

ITIM

PRACTICAL - 3

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Tasks :

For this particular practical you need to perform the below mention tasks:

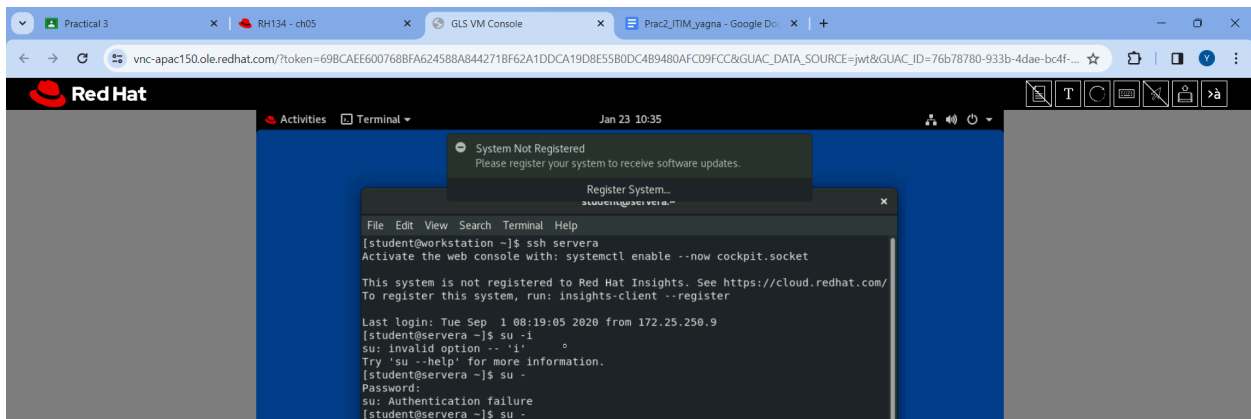
1) You need to create a partition on a new storage device and format it with an ext4 file system, configure it to be mounted at boot, and mount it for use. (The mount point should be a directory named after you)

2) You need to delete the created partition and ensure that the changes are persistent, so that when the device is rebooted, the created partition is removed.

Steps :

Task 1 :

- Login to server a using **ssh servera** and enter into root mode



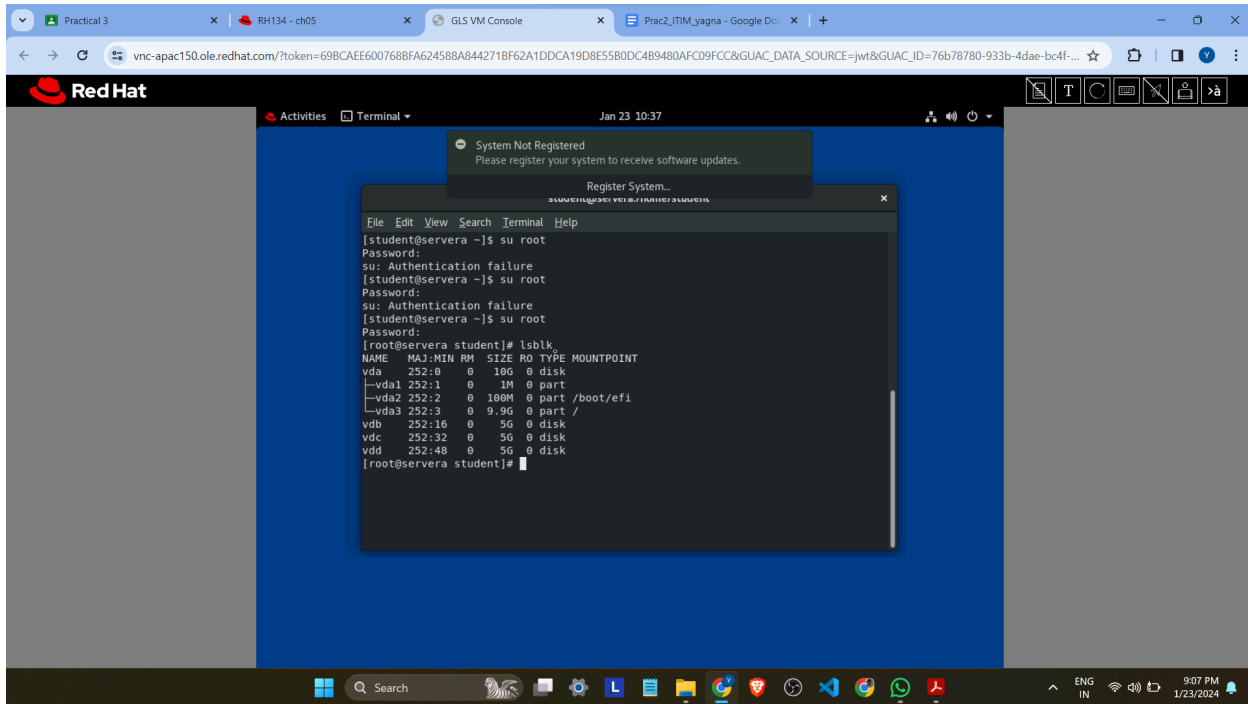
The screenshot shows a Red Hat VM console window. The terminal output is as follows:

```
[student@workstation ~]$ ssh servera
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Tue Sep 1 08:19:05 2020 from 172.25.250.9
[student@servera ~]$ su -i
su: invalid option -- 'i'
Try 'su --help' for more information.
[student@servera ~]$ su -
Password:
su: Authentication failure
[student@servera ~]$ su -
```

