

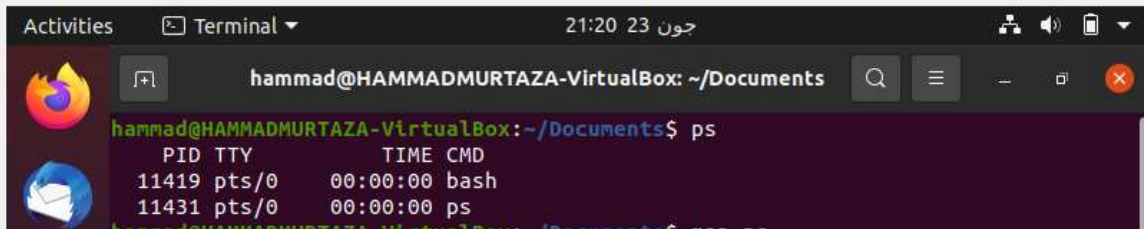
HAMMAD MURTAZA

SID: 11146

CID: 107241

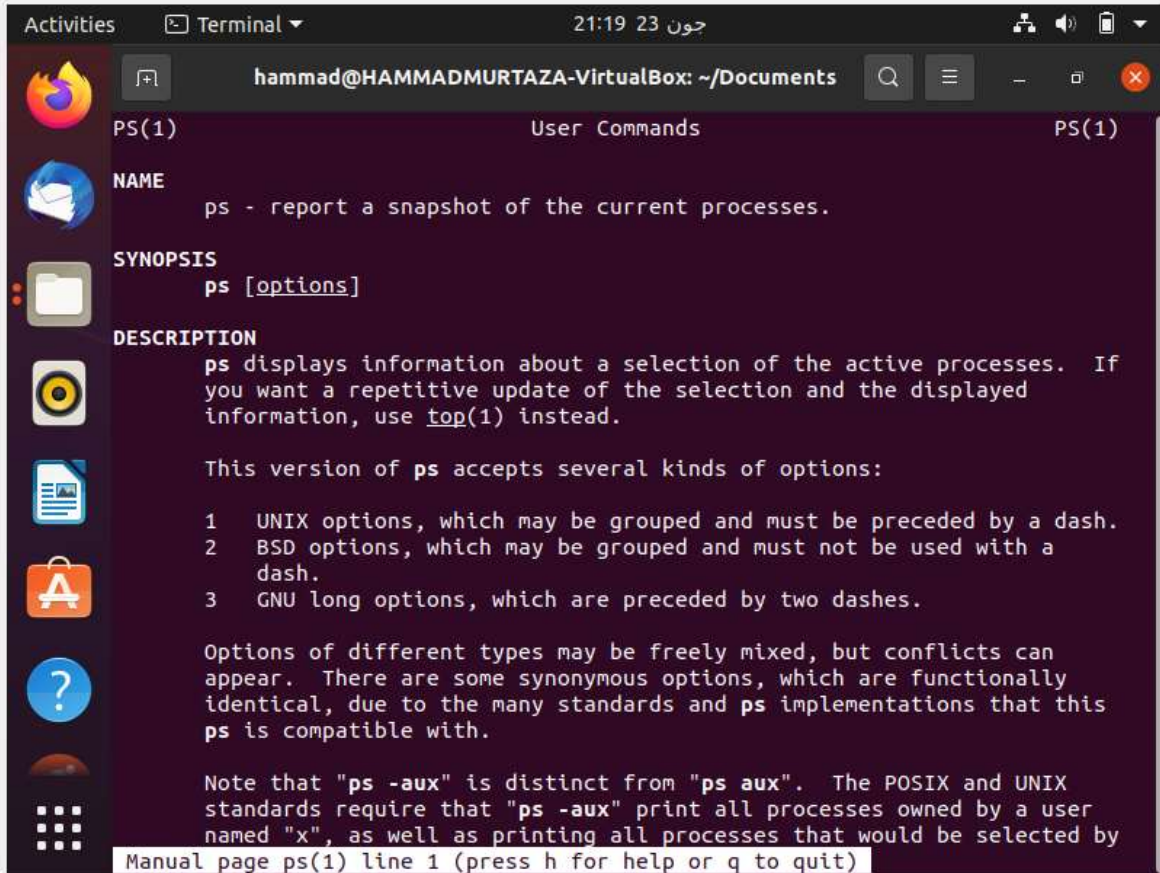
OS LAB 7

Q1:



A terminal window titled "hammad@HAMMADMURTAZA-VirtualBox: ~/Documents" showing the output of the `ps` command. The output is a table with columns: PID, TTY, TIME, and CMD. It lists two processes: a bash shell (PID 11419) and the `ps` command itself (PID 11431).

```
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ ps
  PID TTY          TIME CMD
 11419 pts/0    00:00:00 bash
 11431 pts/0    00:00:00 ps
```



