Step-1

First check details about hardisk

```
[root@localhost ~]# fdisk -l
Disk /dev/sda: 30 GiB, 32212254720 bytes, 62914560 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xf085a991

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sda1  *        2048  2050047  2048000 1000M 83 Linux
/dev/sda2        2050048 32770047 30720000 14.7G 83 Linux
/dev/sda3       32770048 36866047  4096000    2G 82 Linux swap / Solaris
[root@localhost ~]#
[root@localhost ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   30G  0 disk
├─sda1   8:1    0 1000M  0 part /boot
├─sda2   8:2    0 14.7G  0 part /
└─sda3   8:3    0    2G  0 part [SWAP]
sr0     11:0    1  6.6G  0 rom  /run/media/root/RHEL-8-0-0-BaseOS-x86_64
[root@localhost ~]#
```

Step-2 Go in to the hardisk and create partition as you required.

```
[root@localhost ~]# fdisk  /dev/sda

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.


Command (m for help): m

Help:

  DOS (MBR)
   a   toggle a bootable flag
   b   edit nested BSD disklabel
   c   toggle the dos compatibility flag

  Generic
   d   delete a partition
   F   list free unpartitioned space
   l   list known partition types
   n   add a new partition
   p   print the partition table
   t   change a partition type
   v   verify the partition table
   i   print information about a partition

  Misc
```

```
   m   print this menu
   u   change display/entry units
   x   extra functionality (experts only)

  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): n
Partition type
   p   primary (3 primary, 0 extended, 1 free)
   e   extended (container for logical partitions)
Select (default e): e

Selected partition 4
First sector (36866048-62914559, default 36866048):
Last sector, +sectors or +size{K,M,G,T,P} (36866048-62914559, default 62914559):

Created a new partition 4 of type 'Extended' and of size 12.4 GiB.

Command (m for help):


Command (m for help):


Command (m for help): p

Disk /dev/sda: 30 GiB, 32212254720 bytes, 62914560 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xf085a991

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sda1  *        2048  2050047  2048000 1000M 83 Linux
/dev/sda2        2050048 32770047 30720000 14.7G 83 Linux
/dev/sda3       32770048 36866047  4096000    2G 82 Linux swap / Solaris
/dev/sda4       36866048 62914559 26048512 12.4G  5 Extended

Command (m for help):


Command (m for help): n
```

```
All primary partitions are in use.
Adding logical partition 5
First sector (36868096-62914559, default 36868096):
Last sector, +sectors or +size{K,M,G,T,P} (36868096-62914559, default 62914559): +2G

Created a new partition 5 of type 'Linux' and of size 2 GiB.

Command (m for help): w
The partition table has been altered.
Failed to add partition 5 to system: Device or resource busy

The kernel still uses the old partitions. The new table will be used at the next reboot.
Syncing disks.

[root@localhost ~]#
```

Step-3 update your partition table without reboot your machine

```
[root@localhost ~]# udevadm   settle     {Support in RHEL-8}

                    OR

[root@localhost ~]# partprobe   /dev/sda    ----------  {Support till RHEL-7}
```

Step-4 Format the partition into ant types of FileSystems- Ext2, Ext3, Ext4 or xfs
OR
Create the Filesystem

```
[root@localhost ~]# mkfs.xfs  /dev/sda5
meta-data=/dev/sda5              isize=512    agcount=4, agsize=131072 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=1, rmapbt=0
         =                       reflink=1
data     =                       bsize=4096   blocks=524288, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0, ftype=1
log      =internal log           bsize=4096   blocks=2560, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
[root@localhost ~]#
```

Step-5 Mount this partition on any directory to store the data ?