- The command "lsblk" is used to list the block devices attached to the system, providing information about their sizes, mount points and other attributes. Use **lsblk** to check list of block device attached



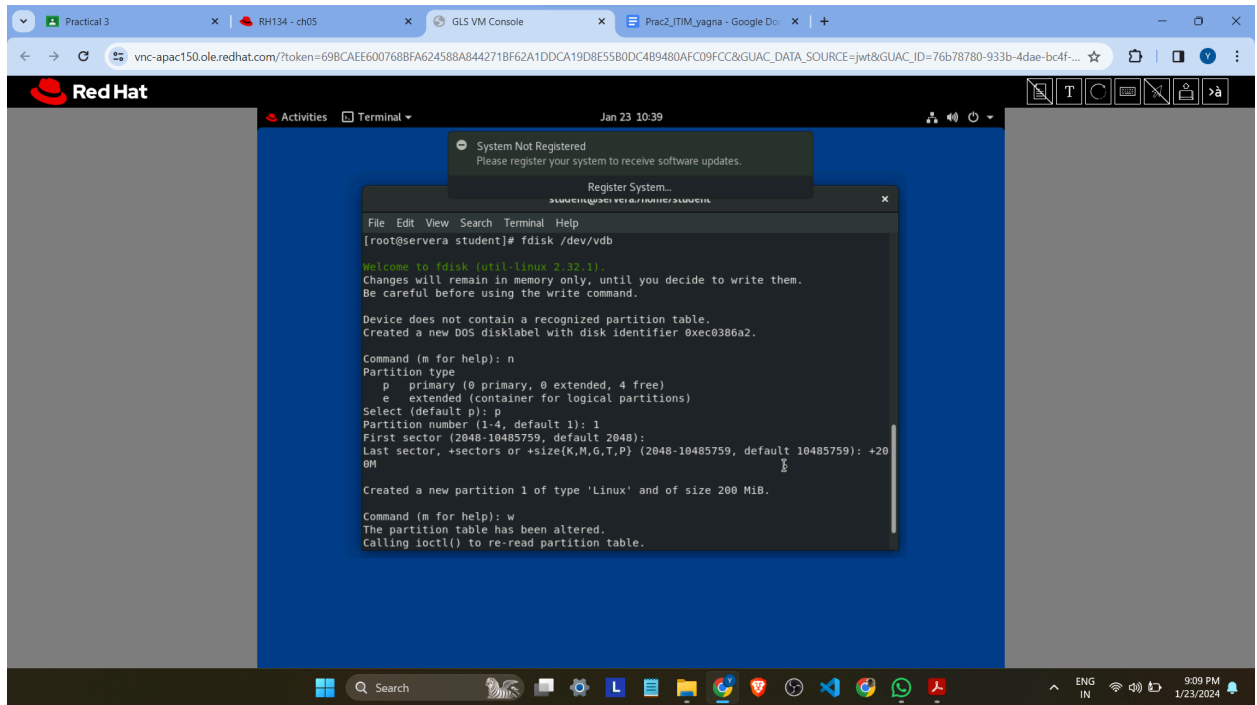
The screenshot shows a Red Hat VM console window. At the top, there's a notification bar with the Red Hat logo and the text "System Not Registered. Please register your system to receive software updates." Below this, a "Register System..." dialog box is open. The main terminal window shows a user attempting to switch to root using 'su root' three times, all failing due to authentication. Finally, the user runs 'lsblk' as root, which displays a table of block devices.

```
[student@servera ~]$ su root
Password:
su: Authentication failure
[student@servera ~]$ su root
Password:
su: Authentication failure
[student@servera ~]$ su root
Password:
[root@servera student]# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
vda	252:0	0	10G	0	disk	
└─vda1	252:1	0	1M	0	part	
└─vda2	252:2	0	100M	0	part	/boot/efi
└─vda3	252:3	0	9.9G	0	part	/
vdb	252:16	0	5G	0	disk	
vdc	252:32	0	5G	0	disk	
vdd	252:48	0	5G	0	disk	

