   0.0   0.5   0:00.18 packagek+
   43 root        19  -1   64128 19620 18556 S   0.0   0.5   0:00.45 systemd+
  146 root        20   0   30100 19028 10240 S   0.0   0.5   0:00.20 networkd+
  106 systemd+   20   0   25532 12620  8424 S   0.0   0.3   0:00.40 systemd+
     1 root        20   0   18440 11316 8256 S   1.0   0.3   0:59.17 systemd
   437 root        20   0   17028  9672  8096 S   0.0   0.2   0:00.12 systemd
  20039 hasnaa    20   0   16924  8808  7348 S   0.0   0.2   0:00.06 systemd
   993 root        20   0  234496  8700  6028 S   0.0   0.2   0:00.10 polkitd
  158 root        20   0   15556  7640  6600 S   0.0   0.2   0:00.39 systemd+
  148 syslog      20   0  222400  7244  4436 S   0.0   0.2   0:00.07 rsyslogd
   66 root        20   0   21960  5800  4440 S   0.0   0.1   0:00.25 systemd+
 20045 hasnaa    20   0    6084  5168  3496 S   0.0   0.1   0:00.02 bash
 22382 root        20   0    6080  5152  3460 S   0.0   0.1   0:00.04 bash
 21875 hasnaa    20   0    6084  5120  3448 S   0.0   0.1   0:00.03 bash
 26067 root        20   0    6080  5116  3444 S   0.0   0.1   0:00.03 bash
   370 root        20   0    6076  5092  3388 S   0.0   0.1   0:00.11 bash
 20320 root        20   0    6080  5076  3380 S   0.0   0.1   0:00.05 bash
   443 root        20   0    6120  4932  3372 S   0.0   0.1   0:00.00 bash
  124 message+   20   0    8704  4884  4168 S   0.0   0.1   0:00.42 dbus-dae+
   371 root        20   0    7472  4696  3788 S   0.0   0.1   0:00.01 login
 21874 root        20   0    7628  4252  3696 S   0.0   0.1   0:00.00 su
 20036 root        20   0    7628  4224  3664 S   0.0   0.1   0:00.00 su
 26278 root        20   0    7920  3852  3144 R   0.0   0.1   0:00.13 top
 20040 hasnaa    20   0    21672 3600    12 S   0.0   0.1   0:00.00 (sd-pam)
   438 root        20   0  103504  3516    16 S   0.0   0.1   0:00.00 (sd-pam)
  215 root        20   0    4780  3260  3024 S   0.0   0.1   0:00.11 subiquit+

```

14- Change the display interval “refresh” time of the process to be 4sec instead of 3  
Shift + d

```

top - 14:24:02 up 1:31, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 51 total, 1 running, 50 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.2 us, 0.2 sy, 0.0 ni, 99.5 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3856.1 total, 2316.5 free, 555.8 used, 983.8 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used, 3063.3 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR  S  %CPU  %MEM   TIME+ COMMAND
  352 root        20   0   820128   83400  22524 S   0.0   2.1   0:07.66 python3.+
  151 root        20   0  1763672   41476  19544 S   0.0   1.1   0:01.26 snapd
  472 root        20   0    44236   37656  10268 S   0.7   1.0   0:33.95 python3
  238 root        20   0   107220   21208  13100 S   0.0   0.5   0:00.12 unattend+
  988 root        20   0   292996   20548  17644 S   0.0   0.5   0:00.18 packagek+
   43 root        19  -1    64128   19620  18556 S   0.0   0.5   0:00.45 systemd+
  146 root        20   0    30100   19028  10240 S   0.0   0.5   0:00.20 networkd+
  106 systemd+    20   0   25532   12620   8424 S   0.0   0.3   0:00.40 systemd+
    1 root        20   0   184440  11316   8256 S   1.0   0.3   0:59.61 systemd
  437 root        20   0   17028    9672   8096 S   0.0   0.2   0:00.12 systemd
 20039 hasnaa     20   0   16924    8808   7348 S   0.0   0.2   0:00.06 systemd
   993 root        20   0  234496    8700   6028 S   0.0   0.2   0:00.10 polkitd
  158 root        20   0   15556    7640   6600 S   0.0   0.2   0:00.39 systemd+
  148 syslog     20   0   222400    7244   4436 S   0.0   0.2   0:00.07 rsyslogd
   66 root        20   0   21960    5800   4440 S   0.0   0.1   0:00.25 systemd+
 20045 hasnaa     20   0    6084    5168   3496 S   0.0   0.1   0:00.02 bash
 22382 root        20   0    6080    5152   3460 S   0.0   0.1   0:00.04 bash
 21875 hasnaa     20   0    6084    5120   3448 S   0.0   0.1   0:00.03 bash
 26067 root        20   0    6080    5116   3444 S   0.0   0.1   0:00.03 bash
   370 root        20   0    6076    5092   3388 S   0.0   0.1   0:00.11 bash
 20320 root        20   0    6080    5076   3380 S   0.0   0.1   0:00.05 bash
   443 root        20   0    6120    4932   3372 S   0.0   0.1   0:00.00 bash
  124 message+    20   0    8704    4884   4168 S   0.0   0.1   0:00.42 dbus-dae+
  371 root        20   0    7472    4696   3788 S   0.0   0.1   0:00.01 login
 21874 root        20   0    7628    4252   3696 S   0.0   0.1   0:00.00 su
 20036 root        20   0    7628    4224   3664 S   0.0   0.1   0:00.00 su
 26278 root        20   0    7920    3852   3144 R   0.0   0.1   0:00.17 top
 20040 hasnaa     20   0   21672    3600    12 S   0.0   0.1   0:00.00 (sd-pam)
   438 root        20   0  103504    3516    16 S   0.0   0.1   0:00.00 (sd-pam)
   215 root        20   0    4780    3260   3024 S   0.0   0.1   0:00.11 subiquit+

```

15- Save this config duration for reuse when top is restarted, Exit the top display  
Shift+w

