Shell Scripting

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1. (output to terminal)Write a script to print:

a. “Welcome to Intelligrape”

Ans.

```
chhavi@chhavi:~$ cat script.sh
#!/bin/bash

echo "Welcome to Intelligrape"
```

```
chhavi@chhavi: ~
chhavi@chhavi:~$ sudo vim script.sh
[sudo] password for chhavi:
chhavi@chhavi:~$ sudo chmod u+x script.sh
chhavi@chhavi:~$ sudo ./script.sh
Welcome to Intelligrape
chhavi@chhavi:~$
```

b. <username>@<hostname>:<your present working directory>

Ans.

```
chhavi@chhavi: ~                    chhavi@chhavi: ~/Documents/DBsession
#!/bin/bash

echo `whoami`"@"`hostname`:`pwd`
```

```
chhavi@chhavi:~$ ./sec.sh
chhavi@chhavi:/home/chhavi
```

2 (arguments)Write a script

a. which takes in two arguments and print those arguments.

Ans.

```
chhavi@chhavi:~$ cat second.sh
#!/bin/bash

echo "Enter Two Arguments : "


read a b
echo "Arguments entered are : "
echo $a $b
```

```
chhavi@chhavi:~$ ./second.sh
Enter Two Arguments :
2 3
Arguments entered are :
2 3
chhavi@chhavi:~$
```

b. which checks the number of arguments passed and if the number is greater than two print ERROR messages along with printing the number of arguments.

Ans.

```
chhavi@chhavi:~$ vim args.sh
chhavi@chhavi:~$ ./args.sh one two three
Error, number of arguments should be less than or equal to 2.You have passed 3 arguments
chhavi@chhavi:~$ ./args.sh one two
chhavi@chhavi:~$ cat args.sh
#!/bin/bash

if [ $# -gt 2 ]
then
        echo "Error, number of arguments should be less than or equal to 2.You have passed "$#" arguments"
fi
chhavi@chhavi:~$
```

3. Continue with the above script

a. check the two arguments are only integer values and if these are not integers print the proper error on terminal and also log it into a file.

Ans.

```
chhavi@chhavi:~$ cat integerornot.sh
#!/bin/bash

if [[ $1 =~ ^[+-]?[0-9]+$ && $2 =~ ^[+-]?[0-9]+$ ]]
then
        echo "Inputs are integer."
else
        echo "Enter valid arguments.[Integer Type]"
fi
```

```
chhavi@chhavi:~$ ./integerornot.sh 1 2 | tee  log.txt
Inputs are integer.
chhavi@chhavi:~$ cat log.txt
Inputs are integer.
chhavi@chhavi:~$ ./integerornot.sh 1 chhavi | tee  log.txt
Enter valid arguments.[Integer Type]
chhavi@chhavi:~$ cat log.txt
Enter valid arguments.[Integer Type]
chhavi@chhavi:~$
```

b. perform addition on the two arguments and print result on screen. Use function for this.

Ans.

```
chhavi@chhavi:~$ ./integerornot.sh 1 2
Inputs are integer.
The sum of 1 and 2 is 3
chhavi@chhavi:~$
```

4. Create a calculator using the above script which would perform addition,subtraction,division and multiplication.

a. the script should ask user which operation the user wants to perform:+,-,*,/

b. if user enters other than “+.-,*,/”, print proper message on terminal and keeps on asking for correct input(use while loop to accomplish this).

c. Use case statement instead of if.

Ans.

Ans.

```
#!/bin/bash

if [[ $1 == "-h" ]]
then
        less manual_calculator
        exit 0
fi

while [ 1 ]
do
        echo "First Number"
        read a
        echo "Second Number"
        read b
        echo "Enter Operator"
        read c
        case $c in
                +) echo ans= `expr $a + $b`
                        exit 0
                        ;;
                -) echo ans= `expr $a - $b`
                        exit 0
                        ;;
                /) echo ans= `expr $a / $b`
                        exit 0
                        ;;
                \*) echo ans= `expr $a \* $b`
                        exit 0
                        ;;
        esac
```

```
chhavi@chhavi:~$ ./switch.sh
First Number
1
Second Number
1
Enter Operator
+
ans= 2
chhavi@chhavi:~$ ./switch.sh
First Number
4
Second Number
2
Enter Operator
-
ans= 2
```

```
chhavi@chhavi:~$ ./switch.sh
First Number
5
Second Number
2
Enter Operator
*
ans= 10
chhavi@chhavi:~$ ./switch.sh
First Number
10
Second Number
2
Enter Operator
/
ans= 5
```

```
chhavi@chhavi:~$ ./switch.sh
First Number
2
Second Number
3
Enter Operator
)
First Number
```

5. Write proper help documentation and print it with -h for the above script.
Ans.

```
chhavi@chhavi:~$ cat manual_calculator
Description
        This is a Manual Calculator.
It performs basic arithmetic calculations like :
addition
subtraction
multiplication
division

Step 1: Enter the desired Numbers
Step 2: Enter the correct operator
...
```

In switch.sh :

```
#!/bin/bash

if [[ $1 == "-h" ]]
then
        less manual_calculator
        exit 0
fi
```

```
Description
        This is a Manual Calculator.
It performs basic arithmetic calculations like :
addition
subtraction
multiplication
division

Step 1: Enter the desired Numbers
Step 2: Enter the correct operator
...
manual_calculator (END)
```

6. Create a script which takes input of "/etc/passwd" file and find out and print the sum of uids and gids. The script should tell which sum of greater.