```
[root@servera student]#
```

- Now we will be creating a new partition in vdb using command `fdisk /dev/vdb`. The command "fdisk/dev/vdb" is used to interactively manage and partition the block device "/dev/vdb" on a linux system using linux utility.



The screenshot shows a Red Hat VM console window. At the top, there's a browser address bar with a URL starting with 'vnc-apac150.ole.redhat.com'. Below the browser, the Red Hat logo is visible. The main window is a terminal with a blue background. A 'System Not Registered' dialog box is open, asking to register the system. In the terminal, the command `fdisk /dev/vdb` has been executed. The output shows the fdisk utility's welcome message and the creation of a new DOS disklabel. The user has selected 'n' for a new partition, 'p' for primary, and '1' for the partition number. The first sector is 2048 and the last sector is 10485759, resulting in a 200 MiB partition. The partition table has been altered and the changes have been written to the disk.

```
[root@servera student]# fdisk /dev/vdb

Welcome to fdisk (util-linux 2.32.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0xec0386a2.

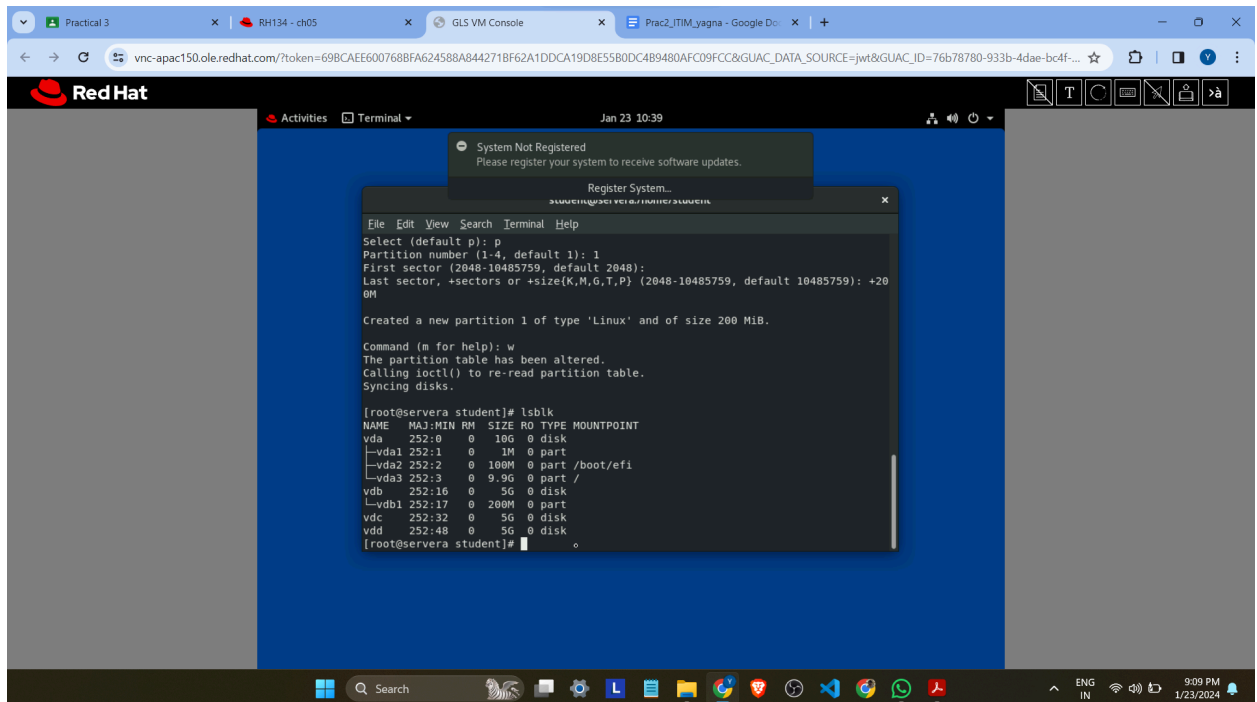
Command (m for help): n
Partition type
  p   primary (0 primary, 0 extended, 4 free)
  e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-10485759, default 2048):
Last sector, +sectors or +size(K,M,G,T,P) (2048-10485759, default 10485759): +200M

