Here are some exercises focused on disks and filesystems in Linux, specifically designed for an environment with two 1GB disks, /dev/vdb and /dev/vdc:

NOTE:!!! Before you start, find out which disks are available. If you are not sure, ask someone else to assist you. In this lab we use vdb and vdc.

Exercise 1: Viewing Disk Information
Objective: Learn how to view information about the disks in your system.

1. Use the lsblk command to list all block devices and their mount points:
```
lsblk
```

2. Use the fdisk command to view the partition table of /dev/vdb and /dev/vdc:
```
sudo fdisk -l /dev/vdb
sudo fdisk -l /dev/vdb
```

Exercise 2: Creating Partitions
Objective: Create partitions on the disks.

1. Start fdisk on /dev/vdb:
```
sudo fdisk /dev/vdb
```

2. Inside fdisk, create a new partition:
```
 - Type n to create a new partition.
   - Choose p for primary partition.
   - Use the default partition number and the default first sector.
   - Specify the size as +500M to create a 500MB partition.
   - Type w to write the changes.
```

3. Repeat the above steps for /dev/vdc to create a 500MB partition on that disk as well.

Exercise 3: Formatting Partitions
Objective: Format the created partitions with a filesystem.

1. Format the newly created partition on /dev/vdb (e.g., /dev/vdb1) with the ext4 filesystem:
```
sudo mkfs.ext4 /dev/vdb1
```

2. Format the newly created partition on /dev/vdc (e.g., /dev/vdc1) with the ext4 filesystem:
```
sudo mkfs.ext4 /dev/vdc1
```

Exercise 4: Creating Mount Points
Objective: Create directories to mount the partitions.

1. Create two directories for mounting the partitions:
```
sudo mkdir /mnt/vdb1
sudo mkdir /mnt/vdc1
```

Exercise 5: Mounting Partitions
Objective: Mount the partitions to the created directories.

1. Mount the partition /dev/vdb1 to /mnt/vdb1:
```
sudo mount /dev/vdb1 /mnt/vdb1
```

2. Mount the partition /dev/vdc1 to /mnt/vdc1:
```
sudo mount /dev/vdc1 /mnt/vdc1
```

3. Verify the mounting with:
```
df -h
```

Exercise 6: Checking Mounted Filesystems
Objective: Learn how to check the mounted filesystems.

1. Use the mount command to list all mounted filesystems:
```
mount | grep /mnt
```

2. Use the lsblk command again to see the mount points associated with the block devices:
```
lsblk
```

Exercise 7: Creating and Managing Files
Objective: Create files on the mounted partitions.

1. Navigate to the first mounted partition:
```
cd /mnt/vdb1
```

2. Create a test file:
```
echo "Hello from vdb1" > test_file_vdb1.txt
```

3. Navigate to the second mounted partition:
```
cd /mnt/vdc1
```

4. Create a test file:
```
echo "Hello from vdc1" > test_file_vdc1.txt
```

5. List the files to verify they were created:
```
ls -l
```

Exercise 8: Unmounting Partitions
Objective: Learn how to unmount partitions.

1. Unmount the first partition:
```
sudo umount /mnt/vdb1
```

2. Unmount the second partition:
```
sudo umount /mnt/vdc1
```

3. Verify that the partitions have been unmounted:
```
df -h
```

Exercise 9: Updating fstab for Automatic Mounting
Objective: Configure automatic mounting on boot.

1. Open the /etc/fstab file in a text editor (e.g., nano):
```
sudo nano /etc/fstab
```

2. Add the following lines to the end of the file (replace /dev/vdb1 and /dev/vdc1 with your actual device paths):
```
/dev/vdb1    /mnt/vdb1    ext4    defaults    0    2
/dev/vdc1    /mnt/vdc1    ext4    defaults    0    2
```

3. Save and exit the editor.

4. Test the configuration by remounting all filesystems:

```
sudo mount -a
```

5. Verify that the partitions are mounted correctly:
```
df -h
```

Exercise 10: Cleaning Up
Objective: Remove created files, partitions, and directories.

1. Unmount the filesystems that you created.

2. If you want to clean up and remove the partitions, you can use fdisk to delete them:
```
sudo fdisk /dev/vdb
```

    - Type **d** to delete the partition and follow the prompts.

    Repeat for /dev/vdc.

3. Remove the mount points:
```
sudo rmdir /mnt/vdb1
sudo rmdir /mnt/vdc1
```

4. Remove the entries from **/etc/fstab. (Don't forget that!)**