

Assignment

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1) Write a shell script to print the following system information :

```
File Edit View Search Terminal Help
#!/bin/bash
echo "currently logged in users:"
who
echo "Available shells:"
cat /etc/shells
echo "shell directory: $SHELL"
echo "home directory: $HOME"
echo "OS name and version:"
lsb_release -a
echo "currently working directory: $PWD"
echo "number of users logged in: $(who | wc -l)"
echo "hard disk information:"
df -h
echo "CPU information:"
lscpu
echo "Memory information:"
free -h
echo "Currently running process:"
ps aux
```

Currently logged users ,Your shell directory, OS name & version, Current working directory ,Home directory

```
demo@ubuntu:/home/snehal$ ls
Album      Downloads  practice  script    snehal    Templates  Videos
Desktop    Music      ps         sicky_bit snehal.txt test.txt
Documents  Pictures   Public    snap      sneha.txt txt
demo@ubuntu:/home/snehal$ cd script/
demo@ubuntu:/home/snehal/script$ ls
system_info.sh
demo@ubuntu:/home/snehal/script$ ./system_info.sh
currently logged in users:
snehal    :0                2023-02-18 06:18 (:0)
Available shells:
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/bin/rbash
/bin/dash
shell directory: /bin/bash
home directory: /home/demo
OS name and version:
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 18.04.6 LTS
Release:        18.04
Codename:       bionic
currently working directory: /home/snehal/script
number of users logged in: 1
```

Hard Disk Info:

```
number of users logged in: 1
hard disk information:
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G   0    1.9G   0% /dev
tmpfs           392M  2.1M  390M   1% /run
/dev/sda1       20G   8.4G   11G   46% /
tmpfs           2.0G   0    2.0G   0% /dev/shm
tmpfs           5.0M  4.0K   5.0M   1% /run/lock
tmpfs           2.0G   0    2.0G   0% /sys/fs/cgroup
/dev/loop0       21M   21M     0 100% /snap/gnome-logs/25
/dev/loop1      117M  117M     0 100% /snap/core/14784
/dev/loop2       13M   13M     0 100% /snap/gnome-characters/69
/dev/loop3       512K  512K     0 100% /snap/gnome-characters/781
/dev/loop4       2.7M  2.7M     0 100% /snap/gnome-calculator/920
/dev/loop5       1.5M  1.5M     0 100% /snap/gnome-system-monitor/181
/dev/loop6       117M  117M     0 100% /snap/core/14447
/dev/loop7       768K  768K     0 100% /snap/gnome-logs/115
/dev/loop8       453M  453M     0 100% /snap/gnome-42-2204/56
/dev/loop9       1.7M  1.7M     0 100% /snap/gnome-calculator/154
/dev/loop10      73M   73M     0 100% /snap/core22/504
/dev/loop11      73M   73M     0 100% /snap/core22/509
/dev/loop12      141M  141M     0 100% /snap/gnome-3-26-1604/104
/dev/loop13      3.4M  3.4M     0 100% /snap/gnome-system-monitor/36
/dev/loop14      347M  347M     0 100% /snap/gnome-3-38-2004/119
/dev/loop15       64M   64M     0 100% /snap/core20/1778
/dev/loop16       92M   92M     0 100% /snap/gtk-common-themes/1535
/dev/loop17       64M   64M     0 100% /snap/core20/1822
/dev/loop18      128K  128K     0 100% /snap/bare/5
```

CPU Info:

```
tmpfs 392M 0 392M 0% /run/user/1003
CPU information:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 2
On-line CPU(s) list: 0,1
Thread(s) per core: 1
Core(s) per socket: 1
Socket(s): 2
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 142
Model name: Intel(R) Core(TM) i7-8650U CPU @ 1.90GHz
Stepping: 10
CPU MHz: 2112.000
BogoMIPS: 4224.00
Hypervisor vendor: VMware
Virtualization type: full
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node0 CPU(s): 0,1
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca c
mov dat pse36 clflush mmx fxsr sse sse2 ss svscall nx pdpe1gb rdtscp lm constan
```