Created a new partition 1 of type 'Linux' and of size 200 MiB.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
```

m is used for help in commands, n is used for creating new partitions, d is used to delete partition. w is used for savings changes and exit, q exit without saving changes.

- To check the whether the partition is created or not we will used **lsblk** again. We can see the vdb1 partition

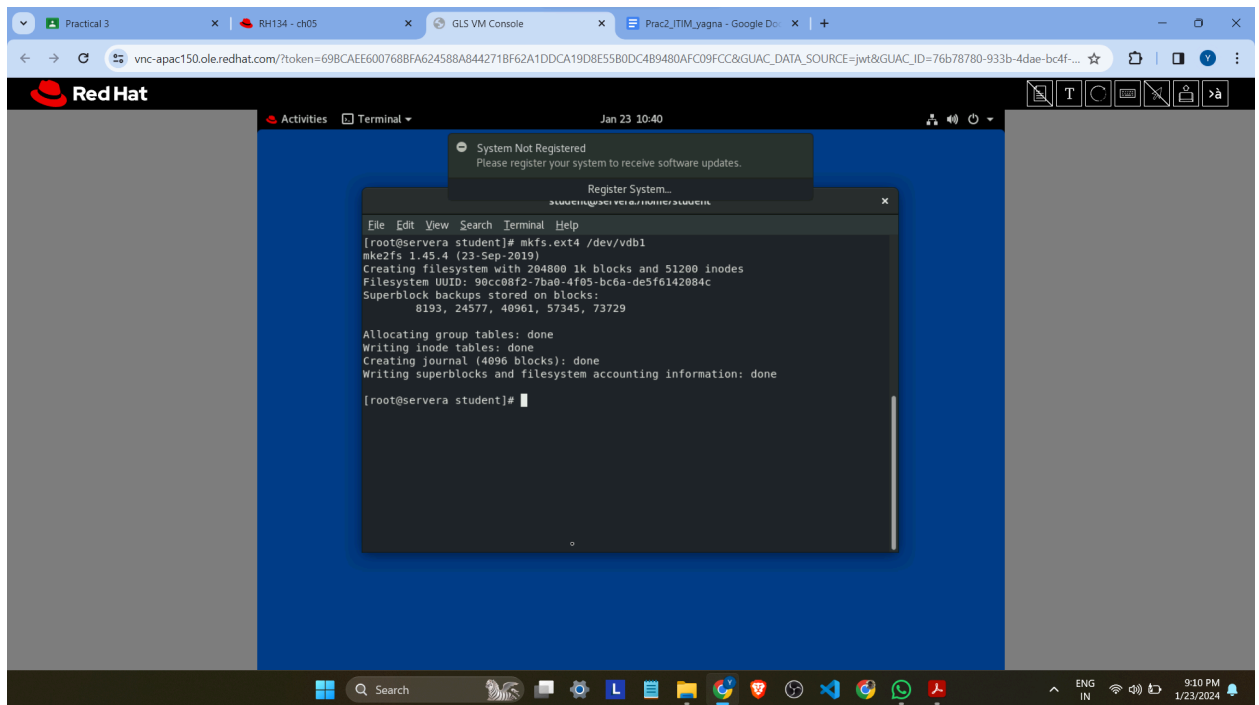


The screenshot shows a Red Hat virtual machine interface. A terminal window is open, displaying the following commands and output:

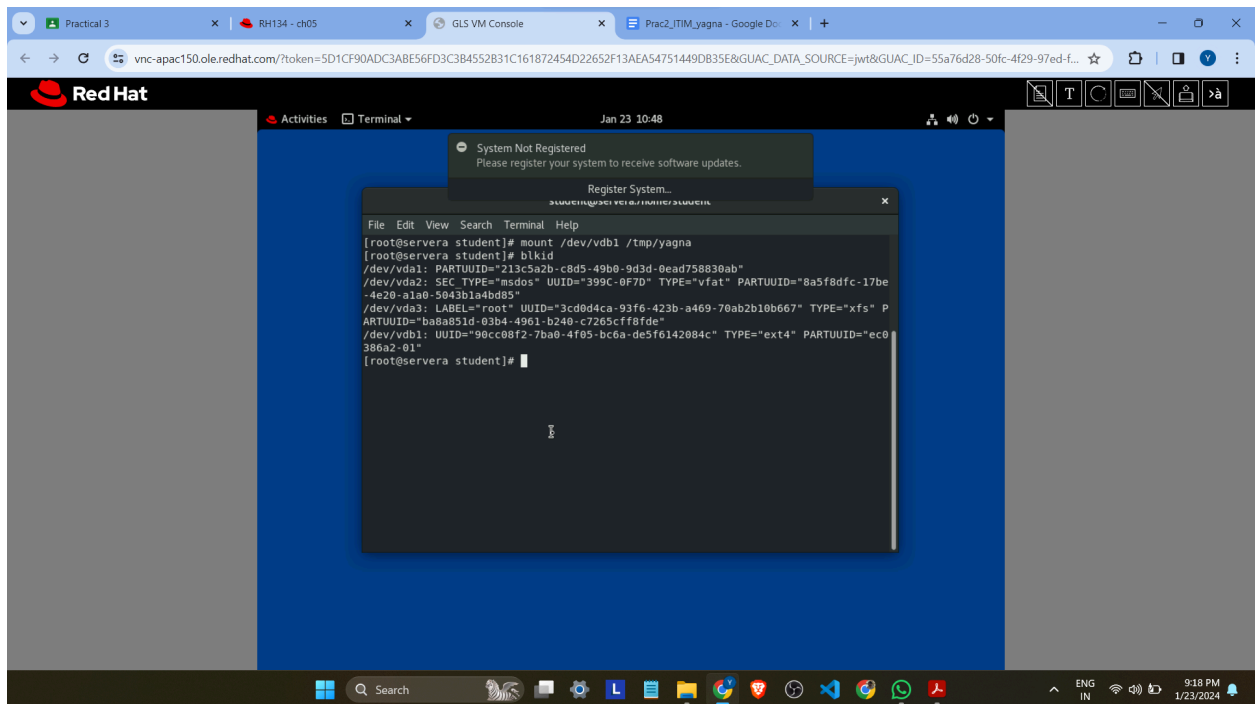
```
[root@servera student]# lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
vda 252:0 0 10G 0 disk
├─vda1 252:1 0 1M 0 part
├─vda2 252:2 0 100M 0 part /boot/efi
├─vda3 252:3 0 9.9G 0 part /
vdb 252:16 0 5G 0 disk
├─vdb1 252:17 0 200M 0 part
vdc 252:32 0 5G 0 disk
vdd 252:48 0 5G 0 disk
[root@servera student]#
```

The output of the `lsblk` command shows a new partition `vdb1` of size 200M, type 'part', and mountpoint `/`.