```

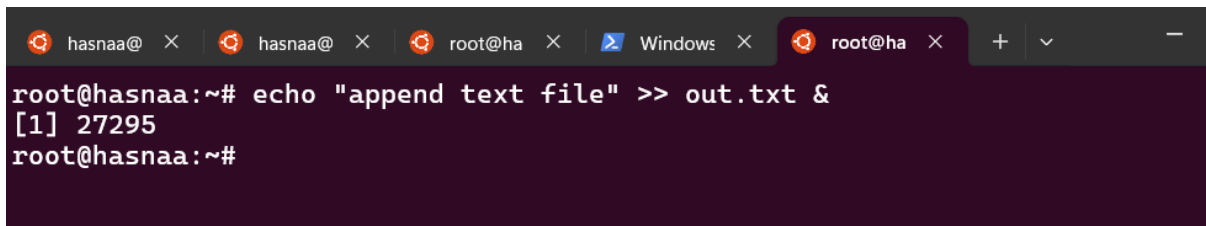
top - 14:24:50 up 1:31, 1 user, load average: 0.04, 0.01, 0.00
Tasks: 51 total, 1 running, 50 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.2 us, 0.1 sy, 0.0 ni, 99.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3856.1 total, 2318.5 free, 553.8 used, 983.8 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used, 3065.3 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR  S  %CPU  %MEM   TIME+ COMMAND
  352 root        20   0   820128   83400  22524 S   0.3   2.1   0:07.70 python3.+
  151 root        20   0  1763672   41476  19544 S   0.0   1.1   0:01.27 snapd
  472 root        20   0    44236   37656  10268 S   0.7   1.0   0:34.19 python3
  238 root        20   0   107220   21208  13100 S   0.0   0.5   0:00.12 unattend+
  988 root        20   0   292996   20548  17644 S   0.0   0.5   0:00.18 packagek+
   43 root        19  -1    64128   19620  18556 S   0.0   0.5   0:00.45 systemd+
  146 root        20   0    30100   19028  10240 S   0.0   0.5   0:00.20 networkd+
  106 systemd+    20   0   25532   12620   8424 S   0.0   0.3   0:00.40 systemd+
    1 root        20   0   184440  11316   8256 S   0.7   0.3   1:00.03 systemd
  437 root        20   0   17028    9672   8096 S   0.0   0.2   0:00.12 systemd
 20039 hasnaa     20   0   16924    8808   7348 S   0.0   0.2   0:00.06 systemd
   993 root        20   0  234496    8700   6028 S   0.0   0.2   0:00.10 polkitd
  158 root        20   0   15556    7640   6600 S   0.0   0.2   0:00.39 systemd+
  148 syslog     20   0   222400    7244   4436 S   0.0   0.2   0:00.07 rsyslogd
   66 root        20   0   21960    5800   4440 S   0.0   0.1   0:00.25 systemd+
 20045 hasnaa     20   0    6084    5168   3496 S   0.0   0.1   0:00.02 bash
 22382 root        20   0    6080    5152   3460 S   0.0   0.1   0:00.04 bash
 21875 hasnaa     20   0    6084    5120   3448 S   0.0   0.1   0:00.03 bash
 26067 hasnaa     20   0    6080    5116   3444 S   0.0   0.1   0:00.03 bash
   370 root        20   0    6076    5092   3388 S   0.0   0.1   0:00.11 bash
 20320 root        20   0    6080    5076   3380 S   0.0   0.1   0:00.05 bash
   443 root        20   0    6120    4932   3372 S   0.0   0.1   0:00.00 bash
  124 message+    20   0    8704    4884   4168 S   0.0   0.1   0:00.42 dbus-dae+
  371 root        20   0    7472    4696   3788 S   0.0   0.1   0:00.01 login
 21874 root        20   0    7628    4252   3696 S   0.0   0.1   0:00.00 su
 20036 root        20   0    7628    4224   3664 S   0.0   0.1   0:00.00 su
 26278 root        20   0    7920    3852   3144 R   0.0   0.1   0:00.21 top
 20040 hasnaa     20   0   21672    3600    12 S   0.0   0.1   0:00.00 (sd-pam)
   438 root        20   0  103504    3516    16 S   0.0   0.1   0:00.00 (sd-pam)
   215 root        20   0    4780    3260   3024 S   0.0   0.1   0:00.11 subiquit+

```

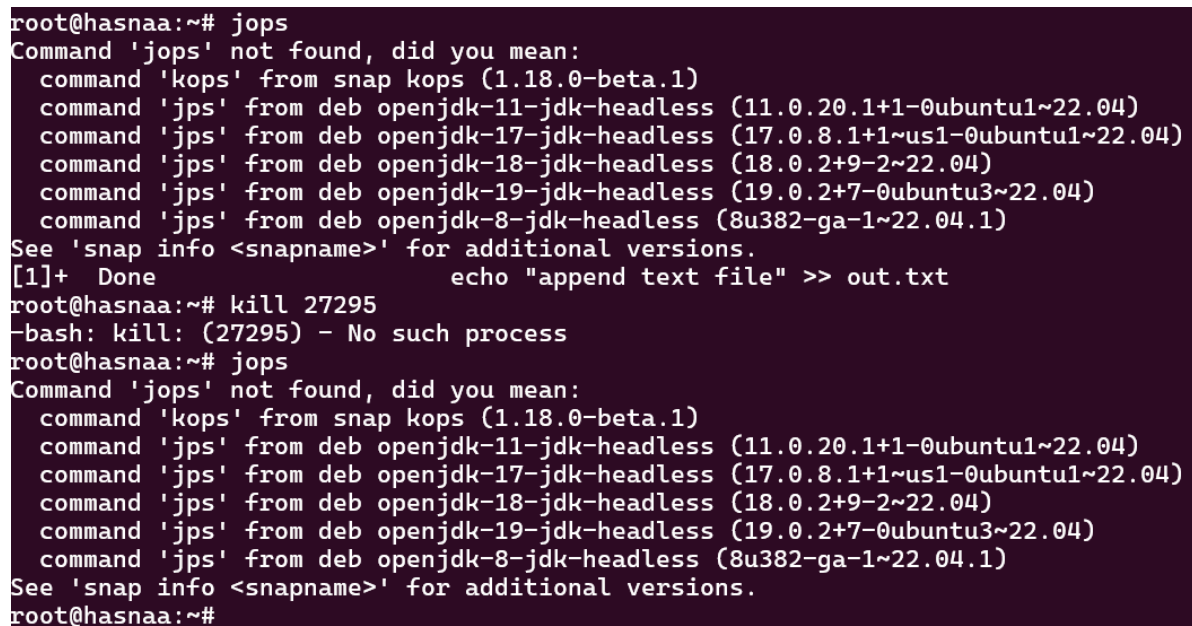


16- Open terminal window, start one process that append text to a n output file and put it in the background

A terminal window with a dark purple background. The window title bar shows several tabs: 'hasnaa@', 'hasnaa@', 'root@ha', 'Windows', and 'root@ha'. The terminal content shows the command 'echo "append text file" >> out.txt &' being executed, followed by the prompt '[1] 27295' and the shell returning to the root@hasnaa:~# prompt.