Currently Running Process:

```
opt xsavec xgetbv1 xsavec arat flush_tld arch_capabilities
Memory information:
              total          used          free      shared  buff/cache   available
Mem:          3.8G          978M          1.9G          6.2M          1.0G          2.6G
Swap:          947M           0B          947M
Currently running process:
USER        PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  10.7   0.2 159748  9100 ?        Ss   06:17   0:14 /sbin/init au
root         2   0.1   0.0     0     0 ?        S    06:17   0:00 [kthreadd]
root         3   0.0   0.0     0     0 ?        I    06:17   0:00 [kworker/0:0]
root         4   0.0   0.0     0     0 ?        I<   06:17   0:00 [kworker/0:0H]
root         5   0.0   0.0     0     0 ?        I    06:17   0:00 [kworker/u256]
root         6   0.0   0.0     0     0 ?        I<   06:17   0:00 [mm_percpu_wq]
root         7   0.2   0.0     0     0 ?        S    06:17   0:00 [ksoftirqd/0]
root         8   0.3   0.0     0     0 ?        I    06:17   0:00 [rcu_sched]
root         9   0.0   0.0     0     0 ?        I    06:17   0:00 [rcu_bh]
root        10   0.0   0.0     0     0 ?        S    06:17   0:00 [migration/0]
root        11   0.0   0.0     0     0 ?        S    06:17   0:00 [watchdog/0]
root        12   0.0   0.0     0     0 ?        S    06:17   0:00 [cpuhp/0]
root        13   0.0   0.0     0     0 ?        S    06:17   0:00 [cpuhp/1]
root        14   0.0   0.0     0     0 ?        S    06:17   0:00 [watchdog/1]
root        15   0.4   0.0     0     0 ?        S    06:17   0:00 [migration/1]
root        16   0.3   0.0     0     0 ?        S    06:17   0:00 [ksoftirqd/1]
root        17   0.0   0.0     0     0 ?        I    06:17   0:00 [kworker/1:0]
root        18   0.0   0.0     0     0 ?        I<   06:17   0:00 [kworker/1:0H]
root        19   0.0   0.0     0     0 ?        S    06:17   0:00 [kdevtmpfs]
```

2) Given album and dir create a script to name files properly by inserting index numbers

```
mv: cannot move '3.jpg' to 'day_out': permission denied  
demo@ubuntu:/home/snehal/Album$ ls  
1.jpg 2.jpg 3.jpg shell.sh
```

```
#!/bin/bash

# check if three command-line arguments were provided
if [ $# -ne 3 ]
then
    echo "Usage: $0 <directory> <prefix> <extension>"
    exit 1
fi

# navigate to the directory containing the files to be renamed
cd "$1"

# loop through all the files in the directory with the specified extension
for file in *."$3"
do
    # check if the file is a regular file (not a directory)
    if [ -f "$file" ]
    then
        # rename the file by adding the specified prefix
        mv "$file" "$2$file"
    fi
done

~
```



```
mv /home/snehal/Album/Day_out1.jpg to Day_out2.jpg + Permission denied
```

```
demo@ubuntu:/home/snehal/Album$ sudo ./shell.sh /home/snehal/Album Day_out.jpg
```

```
demo@ubuntu:/home/snehal/Album$ ls
```

```
Day_out1.jpg Day_out2.jpg Day_out3.jpg shell.sh
```

```
demo@ubuntu:/home/snehal/Album$ touch Day_out1.jpg
```

3) Write a script to rename a dir with a given name

```
demo@ubuntu:/home/snehal$ ls
Album      Downloads  practice  Renamed_album  snap      sneha.txt  txt
Desktop    Music      ps         script          snehal    Templates  Videos
Documents  Pictures   Public    sicky_bit       snehal.txt test.txt

demo@ubuntu:/home/snehal$ cd Renamed_album/
```

```
#!/bin/bash
```

```
old_dir_name=$1
```

```
new_dir_name=$2
```

```
mv "$old_dir_name" "$new_dir_name"
```

Renamed_album renewed in new_album

```
demo@ubuntu:/home/snehal/Renamed_album$ sudo ./File.sh /home/snehal/Renamed_album /home/snehal/new_album
demo@ubuntu:/home/snehal/Renamed_album$ cd ..
demo@ubuntu:/home/snehal$ ls
Album      Downloads  Pictures   Public     snap       sneha.txt  txt
Desktop    Music      practice  script     snehal     Templates  Videos
Documents  new_album  ps        sicky_bit  snehal.txt test.txt
demo@ubuntu:/home/snehal$
```