- Now we will assign the file system to the partition we created using **mkfs.ext4 /dev/vdb1**. The command "`mkfs.ext4 /dev/vdb1`" is used to create the ext4 file system on the partition `/dev/vdb1` on linux system.

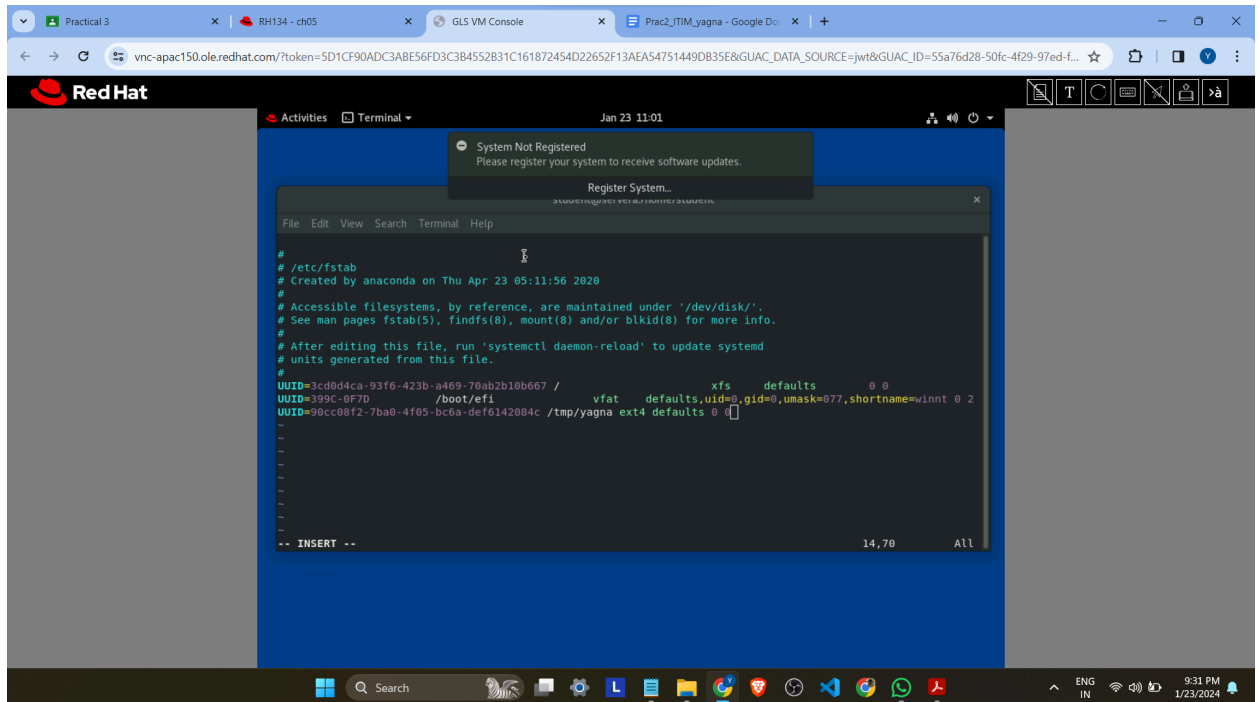


- Now we will provide a mount point to the partition by creating a directory named `/tmp/yagna`. And mounting using `mount /dev/vdb1 /tmp/yagna`. The command "`mount /dev/vdb1 /tmp/yagna`" is used to mount the file system located on the block device `/dev/vdb1` onto the directory `/tmp/yagna` on a Linux system, allowing access to the contents of that file system in that directory.



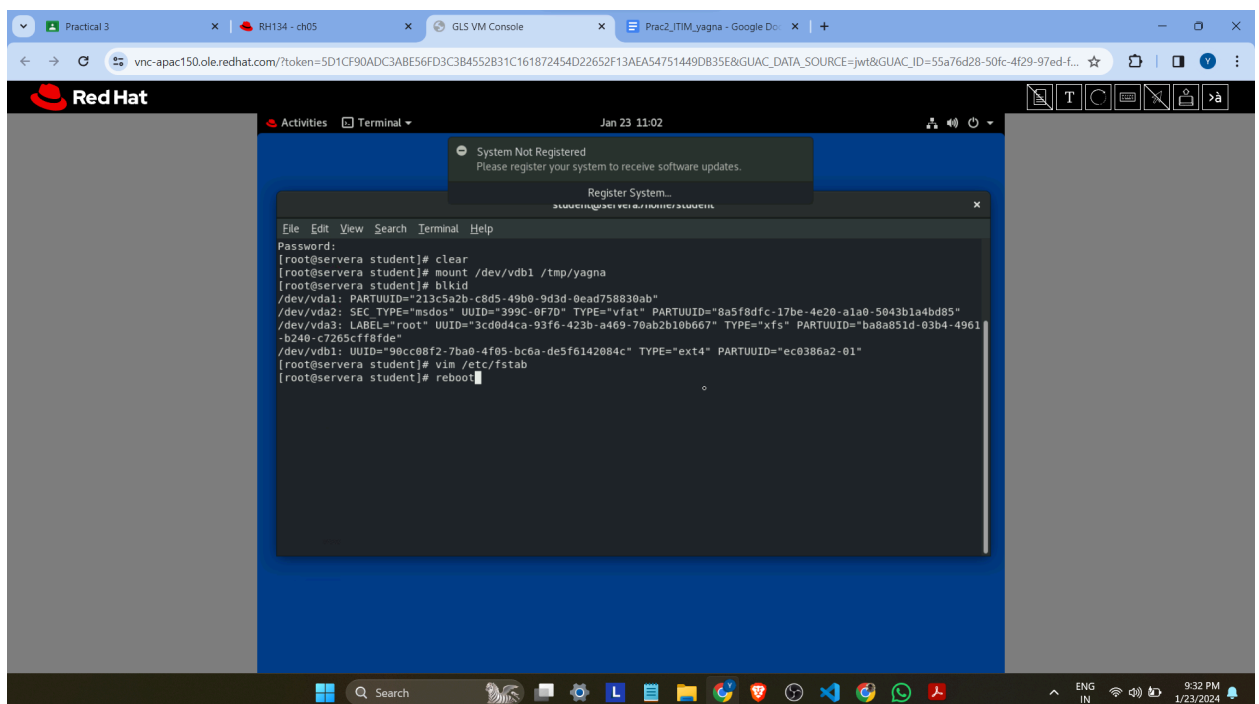
Then use **blkid** to display information about available block devices and their associated attributes, such as UUIDs (Universally Unique Identifiers) and file system types, on a Linux system.

- Now we have to add configuration of /dev/vdb1 into /etc/fstab file.
vim /etc/fstab this command is used to make changes in “/etc/fstab” file. Now write the UUID of /dev/vdb1 that we got using blkid



