

create users called itiusers1, itiusers2

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls /home
mahmoud
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo adduser itiusers1
Adding user `itiusers1' ...
Adding new group `itiusers1' (1002) ...
Adding new user `itiusers1' (1002) with group `itiusers1' ...
Creating home directory `/home/itiusers1' ...
Copying files from `/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for itiusers1
Enter the new value, or press ENTER for the default
    Full Name []: ITI user 1
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n]
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls /home
itiusers1 mahmoud
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo useradd itiusers2
```

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ tail /etc/passwd
geoclue:x:123:130:./var/lib/geoclue:/usr/sbin/nologin
pulse:x:124:131:PulseAudio daemon,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:125:65534:./run/gnome-initial-setup:/bin/false
hplip:x:126:7:HPLIP system user,,:/run/hplip:/bin/false
gdm:x:127:133:Gnome Display Manager:/var/lib/gdm3:/bin/false
mahmoud:x:1000:1000:Mahmoud,,:/home/mahmoud:/bin/bash
mahmoudtest:x:1001:1001:mahmoud:/home/mahmoudtest:/bin/sh
fwupd-refresh:x:128:136:fwupd-refresh user,,:/run/systemd:/usr/sbin/nologin
itiusers1:x:1002:1002:ITI user 1,,:/home/itiusers1:/bin/bash
itiusers2:x:1003:1003:./home/itiusers2:/bin/sh
```

create group called os\_team

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo groupadd os_team
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ tail /etc/group
pulse-access:x:132:
gdm:x:133:
lxd:x:134:mahmoud
mahmoud:x:1000:
sambashare:x:135:mahmoud
mahmoudtest:x:1001:
fwupd-refresh:x:136:
itiusers1:x:1002:
itiusers2:x:1003:
os_team:x:1004:
```

create directory called os\_team\_workspace

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ mkdir os_team_workspace
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls
iti-0  os_team_workspace
mahmoud@mahmoud-Virtual-Machine:~/Desktop$
```

assign os\_team group to the directory os\_team\_workspace and change mode to setgid (hint use sudo)

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ll
total 28
drwxr-xr-x  4 mahmoud mahmoud  4096 14:13 15 فير ./
drwxr-x--- 18 mahmoud mahmoud  4096 14:04 15 فير ../
drwxrwxr-x  2 mahmoud mahmoud  4096 14:17  8 فير iti-0/
drwxrwxr-x  2 mahmoud mahmoud  4096 14:13 15 فير os_team_workspace/
-rw-----  1 mahmoud mahmoud 12288 13:34  5 فير .swp
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ chgrp os_team os_team_workspace
chgrp: changing group of 'os_team_workspace': Operation not permitted
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo !!
sudo chgrp os_team os_team_workspace
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ll
total 28
drwxr-xr-x  4 mahmoud mahmoud  4096 14:13 15 فير ./
drwxr-x--- 18 mahmoud mahmoud  4096 14:04 15 فير ../
drwxrwxr-x  2 mahmoud mahmoud  4096 14:17  8 فير iti-0/
drwxrwxr-x  2 mahmoud os_team  4096 14:13 15 فير os_team_workspace/
-rw-----  1 mahmoud mahmoud 12288 13:34  5 فير .swp
```

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo chmod g+s os_team_workspace/
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls -l os_team_workspace/
total 0
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls -l
total 8
drwxrwxr-x 2 mahmoud mahmoud 4096 14:17  8 فير iti-0
drwxrwsr-x 2 mahmoud os_team 4096 14:13 15 فير os_team_workspace
mahmoud@mahmoud-Virtual-Machine:~/Desktop$
```

add users itituser1 and itituser2 to os\_team group

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo usermod -a -G os_team itituser1
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ sudo usermod -a -G os_team itituser2
```

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ groups itituser1
itituser1 : itituser1 os_team
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ groups itituser2
itituser2 : itituser2 os_team
```

list directory permissions and send screenshot.

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ls -ld os_team_workspace/
drwxrwsr-x 2 mahmoud os_team 4096 14:13 15 فير os_team_workspace/
```

send screenshot of all processes in tree mod