A terminal window titled "hammad@HAMMADMURTAZA-VirtualBox: ~/Documents" showing the manual page for the `ps` command. The window is titled "PS(1) User Commands PS(1)". It includes sections for NAME, SYNOPSIS, DESCRIPTION, and a list of options. The DESCRIPTION section explains that `ps` displays information about active processes and mentions the `top` command for real-time updates. The options section lists three types: UNIX, BSD, and GNU long options. A note at the bottom explains the difference between `ps -aux` and `ps aux`.

```
PS(1)                                User Commands                                PS(1)
NAME
    ps - report a snapshot of the current processes.

SYNOPSIS
    ps [options]

DESCRIPTION
    ps displays information about a selection of the active processes.  If
    you want a repetitive update of the selection and the displayed
    information, use top(1) instead.

    This version of ps accepts several kinds of options:

    1  UNIX options, which may be grouped and must be preceded by a dash.
    2  BSD options, which may be grouped and must not be used with a
        dash.
    3  GNU long options, which are preceded by two dashes.

    Options of different types may be freely mixed, but conflicts can
    appear.  There are some synonymous options, which are functionally
    identical, due to the many standards and ps implementations that this
    ps is compatible with.

    Note that "ps -aux" is distinct from "ps aux".  The POSIX and UNIX
    standards require that "ps -aux" print all processes owned by a user
    named "x", as well as printing all processes that would be selected by

Manual page ps(1) line 1 (press h for help or q to quit)
```

Q2:

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hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

for more details see ps(1).

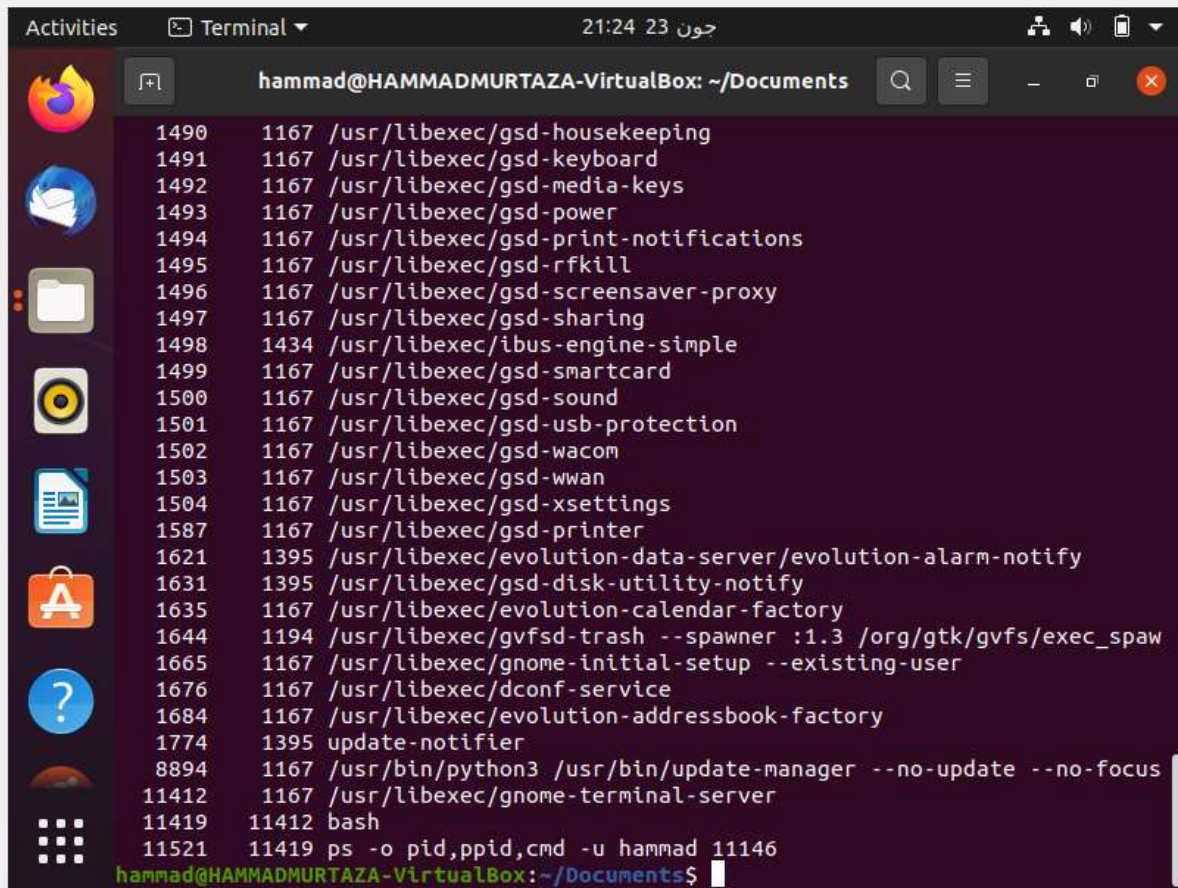
```
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ ps -o pid,ppid,cmd -u hammad 11146
```