```
# /etc/fstab
# Created by anaconda on Thu Apr 23 05:11:56 2020
#
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=3cd0d4ca-93f6-423b-a469-70ab2b10b607 / xfs defaults 0 0
UUID=399c-0f70 /boot/efi vfat defaults,uid=0,gid=0,umask=077,shortname=winnt 0 2
UUID=90cc08f2-7ba0-4f05-bc6a-def6142084c /tmp/yagna ext4 defaults 0 0
```

Note : reboot the server after changing and saving the file using **reboot**



```
root@servera student]# clear
root@servera student]# mount /dev/vdb1 /tmp/yagna
root@servera student]# blkid
/dev/vda1: PARTUUID="213c5a2b-c8d5-49b0-9d3d-0ead758830ab"
/dev/vda2: SEC_TYPE="msdos" UUID="399c-0f70" TYPE="vfat" PARTUUID="8a5f8dfc-17be-4e20-a1a0-5043b1a4bd85"
/dev/vda3: LABEL="root" UUID="3cd0d4ca-93f6-423b-a469-70ab2b10b607" TYPE="xfs" PARTUUID="ba8a851d-03b4-4961-b240-c7205c1f8fde"
/dev/vdb1: UUID="90cc08f2-7ba0-4f05-bc6a-de5f6142084c" TYPE="ext4" PARTUUID="ec0386a2-01"
root@servera student]# vim /etc/fstab
root@servera student]# reboot
```

- Check if partition is created

The screenshot shows a Red Hat VM console window. At the top, there's a 'System Not Registered' notification. Below it, a 'Register System...' dialog box is open, displaying the following text:

