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Topic – Shell practice questions from 13 to 20

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Question 13 – Script to print the following:

- Currently logged users
- Your shell directory
- Home directory
- OS name & version
- Current working directory
- Number of users logged in
- Show all available shells in your system
- Hard disk information
- CPU information.
- Memory information.
- File system information.
- Currently running process

Code –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
#!/bin/bash

echo "Currently logged users:"
who

echo "Your shell directory:"
echo $SHELL

echo "Home directory:"
echo $HOME

echo "OS name & version:"
uname -a

echo "Current working directory:"
pwd

echo "Number of users logged in:"
who | wc -l

echo "Available shells:"
cat /etc/shells

echo "Hard disk information:"
df -h

echo "CPU information:"
lscpu

echo "Memory information:"
free -h

echo "File system information:"
lsblk

echo "Currently running process:"
ps -aux
```

Output –


```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p14.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p14.sh
Please provide a file or directory name
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
A.txt  ak_img1.jpg  p10.sh  p14.sh  p17.sh  p2.sh  p21_say_hello.sh  p24.sh  p27.sh  p31.sh  p34.sh  p6.sh  p9.sh  practice_Questions.txt  text.txt
test11 ak_img2.jpg  p11.sh  p15.sh  p18.sh  p20.sh  p22.sh  p25.sh  p3.sh  p32.sh  p4.sh  p7.sh  s3.swp
a.txt  p1.sh  p12.sh  p16.sh  p19.sh  p21.sh  p23.sh  p26.sh  p30.sh  p33.sh  p5.sh  p8.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p14.sh a.txt
File/directory renamed successfully
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
A.txt  ak_img1.jpg  p10.sh  p14.sh  p17.sh  p2.sh  p21_say_hello.sh  p24.sh  p27.sh  p31.sh  p34.sh  p6.sh  p9.sh  practice_Questions.txt  text.txt
test11 ak_img2.jpg  p11.sh  p15.sh  p18.sh  p20.sh  p22.sh  p25.sh  p3.sh  p32.sh  p4.sh  p7.sh  s3.swp
test22 p1.sh  p12.sh  p16.sh  p19.sh  p21.sh  p23.sh  p26.sh  p30.sh  p33.sh  p5.sh  p8.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p13.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p13.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p13.sh
Currently logged users:
Your shell directory:
/bin/bash
Home directory:
/home/anup
OS name & version:
Linux DESKTOP-UDNP065 4.4.0-19041-Microsoft #2311-Microsoft Tue Nov 08 17:09:00 PST 2022 x86_64 x86_64 GNU/Linux
Current working directory:
/home/anup/Shell/practice_Questions
Number of users logged in:
0
Available shells:
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/usr/bin/sh
/bin/dash
/usr/bin/dash
/usr/bin/tmux
/usr/bin/screen
Hard disk information:
```

Question 16

Script to rename all .jpg files by replacing prefix which is given by user

Code –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
~/bin/bash

echo "Enter the new prefix:"
read new_prefix

for file in *.jpg;
do
    mv "$file" "${new_prefix}_${file#*_}"
done

echo "All .jpg files have been renamed with the new prefix."
```

Output –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p17.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p17.sh text.txt 2 4
Anup
Kore
Here
I Am from solapur
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p16.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p16.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p16.sh text.txt
Enter the new prefix:
ak
mv: cannot stat '*.jpg': No such file or directory
All .jpg files have been renamed with the new prefix.
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ touch img1.jpg img2.jpg img2.jpg
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
test11  a.txt      img2.jpg  p10.sh  p12.sh  p17.sh  p19.sh  p20.sh  p21_say_hello.sh  p23.sh  p25.sh  p27.sh  p30.sh  p32.sh  p34.sh  p5.sh  p7.sh  p9.sh  text.txt
test22  img1.jpg  p1.sh    p11.sh  p16.sh  p18.sh  p2.sh   p21.sh  p22.sh           p24.sh  p26.sh  p3.sh   p31.sh  p33.sh  p4.sh  p6.sh  p8.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p16.sh text.txt
Enter the new prefix:
ak
All .jpg files have been renamed with the new prefix.
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
test11  ak_img1.jpg  p10.sh  p16.sh  p19.sh  p21.sh  p23.sh  p26.sh  p30.sh  p33.sh  p5.sh  p8.sh  text.txt
test22  ak_img2.jpg  p11.sh  p17.sh  p2.sh   p21_say_hello.sh  p24.sh  p27.sh  p31.sh  p34.sh  p6.sh  p9.sh
a.txt  p1.sh       p12.sh  p18.sh  p20.sh  p22.sh  p25.sh  p3.sh   p32.sh  p4.sh  p7.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
```

Question 17

Script to print contents of file from given line number to next given number of lines.

Code –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
#!/bin/bash

if [[ $# -ne 3 ]]; then
    echo "Usage: $0 <filename> <start line number> <number of lines to print>"
    exit 1
fi

file="$1"
start_line="$2"
num_lines="$3"

tail -n +$start_line "$file" | head -n $num_lines

-- REPLACE --
```