First Method:- How to perform temporary mouting ?

```
[root@localhost ~]# mkdir /storage
[root@localhost ~]#
[root@localhost ~]# mount  /dev/sda5   /storage
[root@localhost ~]#
[root@localhost ~]# df  -h
```

```
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        1.9G     0  1.9G   0% /dev
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           1.9G  9.9M  1.9G   1% /run
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2        15G  3.9G   11G  27% /
/dev/sda1       994M  165M  830M  17% /boot
tmpfs           376M   16K  376M   1% /run/user/42
tmpfs           376M  4.6M  372M   2% /run/user/0
/dev/sr0        6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
/dev/sda5       2.0G   47M  2.0G   3% /storage
[root@localhost ~]#
[root@localhost ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   30G  0 disk
├─sda1   8:1    0 1000M  0 part /boot
├─sda2   8:2    0 14.7G  0 part /
├─sda3   8:3    0    2G  0 part [SWAP]
├─sda4   8:4    0    1K  0 part
└─sda5   8:5    0    2G  0 part /storage
sr0     11:0    1  6.6G  0 rom  /run/media/root/RHEL-8-0-0-BaseOS-x86_64
[root@localhost ~]#
```

Second Method:- How to perform permanent mouting ?

```
[root@localhost ~]# vim  /etc/fstab
```

Note:- go in bottom of this file and add this line :-----

```
/dev/sda5                               /storage                xfs     defaults        0 0
```

save and quit from this file..

```
[root@localhost ~]# systemctl   daemon-reload         {Support in RHEL-8}
```

OR

```
[root@localhost ~]# mount  -a       {To activate the mouting points}
```

Step-6   How to Verify this partition ?

```
[root@localhost ~]# df  -h
Filesystem      Size  Used Avail Use% Mounted on
```

```
devtmpfs        1.9G     0  1.9G   0% /dev
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           1.9G  9.9M  1.9G   1% /run
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2        15G  3.9G   11G  27% /
/dev/sda1       994M  165M  830M  17% /boot
tmpfs           376M   16K  376M   1% /run/user/42
tmpfs           376M  4.6M  372M   2% /run/user/0
/dev/sr0        6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
/dev/sda5       2.0G   47M  2.0G   3% /storage
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# du -sh  /storage
0       /storage
[root@localhost ~]# cp -rf   /etc   /storage
[root@localhost ~]#
[root@localhost ~]# du -sh   /etc
29M  /etc
[root@localhost ~]#
[root@localhost ~]# du -sh  /storage
29M  /storage
[root@localhost ~]#
[root@localhost ~]# df  -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        1.9G     0  1.9G   0% /dev
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           1.9G  9.9M  1.9G   1% /run
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2        15G  3.9G   11G  27% /
/dev/sda1       994M  165M  830M  17% /boot
tmpfs           376M   16K  376M   1% /run/user/42
tmpfs           376M  4.6M  372M   2% /run/user/0
/dev/sr0        6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
/dev/sda5       2.0G  100M  1.9G   5% /storage
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# df  -Th
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  1.9G     0  1.9G   0% /dev
tmpfs          tmpfs     1.9G     0  1.9G   0% /dev/shm
tmpfs          tmpfs     1.9G  9.9M  1.9G   1% /run
tmpfs          tmpfs     1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2      xfs        15G  3.9G   11G  27% /
/dev/sda1      xfs       994M  165M  830M  17% /boot
tmpfs          tmpfs     376M   16K  376M   1% /run/user/42
tmpfs          tmpfs     376M  4.6M  372M   2% /run/user/0
/dev/sr0       iso9660   6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
/dev/sda5      xfs       2.0G  100M  1.9G   5% /storage
[root@localhost ~]#


[root@localhost ~]# umount  /storage
[root@localhost ~]#
[root@localhost ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        1.9G     0  1.9G   0% /dev
```

```
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           1.9G  9.9M  1.9G   1% /run
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2        15G  3.9G   11G  27% /
/dev/sda1       994M  165M  830M  17% /boot
tmpfs           376M   16K  376M   1% /run/user/42
tmpfs           376M  4.6M  372M   2% /run/user/0
/dev/sr0        6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
[root@localhost ~]#
[root@localhost ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   30G  0 disk
├─sda1   8:1    0 1000M  0 part /boot
├─sda2   8:2    0 14.7G  0 part /
├─sda3   8:3    0    2G  0 part [SWAP]
├─sda4   8:4    0    1K  0 part
└─sda5   8:5    0    2G  0 part
sr0     11:0    1  6.6G  0 rom  /run/media/root/RHEL-8-0-0-BaseOS-x86_64
[root@localhost ~]#
[root@localhost ~]# mount /dev/sda5  /storage
[root@localhost ~]#
[root@localhost ~]# du -sh  /storage
29M  /storage
[root@localhost ~]# ls /storage
etc
[root@localhost ~]#
```