```
File Edit View Search Terminal Help
/dev/vdb1: UUID="5a4ca792-9d7e-42e0-8e02-630e146437fd" TYPE="ext4" PARTUUID="948
b4256-01"
[root@servera ~]# vim /etc/fstab
[root@servera ~]# reboot
Connection to servera closed by remote host.
Connection to servera closed.
[student@workstation ~]$ ssh servera
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Tue Jan 23 11:09:17 2024 from 172.25.250.9
[student@servera ~]$ lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
vda 252:0 0 10G 0 disk
├─vda1 252:1 0 1M 0 part
├─vda2 252:2 0 160M 0 part /boot/efi
├─vda3 252:3 0 9.9G 0 part /
vdb 252:16 0 5G 0 disk
└─vdb1 252:17 0 200M 0 part /tmp/yagna
vdc 252:32 0 5G 0 disk
vdd 252:48 0 5G 0 disk
[student@servera ~]$
```

The terminal output shows the successful execution of the `lsblk` command, listing the disk partitions and their mount points. The system is currently not registered to Red Hat Insights.

Task 2 :- Delete the created partition

The screenshot shows a Red Hat virtual machine console. A terminal window is open, displaying the output of the `lsblk` command. The output lists several disk partitions: `vda`, `vdal`, `vdal2`, `vdal3`, `vdb`, `vdb1`, `vdc`, and `vdd`. The `vdal` partition is highlighted. A "System Not Registered" dialog box is also visible, prompting the user to register the system. The terminal window title is "student@servera ~".