```
oraxi@mahmoud-Virtual-Machine:~/Desktop$ pstree
systemd--ModemManager--2*[{ModemManager}]
--NetworkManager--2*[{NetworkManager}]
--accounts-daemon--2*[{accounts-daemon}]
--acpid
--apache2--2*[{apache2}--26*[{apache2}]]
--avahi-daemon--avahi-daemon
--colord--2*[{colord}]
--cron
--cups-browsed--2*[{cups-browsed}]
--cupsd
--dbus-daemon
--gdm3--gdm-session-wor--gdm-x-session--Xorg--[{Xorg}]
--gnome-session-b--2*[{gnome-session-b}]
--2*[{gdm-x-session}]
--2*[{gdm-session-wor}]
--2*[{gdm3}]
--gnome-keyring-d--3*[{gnome-keyring-d}]
--irqbalance--[{irqbalance}]
--2*[{kerneloops}]
--networkd-dispat
--packagekitd--2*[{packagekitd}]
--polkitd--2*[{polkitd}]
--power-profiles--2*[{power-profiles-}]
--rsyslogd--3*[{rsyslogd}]
--rtkit-daemon--2*[{rtkit-daemon}]
--snapd--10*[{snapd}]
--switcheroo-cont--2*[{switcheroo-cont}]
--systemd--(sd-pam)
--at-spi-bus-laun--dbus-daemon
--3*[{at-spi-bus-laun}]
--at-spi2-registr--2*[{at-spi2-registr}]
--dbus-daemon
--dconf-service--2*[{dconf-service}]
--evolution-addre--5*[{evolution-addre}]
--evolution-calen--11*[{evolution-calen}]
--evolution-sourc--3*[{evolution-sourc}]
--2*[{gjs}--6*[{gjs}]]
--gnome-keyring-d--2*[{gnome-keyring-d}]
--gnome-session-b--evolution-alarm--5*[{evolution-alarm}]
--gsd-disk-utilit--2*[{gsd-disk-utilit}]
--update-notifier--3*[{update-notifier}]
--3*[{gnome-session-b}]
--gnome-session-c--[{gnome-session-c}]
--gnome-shell--gjs--7*[{gjs}]
--17*[{gnome-shell}]
--gnome-shell-cal--5*[{gnome-shell-cal}]
--gnome-terminal--gnome-terminal--3*[{gnome-terminal-}]
--gnome-terminal--bash--pstree
--4*[{gnome-terminal-}]
--goa-daemon--3*[{goa-daemon}]
--goa-identity-se--2*[{goa-identity-se}]
--gsd-a11y-settin--3*[{gsd-a11y-settin}]
--gsd-color--3*[{gsd-color}]
--gsd-datetime--3*[{gsd-datetime}]
--gsd-housekeepin--3*[{gsd-housekeepin}]
--gsd-keyboard--3*[{gsd-keyboard}]
--gsd-media-keys--4*[{gsd-media-keys}]
--gsd-power--3*[{gsd-power}]
--gsd-print-notif--2*[{gsd-print-notif}]
--gsd-printer--2*[{gsd-printer}]
--gsd-rfkill--2*[{gsd-rfkill}]
--gsd-screensaver--2*[{gsd-screensaver}]
--gsd-sharing--3*[{gsd-sharing}]
--gsd-smartcard--3*[{gsd-smartcard}]
--gsd-sound--3*[{gsd-sound}]
--gsd-wacom--2*[{gsd-wacom}]
--gsd-xsettings--3*[{gsd-xsettings}]
--gvfs-afc-volume--3*[{gvfs-afc-volume}]
--gvfs-goa-volume--2*[{gvfs-goa-volume}]
--gvfs-gphoto2-vo--2*[{gvfs-gphoto2-vo}]
--gvfs-mtp-volume--2*[{gvfs-mtp-volume}]
--gvfs-udisks2-vo--3*[{gvfs-udisks2-vo}]
--gvfsd--gvfsd-trash--2*[{gvfsd-trash}]
```

execute command `tail -f /var/log/syslog`

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ tail -f /var/log/syslog
Feb 15 14:13:54 mahmoud-Virtual-Machine dbus-daemon[895]: [session uid=1000 pid=895] Activating via systemd: service name 'org.freedesktop.Tracker3.Miner.Extract' unit='tracker-extract-3.service' requested by ':1.10' (uid=1000 pid=997 comm="/usr/libexec/tracker-miner-fs-3" label="unconfined")
Feb 15 14:13:54 mahmoud-Virtual-Machine systemd[864]: Starting Tracker metadata extractor...
Feb 15 14:13:55 mahmoud-Virtual-Machine dbus-daemon[895]: [session uid=1000 pid=895] Successfully activated service 'org.freedesktop.Tracker3.Miner.Extract'
Feb 15 14:13:55 mahmoud-Virtual-Machine systemd[864]: Started Tracker metadata extractor.
Feb 15 14:17:01 mahmoud-Virtual-Machine CRON[4661]: (root) CMD ( cd / && run-parts --report /etc/cron.hourly)
Feb 15 14:30:01 mahmoud-Virtual-Machine CRON[4811]: (root) CMD ([ -x /etc/init.d/anacron ] && if [ ! -d /run/systemd/system ]; then /usr/sbin/invoke-rc.d anacron start >/dev/null; fi)
Feb 15 14:31:12 mahmoud-Virtual-Machine systemd[1]: Started Run anacron jobs.
Feb 15 14:31:12 mahmoud-Virtual-Machine systemd[1]: anacron.service: Deactivated successfully.
Feb 15 14:31:12 mahmoud-Virtual-Machine anacron[4815]: Anacron 2.3 started on 2023-02-15
Feb 15 14:31:12 mahmoud-Virtual-Machine anacron[4815]: Normal exit (0 jobs run)
^Z
[1]+  Stopped                  tail -f /var/log/syslog
```

find the process id PID of tail process then kill it using `kill` command

```
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ps
  PID TTY          TIME CMD
 2273 pts/0        00:00:00 bash
 4820 pts/0        00:00:00 tail
 4821 pts/0        00:00:00 ps
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ kill 4820
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ps
  PID TTY          TIME CMD
 2273 pts/0        00:00:00 bash
 4820 pts/0        00:00:00 tail
 4822 pts/0        00:00:00 ps
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ kill -9 4820
mahmoud@mahmoud-Virtual-Machine:~/Desktop$ ps
  PID TTY          TIME CMD
 2273 pts/0        00:00:00 bash
 4823 pts/0        00:00:00 ps
[1]+  Killed                  tail -f /var/log/syslog
mahmoud@mahmoud-Virtual-Machine:~/Desktop$
```