PID	PPID	CMD
1167	1	/lib/systemd/systemd --user
1168	1167	(sd-pam)
1174	1167	/usr/bin/pulseaudio --daemonize=no --log-target=journal
1176	1167	/usr/libexec/tracker-miner-fs
1178	1167	/usr/bin/dbus-daemon --session --address=systemd: --nofork --no
1194	1167	/usr/libexec/gvfsd
1199	1167	/usr/libexec/gvfsd-fuse /run/user/1000/gvfs -f -o big_writes
1200	1167	/usr/libexec/gvfs-udisks2-volume-monitor
1203	1	/usr/bin/gnome-keyring-daemon --daemonize --login
1216	1167	/usr/libexec/gvfs-gphoto2-volume-monitor
1220	1167	/usr/libexec/gvfs-afc-volume-monitor
1226	1167	/usr/libexec/gvfs-goa-volume-monitor
1230	1167	/usr/libexec/goa-daemon
1232	1158	/usr/lib/gdm3/gdm-x-session --run-script env GNOME_SHELL_SESSIO
1234	1232	/usr/lib/xorg/Xorg vt2 -displayfd 3 -auth /run/user/1000/gdm/Xa
1244	1167	/usr/libexec/goa-identity-service
1246	1167	/usr/libexec/gvfs-mtp-volume-monitor
1271	1232	/usr/libexec/gnome-session-binary --systemd --systemd --session
1317	1167	/usr/libexec/gvfsd-metadata
1343	1271	/usr/bin/ssh-agent /usr/bin/im-launch env GNOME_SHELL_SESSION_M
1365	1167	/usr/libexec/at-spi-bus-launcher
1370	1365	/usr/bin/dbus-daemon --config-file=/usr/share/defaults/at-spi2/
1386	1167	/usr/libexec/gnome-session-ctl --monitor
1395	1167	/usr/libexec/gnome-session-binary --systemd-service --session=u
1409	1167	/usr/bin/gnome-shell
1434	1409	ibus-daemon --panel disable --xim
1438	1434	/usr/libexec/ibus-dconf

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```
1409 1167 /usr/bin/gnome-shell
1434 1409 ibus-daemon --panel disable --xim
1438 1434 /usr/libexec/ibus-dconf
1439 1434 /usr/libexec/ibus-extension-gtk3
1443 1167 /usr/libexec/ibus-x11 --kill-daemon
1446 1167 /usr/libexec/ibus-portal
1454 1167 /usr/libexec/at-spi2-registryd --use-gnome-session
1460 1167 /usr/libexec/xdg-permission-store
1462 1167 /usr/libexec/gnome-shell-calendar-server
1476 1167 /usr/libexec/evolution-source-registry
1483 1167 /usr/bin/nautilus --gapplication-service
1485 1167 /usr/bin/gjs /usr/share/gnome-shell/org.gnome.Shell.Notificatio
1487 1167 /usr/libexec/gsd-a11y-settings
1488 1167 /usr/libexec/gsd-color
1489 1167 /usr/libexec/gsd-datetime
1490 1167 /usr/libexec/gsd-housekeeping
1491 1167 /usr/libexec/gsd-keyboard
1492 1167 /usr/libexec/gsd-media-keys
1493 1167 /usr/libexec/gsd-power
1494 1167 /usr/libexec/gsd-print-notifications
1495 1167 /usr/libexec/gsd-rfkill
1496 1167 /usr/libexec/gsd-screensaver-proxy
1497 1167 /usr/libexec/gsd-sharing
1498 1434 /usr/libexec/ibus-engine-simple
1499 1167 /usr/libexec/gsd-smartcard
1500 1167 /usr/libexec/gsd-sound
1501 1167 /usr/libexec/gsd-usb-protection
1502 1167 /usr/libexec/gsd-wacom
1503 1167 /usr/libexec/gsd-wwan
```

The screenshot shows a terminal window titled "Terminal" with the user "hammad@HAMMADMURTAZA-VirtualBox" and the directory "~/Documents". The terminal displays a list of processes and their paths, sorted by PID. The processes are listed in two columns, with the PID on the left and the path on the right. The paths are mostly under /usr/libexec and /usr/bin. The terminal also shows the output of the 'ps' command at the bottom.