Ans.

```
chhavi@chhavi:~$ cat uidguid.sh
#!/bin/bash

awk -F: '{a+=$3; b+=$4}END {print "Sum of UIDs : "a"" " \nSum of GUIDs : "b" "; if(a>
b){print a} else {print b}}' /etc/passwd
chhavi@chhavi:~$
```

```
chhavi@chhavi:~$ vim uidguid.sh
chhavi@chhavi:~$ chmod u+x uidguid.sh
chhavi@chhavi:~$ ./uidguid.sh
Sum of UIDs : 75601
Sum of GUIDs : 468124
468124
chhavi@chhavi:~$
```

7. A directory contains files and sub-directories. Move files to destination1 and directories to destination2

Ans.

Create two folders destination1 and destination2. (do not move the script file)

chhavi@chhavi: ~ | chhavi@chhavi: ~/sort

```
#!/bin/bash

for i in `ls`
do
        if [[ "$i" != "destination1" && "$i" != "destination2" && "$i" != "script.sh" ]]
        then
                if [ -f $i ]
                then
                        mv $i destination1/$i
                fi
                if [ -d $i ]
                then
                        mv $i destination2/$i
                fi
        fi
done
~
~
~
```

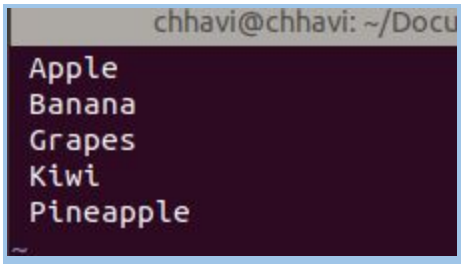
```
chhavi@chhavi:~/sort$ ./script.sh
chhavi@chhavi:~/sort$ ls
destination1  destination2  script.sh
```

```
chhavi@chhavi:~/sort$ cd destination1
chhavi@chhavi:~/sort/destination1$ ls
a  aa  dd  newfile  test.txt
chhavi@chhavi:~/sort/destination1$ cd ../destination2
chhavi@chhavi:~/sort/destination2$ ls
bbb  chhavi  ldld
chhavi@chhavi:~/sort/destination2$
```

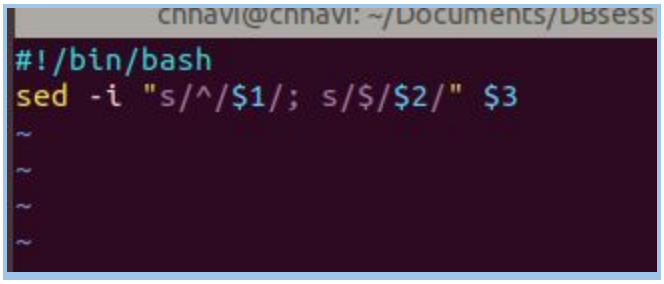
8. Create a script which takes three arguments, append first argument to every line in a file and second argument to the end of every line of the same file.

Ans.

newsubs.txt



newsubs.sh




```
chhavi@chhavi:~$ ./newsubs.sh hello bye newsubs.txt
chhavi@chhavi:~$ cat newsubs.txt
hello Apple bye
hello Banana bye
hello Grapes bye
hello Kiwi bye
hello Pineapple bye
chhavi@chhavi:~$
```

9. Make a list of files in /usr/bin that have the letter "a" as the second character. Put the result in a temporary file.

Ans.

```
chhavi@chhavi: ~
#!/bin/bash
for i in `ls /usr/bin`
do
        j=`echo $i | head -c 2 | tail -c 1`
        if [ "$j" == "a" ]
        then
                echo $i >> /tmp/abc
        fi
done
~
~
```

```
chhavi@chhavi:~$ vim a.sh
chhavi@chhavi:~$ chmod u+x a.sh
chhavi@chhavi:~$ ./a.sh
chhavi@chhavi:~$ cat /tmp/abc
aa-enabled
aa-exec
baobab
base32
base64
basename
bashbug
cal
calendar
calibrate_ppa
canberra-gtk-play
cancel
captoinfo
catchsegv
```

10. List all files in your home directory and print name and size in a table format.

Ans.

```
chhavi@chhavi: ~
#!/bin/bash
echo -e "Name\t\t\t\t\t Size"
ls -l | awk '{printf "%-38s|  %-9s\n", $9,$5}'
~
~
~
~
```

```
chhavi@chhavi:~$ vim name.sh
chhavi@chhavi:~$ ./name.sh
Name                                    Size
                                       |
0                                      |  0
1                                      |  2
2                                      |  4
abc.txt                                |  74
adlin                                  |  4096
args.sh                                |  137
a.sh                                   |  132
a.txt                                  |  7
aws                                    |  4096
awscliv2.zip                           |  32510886
aws-iam-authenticator                  |  18650400
ball.tar.gz                            |  1050
bin                                    |  4096
data                                   |  4096
Desktop                                |  4096
digit.sh                               |  24
docker                                 |  4096
Documents                              |  4096
Downloads                              |  4096
e2}                                    |  0
error.html                             |  129
error.txt                              |  44
examples.desktop                       |  8980
exercise                               |  4096
```