Creating filesystems and mount points

Let's start by taking a look at the hard disks (sdc, sdd) that we are going to be using:

```
sudo fdisk -l /dev/sdc /dev/sdd
```

```
Disk /dev/sdc: 10 Gib, 1073741824 bytes
255 heads, 63 sectors/track, 130 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000d5df1

   Device Boot      Start         End      Blocks   Id  System

Disk /dev/sdd: 10 Gib, 1073741824 bytes
255 heads, 63 sectors/track, 130 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0000523e

   Device Boot      Start         End      Blocks   Id  System
```

We can see from the information above that each drive is 1 Gb in size.
fdisk -l will list all drives and their partitions. These drives have not been partitioned yet.

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Partition /dev/sdc

We use fdisk to partition disks:

```
fdisk /dev/sdc
```

```
Device contains neither a valid DOS partition table, nor Sun, SGI or
OSF disklabel
Building a new DOS disklabel with disk identifier 0x05adea0a.
Changes will remain in memory only, until you decide to write them.
After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected
by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended
to
         switch off the mode (command 'c') and change display units
to
         sectors (command 'u').

Command (m for help): n <--
Command action
   e   extended
   p   primary partition (1-4)
p <--
Partition number (1-4): 1 <--
First cylinder (1-10, default 1): 1 <--
Last cylinder, +cylinders or +size{K,M,G} (1-130, default 130): +500M
<--

Command (m for help): n <--
Command action
   e   extended
   p   primary partition (1-4)
p <--
Partition number (1-4): 2 <--
First cylinder (66-130, default 66): [enter] <--
Using default value 66
Last cylinder, +cylinders or +size{K,M,G} (66-130, default 130):
```

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```
[enter]
Using default value 10

n

Command (m for help): w <--
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
[root@centos-in ~]# fdisk -l /dev/sdc

255 heads, 63 sectors/track, 130 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000d5df1

   Device Boot      Start         End      Blocks   Id  System
/dev/sdc1               1          65      522081   83  Linux
/dev/sdc2              66         130      522112+  83  Linux
```

If you see the partition table highlighted above, you have successfully partitioned /dev/sdc into two partitions, /dev/sdc1 and /dev/sdc2.

The first partition we specified a size of 500 MB (+500M)
The second partition we defaulted to the rest of the disk

Formatting

We want to use the ext4 filesystem on both partitions:

```
mkfs -t ext4 /dev/sdc1
mkfs -t ext4 /dev/sdc2
```

You should get output from the mkfs command with inode counts and that the format completed successfully.

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Mount Point

Create directories named sdc1 and sdc2 in the /media directory:

```
mkdir /media/sdc1
mkdir /media/sdc2
```

Mount the partitions to the appropriate directory:

```
mount -o rw /dev/sdc1 /media/sdc1
mount -o rw /dev/sdc2 /media/sdc2
```

Use the **mount** command to verify that you have mounted the filesystems correctly. You should see the following lines:

```
/dev/sdc1 on /media/sdc1 type ext4 (rw)
/dev/sdc2 on /media/sdc2 type ext4 (rw)
```

Add to /etc/fstab (example only - do not modify!)

Using nano, add the following lines to your /etc/fstab so that the filesystems will automount on reboot:

```
/dev/sdc1  /media/sdc1          ext4       defaults         0 0
/dev/sdc2  /media/sdc2          ext4       defaults         0 0
```