```
1490 1167 /usr/libexec/gsd-housekeeping
1491 1167 /usr/libexec/gsd-keyboard
1492 1167 /usr/libexec/gsd-media-keys
1493 1167 /usr/libexec/gsd-power
1494 1167 /usr/libexec/gsd-print-notifications
1495 1167 /usr/libexec/gsd-rfkill
1496 1167 /usr/libexec/gsd-screensaver-proxy
1497 1167 /usr/libexec/gsd-sharing
1498 1434 /usr/libexec/ibus-engine-simple
1499 1167 /usr/libexec/gsd-smartcard
1500 1167 /usr/libexec/gsd-sound
1501 1167 /usr/libexec/gsd-usb-protection
1502 1167 /usr/libexec/gsd-wacom
1503 1167 /usr/libexec/gsd-wwan
1504 1167 /usr/libexec/gsd-xsettings
1587 1167 /usr/libexec/gsd-printer
1621 1395 /usr/libexec/evolution-data-server/evolution-alarm-notify
1631 1395 /usr/libexec/gsd-disk-utility-notify
1635 1167 /usr/libexec/evolution-calendar-factory
1644 1194 /usr/libexec/gvfsd-trash --spawner :1.3 /org/gtk/gvfs/exec_spaw
1665 1167 /usr/libexec/gnome-initial-setup --existing-user
1676 1167 /usr/libexec/dconf-service
1684 1167 /usr/libexec/evolution-addressbook-factory
1774 1395 update-notifier
8894 1167 /usr/bin/python3 /usr/bin/update-manager --no-update --no-focus
11412 1167 /usr/libexec/gnome-terminal-server
11419 11412 bash
11521 11419 ps -o pid,ppid,cmd -u hammad 11146
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$
```

Q3:



hammad@HAMMADMURTAZA-VirtualBox: ~/Documents



For more details see ps(1).

```
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ ps -H -O pid,ppid,cmd -u hammad
```

PID	PID	PPID	CMD	S	TTY	TIME	COMMAND
1232	1232	1158	/usr/lib/gdm3/gdm-x-session	S	tty2	00:00:00	/usr/li
1234	1234	1232	/usr/lib/xorg/Xorg vt2 -d	S	tty2	00:02:24	/usr/
1271	1271	1232	/usr/libexec/gnome-sessio	S	tty2	00:00:00	/usr/
1343	1343	1271	/usr/bin/ssh-agent	/usr	S ?	00:00:00	/us
1203	1203	1	/usr/bin/gnome-keyring-daem	S	?	00:00:00	/usr/bi
1167	1167	1	/lib/systemd/systemd --user	S	?	00:00:10	/lib/sy
1168	1168	1167	(sd-pam)	S	?	00:00:00	(sd-p
1174	1174	1167	/usr/bin/pulseaudio --dae	S	?	00:00:01	/usr/
1176	1176	1167	/usr/libexec/tracker-mine	S	?	00:00:01	/usr/
1178	1178	1167	/usr/bin/dbus-daemon --se	S	?	00:00:03	/usr/
1194	1194	1167	/usr/libexec/gvfsd	S	?	00:00:00	/usr/
1644	1644	1194	/usr/libexec/gvfsd-tras	S	?	00:00:00	/us
1199	1199	1167	/usr/libexec/gvfsd-fuse /	S	?	00:00:00	/usr/
1200	1200	1167	/usr/libexec/gvfs-udisks2	S	?	00:00:00	/usr/
1216	1216	1167	/usr/libexec/gvfs-gphoto2	S	?	00:00:00	/usr/
1220	1220	1167	/usr/libexec/gvfs-afc-vol	S	?	00:00:03	/usr/
1226	1226	1167	/usr/libexec/gvfs-goa-vol	S	?	00:00:00	/usr/
1230	1230	1167	/usr/libexec/goa-daemon	S	?	00:00:00	/usr/
1244	1244	1167	/usr/libexec/goa-identity	S	?	00:00:00	/usr/
1246	1246	1167	/usr/libexec/gvfs-mtp-vol	S	?	00:00:00	/usr/
1317	1317	1167	/usr/libexec/gvfsd-metada	S	?	00:00:00	/usr/
1365	1365	1167	/usr/libexec/at-spi-bus-l	S	?	00:00:00	/usr/
1370	1370	1365	/usr/bin/dbus-daemon --	S	?	00:00:00	/us
1386	1386	1167	/usr/libexec/gnome-sessio	S	?	00:00:00	/usr/
1395	1395	1167	/usr/libexec/gnome-sessio	S	?	00:00:00	/usr/
1621	1621	1395	/usr/libexec/evolution-	S	?	00:00:00	/us

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1393	1393	1167	/usr/libexec/gnome-session	S ?	00:00:00	/usr/
1621	1621	1395	/usr/libexec/evolution-	S ?	00:00:00	/us
1631	1631	1395	/usr/libexec/gsd-disk-u	S ?	00:00:00	/us
1774	1774	1395	update-notifier	S ?	00:00:02	upd
1409	1409	1167	/usr/bin/gnome-shell	R ?	00:07:13	/usr/
1434	1434	1409	ibus-daemon --panel dis	S ?	00:00:00	ibu
1438	1438	1434	/usr/libexec/ibus-dco	S ?	00:00:00	/
1439	1439	1434	/usr/libexec/ibus-ext	S ?	00:00:01	/
1498	1498	1434	/usr/libexec/ibus-eng	S ?	00:00:00	/
1443	1443	1167	/usr/libexec/ibus-x11 --k	S ?	00:00:00	/usr/
1446	1446	1167	/usr/libexec/ibus-portal	S ?	00:00:00	/usr/
1454	1454	1167	/usr/libexec/at-spi2-regi	S ?	00:00:00	/usr/
1460	1460	1167	/usr/libexec/xdg-permissi	S ?	00:00:00	/usr/
1462	1462	1167	/usr/libexec/gnome-shell-	S ?	00:00:00	/usr/
1476	1476	1167	/usr/libexec/evolution-so	S ?	00:00:00	/usr/
1483	1483	1167	/usr/bin/nautilus --gapp	S ?	00:00:24	/usr/
1485	1485	1167	/usr/bin/gjs /usr/share/g	S ?	00:00:00	/usr/
1487	1487	1167	/usr/libexec/gsd-a11y-set	S ?	00:00:00	/usr/
1488	1488	1167	/usr/libexec/gsd-color	S ?	00:00:00	/usr/
1489	1489	1167	/usr/libexec/gsd-datetime	S ?	00:00:00	/usr/
1490	1490	1167	/usr/libexec/gsd-housekee	S ?	00:00:01	/usr/
1491	1491	1167	/usr/libexec/gsd-keyboard	S ?	00:00:00	/usr/
1492	1492	1167	/usr/libexec/gsd-media-ke	S ?	00:00:00	/usr/
1493	1493	1167	/usr/libexec/gsd-power	S ?	00:00:00	/usr/
1494	1494	1167	/usr/libexec/gsd-print-no	S ?	00:00:00	/usr/
1495	1495	1167	/usr/libexec/gsd-rfkill	S ?	00:00:00	/usr/
1496	1496	1167	/usr/libexec/gsd-screensa	S ?	00:00:00	/usr/
1497	1497	1167	/usr/libexec/gsd-sharing	S ?	00:00:00	/usr/
1499	1499	1167	/usr/libexec/gsd-smartcar	S ?	00:00:00	/usr/
1500	1500	1167	/usr/libexec/gsd-sound	S ?	00:00:00	/usr/