Output –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p17.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p17.sh text.txt 2 4
Anup
Kore
Here
I Am from solapur
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p16.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p16.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p16.sh text.txt
Enter the new prefix:
ak
mv: cannot stat '*.jpg': No such file or directory
All .jpg files have been renamed with the new prefix.
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ touch img1.jpg img2.jpg img2.jpg
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
test11  a.txt      img2.jpg  p10.sh  p12.sh  p17.sh  p19.sh  p20.sh  p21_say_hello.sh  p23.sh  p25.sh  p27.sh  p30.sh  p32.sh  p34.sh  p5.sh  p7.sh  p9.sh  text.txt
test22  img1.jpg  p1.sh    p11.sh  p16.sh  p18.sh  p2.sh   p21.sh  p22.sh           p24.sh  p26.sh  p3.sh   p31.sh  p33.sh  p4.sh   p6.sh  p8.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p16.sh text.txt
Enter the new prefix:
ak
All .jpg files have been renamed with the new prefix.
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
test11  ak_img1.jpg  p10.sh  p16.sh  p19.sh  p21.sh  p23.sh  p26.sh  p30.sh  p33.sh  p5.sh  p8.sh  text.txt
test22  ak_img2.jpg  p11.sh  p17.sh  p2.sh   p21_say_hello.sh  p24.sh  p27.sh  p31.sh  p34.sh  p6.sh  p9.sh
a.txt  p1.sh       p12.sh  p18.sh  p20.sh  p22.sh  p25.sh  p3.sh   p32.sh  p4.sh   p7.sh  s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
```

Question 18

Script to display the longest and shortest user-names on the system.

Code –

```
#!/bin/bash

usernames=( $(cut -d: -f1 /etc/passwd) )

shortest=${usernames[0]}
longest=${usernames[0]}

for user in "${usernames[@]}"
do
    if [ ${#user} -lt ${#shortest} ]
    then
        shortest=$user
    fi
    if [ ${#user} -gt ${#longest} ]
    then
        longest=$user
    fi
done

echo "Shortest user name: $shortest"
echo "Longest user name: $longest"
```

Output –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
Test11  a.txt  p18.sh  p12.sh  p2.sh  p21.sh                p22.sh  p24.sh  p26.sh  p3.sh  p31.sh  p33.sh  p4.sh  p6.sh  p8.sh
Test22  p1.sh  p11.sh  p19.sh  p20.sh  p21_say_hello.sh    p23.sh  p25.sh  p27.sh  p30.sh  p32.sh  p34.sh  p5.sh  p7.sh  p9.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ touch s1.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ touch s2.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ cd ..
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ touch s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p19.sh
./s3.swp
./Test11/s1.swp
./Test11/s2.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p18.sh
./p18.sh: line 29: syntax error: unexpected end of file
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p18.sh
Shortest user name: lp
Longest user name: systemd-timesync
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
```

Question – 19

Script to delete all the .swp files found in your system or directory.

Code –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
#!/bin/bash

find . -type f -name '*.swp' -print
```

Output –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p19.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ls
Test11  a.txt  p18.sh  p12.sh  p2.sh  p21.sh  p22.sh  p24.sh  p26.sh  p3.sh  p31.sh  p33.sh  p4.sh  p6.sh  p8.sh
Test22  p1.sh  p11.sh  p19.sh  p20.sh  p21_say_hello.sh  p23.sh  p25.sh  p27.sh  p30.sh  p32.sh  p34.sh  p5.sh  p7.sh  p9.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ touch s1.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ touch s2.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions/Test11$ cd ..
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ touch s3.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p19.sh
./s3.swp
./Test11/s1.swp
./Test11/s2.swp
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p18.sh
./p18.sh: line 29: syntax error: unexpected end of file
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p18.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p18.sh
Shortest user name: lp
Longest user name: systemd-timesync
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
```

Question – 20

script for generating random 8-character passwords including alpha numeric characters.

Code-

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
#!/bin/bash

characters='abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789'

for var in 1 2 3 4 5 6 7 8
do
    password=$(cat /dev/urandom | tr -dc $characters | fold -w 8 | head -n 1)
    echo $password
done
```


Output –

```
anup@DESKTOP-UDNP065: ~/Shell/practice_Questions
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 4.4.0-19041-Microsoft x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

This message is shown once a day. To disable it please create the
/home/anup/.hushlogin file.
anup@DESKTOP-UDNP065:~$ cd Shell
anup@DESKTOP-UDNP065:~/Shell$ ls
Hello_World.sh  Test2  Variables.sh  assignment-2.sh  assignment-4.sh  for_loop.sh  practice_Questions  user_input.sh
Test           Test3  assignment-1.sh  assignment-3.sh  assignment-5.sh  if_else.sh  switch.sh  variables.sh
anup@DESKTOP-UDNP065:~/Shell$
anup@DESKTOP-UDNP065:~/Shell$ cd practice_Questions
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p21_say_hello.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p21_say_hello.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p21_say_hello.sh
Good afternoon! Today is Thursday, April 20, 2023.
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p20.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ chmod u+x p20.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p20.sh
1AC0554I
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ vi p20.sh
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$ ./p20.sh
K0vt0npV
KfgGhwFk
UjJ6Jobf
E=4gBnbJ
6387Tj9Q
3qC0gwPr
mDTuk7Uh
o40c8XeI
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
anup@DESKTOP-UDNP065:~/Shell/practice_Questions$
```