

(System Call for removing Media Devices)

In Linux operating system, Whenever a removable media or a storage device is attached to a computer, a block driver is initialized and all information about that media is stored in a Data structure called **Gendisk**.

-My approach-

- Gendisk data structure includes many variables like **major**, **minor**, **device name** and each of these stores information about a device.
- When a device is attached, its structure is initialized and structure pointer is passed to a function known as **add_disk**.
- I need to tackle those pointers, which does not include hard disk and DVD rom. For this, I reviewed the naming convention to devices, which is below.

```
abdullah@abdullah-Latitude-E5440: ~  
abdullah@abdullah-Latitude-E5440:~$ lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
sda          8:0    0 298.1G  0 disk  
├─sda1       8:1    0   100G  0 part  
├─sda2       8:2    0     1K  0 part  
├─sda3       8:3    0    60G  0 part /  
└─sda5       8:5    0 138.1G  0 part  
sr0         11:0    1  1024M  0 rom  
abdullah@abdullah-Latitude-E5440:~$
```

Here you can see, **sr0** is rom and **sda** is harddrive. So, I neglected them and copied all other pointers in my own **initialized** Gendisk data_structure array.

- Now, if u have pointers so you easily remove the associate devices by using a function known as **del_gendisk**.

-My Functions-

- I created two functions, one for display number of removable devices attached and other to remove it.
- Display function displays devices with their order number, which had to be passed to remove function in order to remove it.

-Working-

I listed all devices using Linux terminal command **lsblk**. Below is a list of devices which includes my **2 usb's** with names **sdb** and **sbc**.

```
abdullah@abdullah-Latitude-E5440: ~  
abdullah@abdullah-Latitude-E5440:~$ lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
sda          8:0      0 298.1G 0 disk  
├─sda1       8:1      0   100G 0 part  
├─sda2       8:2      0     1K 0 part  
├─sda3       8:3      0    60G 0 part /  
└─sda5       8:5      0 138.1G 0 part  
sdb          8:16     1   1.9G 0 disk  
└─sdb1       8:17     1   1.9G 0 part /media/abdullah/USB STICK  
sdc          8:32     1    15G 0 disk  
└─sdc1       8:33     1    15G 0 part /media/abdullah/UBUNTU 16_0  
sr0         11:0     1 1024M 0 rom  
abdullah@abdullah-Latitude-E5440:~$
```

Now, I will run my system call to detect those devices.

```
abdullah@abdullah-Latitude-E5440: ~  
abdullah@abdullah-Latitude-E5440:~$ Devices  
Type dmesg  
abdullah@abdullah-Latitude-E5440:~$
```

```
[ 202.130565] No. of Remove_able devices attached:2
[ 202.130569] 0 sdb
[ 202.130571] 1 sdc
abdullah@abdullah-Latitude-E5440:~$
```

Now, I will run second system call to remove them

```
abdullah@abdullah-Latitude-E5440: ~
abdullah@abdullah-Latitude-E5440:~$ remove
Enter Device Number
0
Device Removed
abdullah@abdullah-Latitude-E5440:~$ remove
Enter Device Number
1
Device Removed
abdullah@abdullah-Latitude-E5440:~$
```

Now, they are successfully removed and are not visible below.

```
abdullah@abdullah-Latitude-E5440: ~
abdullah@abdullah-Latitude-E5440:~$ lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda        8:0    0 298.1G  0 disk
├─sda1     8:1    0   100G  0 part
├─sda2     8:2    0    1K   0 part
├─sda3     8:3    0   60G   0 part /
└─sda5     8:5    0 138.1G  0 part
sr0       11:0    1  1024M  0 rom
abdullah@abdullah-Latitude-E5440:~$
```