```
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1483 1483 1167 /usr/bin/nautilus --gapl S ? 00:00:24 /usr/
1485 1485 1167 /usr/bin/gjs /usr/share/g S ? 00:00:00 /usr/
1487 1487 1167 /usr/libexec/gsd-a11y-set S ? 00:00:00 /usr/
1488 1488 1167 /usr/libexec/gsd-color S ? 00:00:00 /usr/
1489 1489 1167 /usr/libexec/gsd-datetime S ? 00:00:00 /usr/
1490 1490 1167 /usr/libexec/gsd-housekee S ? 00:00:01 /usr/
1491 1491 1167 /usr/libexec/gsd-keyboard S ? 00:00:00 /usr/
1492 1492 1167 /usr/libexec/gsd-media-ke S ? 00:00:00 /usr/
1493 1493 1167 /usr/libexec/gsd-power S ? 00:00:00 /usr/
1494 1494 1167 /usr/libexec/gsd-print-no S ? 00:00:00 /usr/
1495 1495 1167 /usr/libexec/gsd-rfkill S ? 00:00:00 /usr/
1496 1496 1167 /usr/libexec/gsd-screensa S ? 00:00:00 /usr/
1497 1497 1167 /usr/libexec/gsd-sharing S ? 00:00:00 /usr/
1499 1499 1167 /usr/libexec/gsd-smartcar S ? 00:00:00 /usr/
1500 1500 1167 /usr/libexec/gsd-sound S ? 00:00:00 /usr/
1501 1501 1167 /usr/libexec/gsd-usb-prot S ? 00:00:00 /usr/
1502 1502 1167 /usr/libexec/gsd-wacom S ? 00:00:00 /usr/
1503 1503 1167 /usr/libexec/gsd-wwan S ? 00:00:00 /usr/
1504 1504 1167 /usr/libexec/gsd-xsetting S ? 00:00:00 /usr/
1587 1587 1167 /usr/libexec/gsd-printer S ? 00:00:00 /usr/
1635 1635 1167 /usr/libexec/evolution-ca S ? 00:00:00 /usr/
1665 1665 1167 /usr/libexec/gnome-initia S ? 00:00:02 /usr/
1676 1676 1167 /usr/libexec/dconf-servic S ? 00:00:00 /usr/
1684 1684 1167 /usr/libexec/evolution-ad S ? 00:00:00 /usr/
8894 8894 1167 /usr/bin/python3 /usr/bin S ? 00:00:17 /usr/
11412 11412 1167 /usr/libexec/gnome-termin S ? 00:00:04 /usr/
11419 11419 11412 bash S pts/0 00:00:00 bas
11535 11535 11419 ps -H -O pid,ppid,cmd R pts/0 00:00:00 p

hammad@HAMMADMURTAZA-VirtualBox:~/Documents$
```

Q4:

Ps –A COMMAND:

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hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

