LINUX ASSIGNMENTS

1. Install Linux Distributions using Virtual Box / KVM or any virtualization software. The ISOs given to you are:
   * 1. CentOS 7.2.iso
     2. Ubuntu 18.04 LTS.iso
2. Issue a command to find out which version of the kernel is being used?
3. Do the following:
   * 1. Create directories /tmp/files/files, /tmp/files/photos, /tmp/files/videos , /tmp/files/pictures
     2. Copy only files starting from a to c in the directory /etc to /tmp/files
     3. Mov files starting with a or b in /tmp/files to /tmp/files/photos
     4. Move files starting with a or c to /tmp/files/videos
     5. Find files of size less than 1000 in /etc and copy them to /tmp/files/pictures/
     6. Create a symbolic link var to /var
     7. Archive the folder videos and name it as videos.tgz
     8. Extract/uncompress the videos.tgz into the folder /tmp/archive
4. Do the following:
   * 1. Use and tail to display the 5th line of /etc/passwd
     2. Use grep to show the names of all files in /etc that have lines starting with the text 'root'. You can ommit the directories in the search
     3. Use grep to show all lines from all files in /etc that contain exactly 3 characters. You can ommit the directories in the search
     4. Find all lines in the file 'names' that match the string 'alex' but not alexander
5. Do the following:
   * 1. Create 4 users rama, sita, lakshman, hanuman
     2. Set their passwords to expire after 60 days
     3. Create group sales and make users rama & sita members of that group
     4. Create group account and make users lakshman & hanuman members of that group
     5. Create a group users and make all 4 users member of that user group as a secondary group
     6. Use input redirection to set the password as “password” for all 4 users
6. Do the following:
   * 1. Ensure that files created by user root cannot be accessed by group or others.
     2. Create directories /data/sales , /data/account
     3. Members of the group sales should be able to read/write files in sales. Similar requirement applies to group account
     4. No other users should have access to these directories
     5. Users will only be allowed to delete files they have created themselves, but rama is the sales manager and should be able to manage all sales files
7. Do the following:
   * 1. Add a new disk to your computer
     2. On this new disk, create a 1GB partition and format it with ext4 filesystem
     3. Moutnt the partition temporarily on the /mnt directory

**ANSWERS:**

1. -
2. uname -r
   * + 1. mkdir -p /tmp/files/photos /tmp/files/pictures /tmp/files/videos
       2. sudo cp /etc/[a-c]\* /tmp/files/ ; cd /tmp/files/
       3. mv [ab]\* photos/
       4. mv c\* videos/
       5. sudo find /etc -type f -size -1000c -exec cp {} /tmp/files/pictures \;
       6. ln -s /var var
       7. tar -zcvf videos.tgz videos
       8. mkdir /tmp/archive ; tar -xvf videos.tgz -C /tmp/archive
       9. head -n 5 /etc/passwd | tail -n 1
       10. grep --color '^root' /etc/ 2> /dev/null
       11. grep -l '^root' /etc/ 2> /dev/null
       12. grep '^...$' /etc/\* 2> /dev/null
       13. grep '\<alex\>' names
3. Do the following:
   * + 1. Change the variable PASS\_MAX\_DAY 60 in /etc/login/defs
       2. groupadd sales ; groupdd account ; groupadd users
       3. useradd -G sales,users rama

useradd -G sales,users sita

useradd -G account,users lakshman

useradd -G account,users hanuman

1. Do the following:
   * + 1. umask 077
       2. mkdir -p /data/sales ; mkdir /data/account
       3. ls -l /data/ ;
       4. chgrp sales sales
       5. chmod g+rwx sales sales

chmod g+rwx account account

* + - 1. chmod +t sales
      2. chown rama sales

1. Do the following:
   * + 1. -
       2. # gdisk /dev/sdb

> n (Creates a new partition)

> +1G (size = 1G)

> w (writes to the partition table)

# lsblk (Shows the new partition)

mkfs.ext4 /dev/sdb1 (Creates ext4 filesystem on the new partition)

* + - 1. mount /dev/sdb1 /mnt (Mounts the filesystem on /mnt)