```
root@hasnaa:~# echo "append text file" >> out.txt &
[1] 27295
root@hasnaa:~#
```

17- kill the running process in the background, and make sure its stopped by command

A terminal window with a dark purple background. The terminal content shows the user attempting to run 'jops', which is not found. Then they run 'jps' which lists several Java processes. They then run 'kill 27295' which fails because the process is not found. Finally, they run 'jops' again, which also fails. The terminal content is as follows:

```
root@hasnaa:~# jops
Command 'jops' not found, did you mean:
  command 'kops' from snap kops (1.18.0-beta.1)
  command 'jps' from deb openjdk-11-jdk-headless (11.0.20.1+1-0ubuntu1~22.04)
  command 'jps' from deb openjdk-17-jdk-headless (17.0.8.1+1~us1-0ubuntu1~22.04)
  command 'jps' from deb openjdk-18-jdk-headless (18.0.2+9-2~22.04)
  command 'jps' from deb openjdk-19-jdk-headless (19.0.2+7-0ubuntu3~22.04)
  command 'jps' from deb openjdk-8-jdk-headless (8u382-ga-1~22.04.1)
See 'snap info <snapname>' for additional versions.
[1]+  Done                  echo "append text file" >> out.txt
root@hasnaa:~# kill 27295
-bash: kill: (27295) - No such process
root@hasnaa:~# jops
Command 'jops' not found, did you mean:
  command 'kops' from snap kops (1.18.0-beta.1)
  command 'jps' from deb openjdk-11-jdk-headless (11.0.20.1+1-0ubuntu1~22.04)
  command 'jps' from deb openjdk-17-jdk-headless (17.0.8.1+1~us1-0ubuntu1~22.04)
  command 'jps' from deb openjdk-18-jdk-headless (18.0.2+9-2~22.04)
  command 'jps' from deb openjdk-19-jdk-headless (19.0.2+7-0ubuntu3~22.04)
  command 'jps' from deb openjdk-8-jdk-headless (8u382-ga-1~22.04.1)
See 'snap info <snapname>' for additional versions.
root@hasnaa:~#
```