```
11535 11535 11419 ps -H -O pid,ppid,cmd R pts/0 00:00:00 p
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$ ps -A
```

PID	TTY	TIME	CMD
1	?	00:00:06	systemd
2	?	00:00:00	kthreadd
3	?	00:00:00	rcu_gp
4	?	00:00:00	rcu_par_gp
6	?	00:00:00	kworker/0:0H-kblockd
9	?	00:00:00	mm_percpu_wq
10	?	00:00:01	ksoftirqd/0
11	?	00:00:04	rcu_sched
12	?	00:00:00	migration/0
13	?	00:00:00	idle_inject/0
14	?	00:00:00	cpuhp/0
15	?	00:00:00	kdevtmpfs
16	?	00:00:00	netns
17	?	00:00:00	rcu_tasks_kthre
18	?	00:00:00	rcu_tasks_rude_
19	?	00:00:00	rcu_tasks_trace
20	?	00:00:00	kauditd
21	?	00:00:00	khungtaskd
22	?	00:00:00	oom_reaper
23	?	00:00:00	writeback
24	?	00:00:00	kcompactd0
25	?	00:00:00	ksmd
26	?	00:00:00	khugepaged
72	?	00:00:00	kintegrityd
73	?	00:00:00	kblockd

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hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

```
73 ? 00:00:00 kblockd
74 ? 00:00:00 blkcg_punt_bio
75 ? 00:00:00 tpm_dev_wq
76 ? 00:00:00 ata_sff
77 ? 00:00:00 md
78 ? 00:00:00 edac-poller
79 ? 00:00:00 devfreq_wq
80 ? 00:00:00 watchdogd
82 ? 00:00:00 pm_wq
84 ? 00:00:04 kswapd0
85 ? 00:00:00 ecryptfs-kthrea
87 ? 00:00:00 kthrotld
88 ? 00:00:00 acpi_thermal_pm
89 ? 00:00:00 scsi_eh_0
90 ? 00:00:00 scsi_tmf_0
91 ? 00:00:00 scsi_eh_1
92 ? 00:00:00 scsi_tmf_1
94 ? 00:00:00 vfio-irqfd-clea
96 ? 00:00:00 ipv6_addrconf
105 ? 00:00:00 kstrp
108 ? 00:00:00 zswap-shrink
109 ? 00:00:00 kworker/u3:0
114 ? 00:00:00 charger_manager
115 ? 00:00:05 kworker/0:1H-kblockd
151 ? 00:00:00 scsi_eh_2
152 ? 00:00:00 scsi_tmf_2
174 ? 00:00:00 jbd2/sda5-8
175 ? 00:00:00 ext4-rsv-conver
214 ? 00:00:01 systemd-journal
```

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hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