```
[student@servera ~]$ lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
vda   252:0    0  10G  0 disk
├─vdal 252:1    0   1M  0 part
├─vdal2 252:2    0  100M  0 part /boot/efi
├─vdal3 252:3    0   9.9G  0 part /
└─vdb   252:16   0    5G  0 disk
    └─vdb1 252:17   0  200M  0 part /tmp/yagna
vdc   252:32   0    5G  0 disk
vdd   252:48   0    5G  0 disk
[student@servera ~]$ vim /etc/fstab
```

- Get into fstab file using vim /etc/fstab and then remove the uuid that we previously

The screenshot shows a Red Hat VM console with a terminal window open. The terminal is editing the `/etc/fstab` file. The content of the file is as follows:

```
# /etc/fstab
# Created by anaconda on Thu Apr 23 05:11:56 2020
#
# Accessible filesystems, by reference, are maintained under '/dev/disk/'.
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
#
# After editing this file, run 'systemctl daemon-reload' to update systemd
# units generated from this file.
#
UUID=3cd8d4ca-93f6-423b-a469-70ab2b10b667 / xfs defaults 0 0
ts 0 0
UUID=399C-8F7D /boot/efi vfat defaults,uid=0,gid=0,umask=077,shortname=winnt 0 2
sk=077,shortname=winnt 0 2
```

A "Register System" dialog box is overlaid on the terminal, prompting the user to register the system to receive software updates. The background shows the Red Hat logo and a system status message: "System Not Registered. Please register your system to receive software updates."

entered

- Now unmount using `umount /dev/vdb1 /tmp/yagna` (forgot to take ss) and then run `fdisk /dev/vdb` and remove the partition using `d`

```
Script
I  load disk layout from sfdisk script file
O  dump disk layout to sfdisk script file

Save & Exit
w  write table to disk and exit
q  quit without saving changes

Create a new label
g  create a new empty GPT partition table
G  create a new empty SGI (IRIX) partition table
o  create a new empty DOS partition table
s  create a new empty Sun partition table

Command (m for help): d
Selected partition 1
Partition 1 has been deleted.

Command (m for help):
```