Step-7 how to mount any partition with Block ID or UUID Concepts ?

```
[root@localhost ~]# blkid
/dev/sda2: UUID="8122cb63-c8c7-4cd2-81be-4b49081bc6dc" TYPE="xfs" PARTUUID="f085a991-02"
/dev/sda1: UUID="1a9e8a07-533d-4f49-b547-4b21e42230b2" TYPE="xfs" PARTUUID="f085a991-01"
/dev/sda3: UUID="362eabfd-9108-40a1-ba82-3fbdeff793ac" TYPE="swap" PARTUUID="f085a991-03"
/dev/sda5: UUID="01c2925f-7716-4810-9243-39838de79b8c" TYPE="xfs" PARTUUID="f085a991-05"
/dev/sr0: UUID="2019-04-04-08-40-23-00" LABEL="RHEL-8-0-0-BaseOS-x86_64" TYPE="iso9660"
PTUUID="0da1aba4" PTTYPE="dos"
[root@localhost ~]#
[root@localhost ~]# blkid    /dev/sda5
/dev/sda5: UUID="01c2925f-7716-4810-9243-39838de79b8c" TYPE="xfs" PARTUUID="f085a991-05"
[root@localhost ~]#
[root@localhost ~]# blkid  -U 01c2925f-7716-4810-9243-39838de79b8c
/dev/sda5
[root@localhost ~]#

[root@localhost ~]# vim  /etc/fstab
```

change the last value /dev/sda5...Look like this....

```
UUID=01c2925f-7716-4810-9243-39838de79b8c  /storage      xfs    defaults  0 0
```

save and quit from this file.

```
[root@localhost ~]# mount -a
[root@localhost ~]#
[root@localhost ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        1.9G     0  1.9G   0% /dev
tmpfs           1.9G     0  1.9G   0% /dev/shm
tmpfs           1.9G  9.9M  1.9G   1% /run
tmpfs           1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2        15G  3.9G   11G  27% /
/dev/sda1       994M  165M  830M  17% /boot
tmpfs           376M   16K  376M   1% /run/user/42
tmpfs           376M  4.6M  372M   2% /run/user/0
/dev/sr0        6.7G  6.7G     0 100% /run/media/root/RHEL-8-0-0-BaseOS-x86_64
/dev/sda5       2.0G   76M  2.0G   4% /storage
[root@localhost ~]#
```

**********Completed**********

How to Delele any partition step by step ?

```
[root@localhost ~]# umount  /storage
[root@localhost ~]#
[root@localhost ~]# vim  /etc/fstab
```

delete the last entry

save and quit from this file

```
[root@localhost ~]# mount -a
```

or

```
[root@localhost ~]# systemctl  daemon-reload
```

```
[root@localhost ~]# fdisk  /dev/sda

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.


Command (m for help): d
Partition number (1-5, default 5): 5

Partition 5 has been deleted.
```

```
Command (m for help): d
Partition number (1-4, default 4): 4

Partition 4 has been deleted.

Command (m for help): w

The partition table has been altered.
Syncing disks.

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# udevadm  settle

root@localhost ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   30G  0 disk
├─sda1   8:1    0 1000M  0 part /boot
├─sda2   8:2    0 14.7G  0 part /
└─sda3   8:3    0    2G  0 part [SWAP]
sr0     11:0    1  6.6G  0 rom  /run/media/root/RHEL-8-0-0-BaseOS-x86_64
[root@localhost ~]#
```

****
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