```
175 ? 00:00:00 ext4-rsv-conver
214 ? 00:00:01 systemd-journal
237 ? 00:00:02 irq/18-vmwgfx
238 ? 00:00:00 ttm_swap
242 ? 00:00:00 loop0
243 ? 00:00:00 loop1
245 ? 00:00:00 loop2
247 ? 00:00:00 loop3
248 ? 00:00:00 loop4
251 ? 00:00:00 loop5
254 ? 00:00:00 systemd-udev
255 ? 00:00:00 loop6
260 ? 00:00:00 loop8
305 ? 00:00:00 cryptd
476 ? 00:00:00 systemd-resolve
477 ? 00:00:00 systemd-timesyn
510 ? 00:00:01 accounts-daemon
511 ? 00:00:01 acpid
514 ? 00:00:00 avahi-daemon
515 ? 00:00:00 cron
517 ? 00:00:04 dbus-daemon
518 ? 00:00:44 NetworkManager
525 ? 00:00:00 networkd-dispat
526 ? 00:00:01 polkitd
528 ? 00:00:00 rsyslogd
542 ? 00:00:00 switcheroo-cont
543 ? 00:00:00 systemd-logind
547 ? 00:00:00 udisksd
548 ? 00:00:00 wpa_supplicant
```


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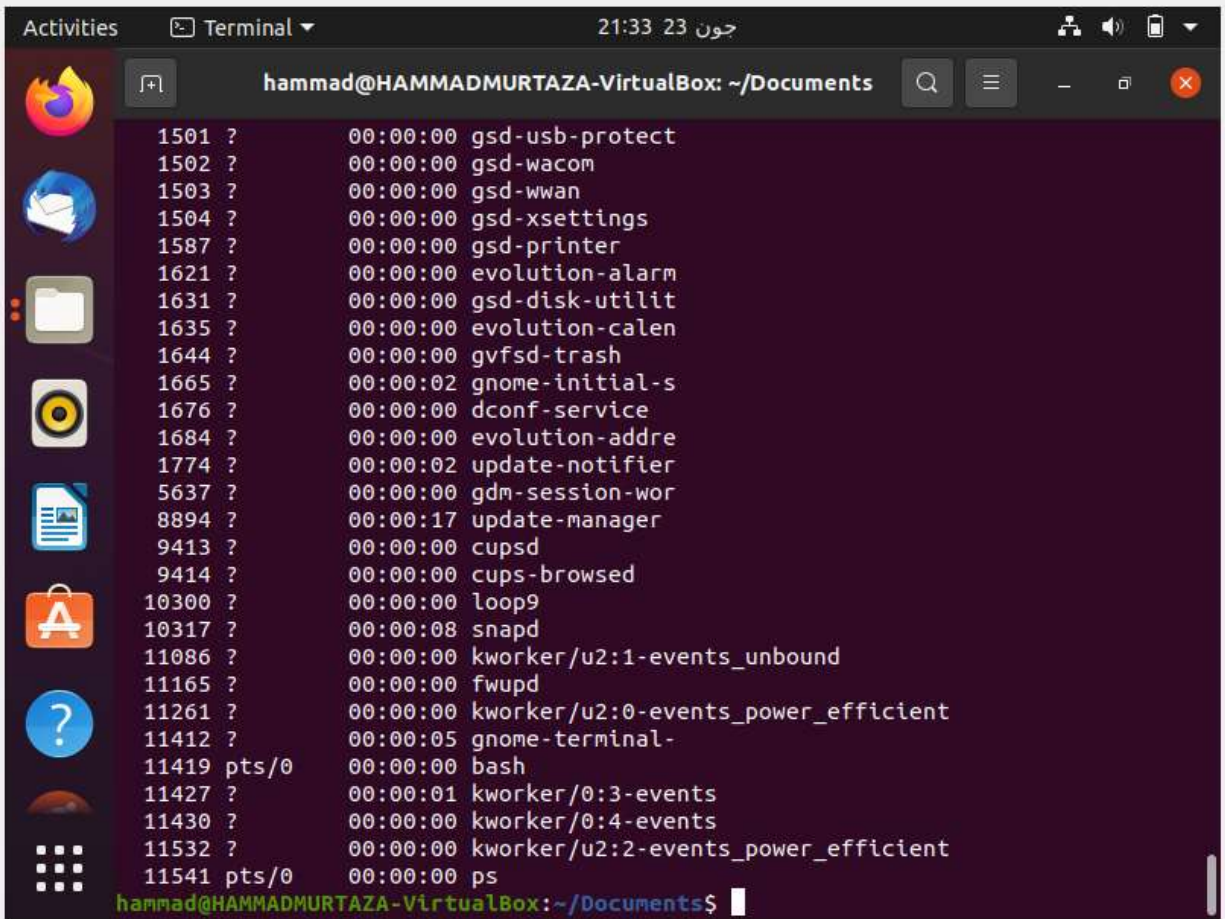
hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

```
543 ? 00:00:00 systemd-logind
547 ? 00:00:00 udisksd
548 ? 00:00:00 wpa_supplicant
556 ? 00:00:00 avahi-daemon
612 ? 00:00:00 ModemManager
619 ? 00:00:00 unattended-upgr
640 ? 00:00:00 gdm3
657 ? 00:00:00 gdm-session-wor <defunct>
677 ? 00:00:00 whoopsie
681 ? 00:00:01 kerneloops
683 ? 00:00:01 kerneloops
776 ? 00:00:00 rtkit-daemon
879 ? 00:00:01 upowerd
1136 ? 00:00:00 colord
1158 ? 00:00:00 gdm-session-wor
1167 ? 00:00:11 systemd
1168 ? 00:00:00 (sd-pam)
1174 ? 00:00:01 pulseaudio
1176 ? 00:00:01 tracker-miner-f
1178 ? 00:00:03 dbus-daemon
1194 ? 00:00:00 gvfsd
1199 ? 00:00:00 gvfsd-fuse
1200 ? 00:00:00 gvfs-udisks2-vo
1203 ? 00:00:00 gnome-keyring-d
1216 ? 00:00:00 gvfs-gphoto2-vo
1220 ? 00:00:03 gvfs-afc-volume
1226 ? 00:00:00 gvfs-goa-volume
1230 ? 00:00:00 goa-daemon
1232 ttv2 00:00:00 qdm-x-session
```

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hammad@HAMMADMURTAZA-VirtualBox: ~/Documents

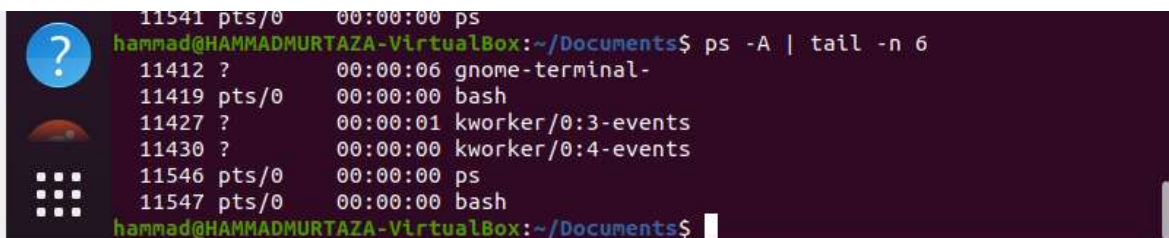
```
1244 ? 00:00:00 goa-identity-se
1246 ? 00:00:00 gvfs-mtp-volume
1271 tty2 00:00:00 gnome-session-b
1317 ? 00:00:00 gvfsd-metadata
1343 ? 00:00:00 ssh-agent
1365 ? 00:00:00 at-spi-bus-laun
1370 ? 00:00:00 dbus-daemon
1386 ? 00:00:00 gnome-session-c
1395 ? 00:00:00 gnome-session-b
1409 ? 00:07:16 gnome-shell
1434 ? 00:00:00 ibus-daemon
1438 ? 00:00:00 ibus-dconf
1439 ? 00:00:01 ibus-extension-
1443 ? 00:00:00 ibus-x11
1446 ? 00:00:00 ibus-portal
1454 ? 00:00:00 at-spi2-registr
1460 ? 00:00:00 xdg-permission-
1462 ? 00:00:00 gnome-shell-cal
1476 ? 00:00:00 evolution-sourc
1483 ? 00:00:24 nautilus
1485 ? 00:00:00 gjs
1487 ? 00:00:00 gsd-a11y-settin
1488 ? 00:00:00 gsd-color
1489 ? 00:00:00 gsd-datetime
1490 ? 00:00:01 gsd-housekeepin
1491 ? 00:00:00 gsd-keyboard
1492 ? 00:00:00 gsd-media-keys
1493 ? 00:00:00 gsd-power
1494 ? 00:00:00 gsd-print-notif
```



A terminal window titled "hammad@HAMMADMURTAZA-VirtualBox: ~/Documents" showing the output of the 'ps' command. The output lists various system processes with their PIDs, PPIDs, and command names. The processes include gsd-usb-protect, gsd-wacom, gsd-wwan, gsd-xsettings, gsd-printer, evolution-alarm, gsd-disk-utilit, evolution-calen, gvfsd-trash, gnome-initial-s, dconf-service, evolution-addre, update-notifier, gdm-session-wor, update-manager, cupsd, cups-browsed, loop9, snapd, kworker/u2:1-events_unbound, fwupd, kworker/u2:0-events_power_efficient, gnome-terminal-, pts/0 bash, kworker/0:3-events, kworker/0:4-events, kworker/u2:2-events_power_efficient, and pts/0 ps. The terminal window has a dark background and a sidebar with application icons on the left.

```
1501 ?      00:00:00 gsd-usb-protect
1502 ?      00:00:00 gsd-wacom
1503 ?      00:00:00 gsd-wwan
1504 ?      00:00:00 gsd-xsettings
1587 ?      00:00:00 gsd-printer
1621 ?      00:00:00 evolution-alarm
1631 ?      00:00:00 gsd-disk-utilit
1635 ?      00:00:00 evolution-calen
1644 ?      00:00:00 gvfsd-trash
1665 ?      00:00:02 gnome-initial-s
1676 ?      00:00:00 dconf-service
1684 ?      00:00:00 evolution-addre
1774 ?      00:00:02 update-notifier
5637 ?      00:00:00 gdm-session-wor
8894 ?      00:00:17 update-manager
9413 ?      00:00:00 cupsd
9414 ?      00:00:00 cups-browsed
10300 ?     00:00:00 loop9
10317 ?     00:00:08 snapd
11086 ?     00:00:00 kworker/u2:1-events_unbound
11165 ?     00:00:00 fwupd
11261 ?     00:00:00 kworker/u2:0-events_power_efficient
11412 ?     00:00:05 gnome-terminal-
11419 pts/0     00:00:00 bash
11427 ?     00:00:01 kworker/0:3-events
11430 ?     00:00:00 kworker/0:4-events
11532 ?     00:00:00 kworker/u2:2-events_power_efficient
11541 pts/0     00:00:00 ps
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$
```

Now using tail command obtain the last six line output from ps-A command:



A terminal window showing the output of the 'ps -A | tail -n 6' command. The output displays the last six lines of the process list, including the 'ps' command itself. The processes shown are gnome-terminal-, pts/0 bash, kworker/0:3-events, kworker/0:4-events, ps, and pts/0 bash. The terminal window has a dark background and a sidebar with application icons on the left.

```
11541 pts/0     00:00:00 ps
11412 ?      00:00:06 gnome-terminal-
11419 pts/0     00:00:00 bash
11427 ?      00:00:01 kworker/0:3-events
11430 ?      00:00:00 kworker/0:4-events
11546 pts/0     00:00:00 ps
11547 pts/0     00:00:00 bash
hammad@HAMMADMURTAZA-VirtualBox:~/Documents$
```