

Shell scripting

Shell Script:

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

a. "Welcome to Intelligrape"

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

```
vim /home/revant/Documents/ShellScripting
File Edit View Search Terminal Help
#!/bin/sh
echo "Welcome to Intelligrape"
echo `whoami`@"`hostname`":"`pwd`
~
~
~
~
```

```
[revant@revant:~/D/ShellScripting]-[10:35:31 IST]-[G:master]
└─>$ vim Q1.sh
> bash Q1.sh
Welcome to Intelligrape
revant@revant:/home/revant/Documents/ShellScripting
└─>[revant@revant:~/D/ShellScripting]-[10:36:30 IST]-[G:master]
└─>$ |
```

1. 2 (arguments)Write a script
2. a. which takes in two arguments and print those arguments.
3. b. which checks the number of arguments passed and if the number is greater than two print ERROR message along with printing the number of arguments.

```
#!/bin/sh
echo "First Argument $1"
echo "Second Argument $2"
if [ $# -gt 2 ]
then
    echo "Error"
    echo "Number of arguments are greater $#
"
fi
~
~
~
```

```
File Edit View Search Terminal Help
> bash Q2.sh 2 3 4
First Argument 2
Second Argument 3
Error
Number of arguments are greater 3
> |
```

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

```
File Edit View Search Terminal Help
#!/bin/sh
if [[ "$1" =~ ^[0-9]+$ && "$2" =~ ^[0-9]+$ ]]
then
    result=`expr $1 + $2`
    echo "$result"
else
    echo "they are not integers"
fi

~
~
~
```

```
> bash Q2.sh 1 aw
they are not integers
> bash Q2.sh 1 a2
they are not integers
> bash Q2.sh 1 2
3
> |
```

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 a proper message on the terminal and keeps on asking for correct input (use while loop to accomplish this).

c. Use case statements instead of if.

```
# !/bin/bash

# Take user Input
echo "Enter Two numbers : "
read a
read b

# Input type of operation
echo "Enter Choice :"
echo "1. Addition"
echo "2. Subtraction"
echo "3. Multiplication"
echo "4. Division"
read ch

# Switch Case to perform
# calculator operations
case $ch in
    1)res=`echo $a + $b | bc`
        ;;
    2)res=`echo $a - $b | bc`
        ;;
    3)res=`echo $a \* $b | bc`
        ;;
    4)res=`echo "scale=2; $a / $b" | bc`
        ;;
esac
```

```
> bash Q4.sh
Enter Two numbers :
2
3
Enter Choice :
1. Addition
2. Subtraction
3. Multiplication
4. Division
2
Result : -1
> bash Q4.sh
Enter Two numbers :
3
4
Enter Choice :
1. Addition
2. Subtraction
3. Multiplication
4. Division
3
Result : 12
> |
```

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

```
> cat calculator_help
This is calculator command
First enter 2 numbers
Then give the choice of operation
finally you will get the answer
```

```
# !/bin/bash

# Take user Input
if [[ $1 == -h ]]
then
    `less calculator_help`
else
    echo "Enter Two numbers : "
read a
read b
```

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.

/etc/passwd file


```
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin)
:/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
```

```
fish /home/revant/Documents/ShellScripting
File Edit View Search Terminal Help
└─>$ bash Q5.sh /etc/passwd
Totaluid is 70462
Totalgid is 397571
gid is greater
└─[revant@revant:~/D/ShellScripting]─
> |
```

```
File Edit View Search Terminal Help
#!/bin/bash
i=0
while read line
do
    name=$line
    i=`expr $i + 1`
    uid=`head -n $i $1 | tail -n 1 | cut -d ":" -f 3`
    gid=`head -n $i $1 | tail -n 1 | cut -d ":" -f 4`
    totaluid=`expr $totaluid + $uid`
    totalgid=`expr $totalgid + $gid`
done < $1
echo "Totaluid is $totaluid"
echo "Totalgid is $totalgid"
if [ $totaluid -gt $totalgid ]
then
    echo "uid is greater"
else
    echo "gid is greater"
fi
~
~
```

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

```
#!/bin/bash
echo `ls ~/`
for i in `ls ~/`
do
    if [[ $i != "directories" && $i != "files" ]]
    then
        if [ -f $i ]
        then
            `mv $i ~/files/$i`
        fi
        if [ -d $i ]
        then
            `mv $i ~/directories/$i`
        fi
    fi
done
```

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.

```

[revant@revant:~/D/ShellScripting]-[03:04:30 IST]-[G:master]
->$ cat abc.txt
hello
my
name
is
revant
[revant@revant:~/D/ShellScripting]-[03:04:34 IST]-[G:master]
->$ bash Q8.sh ab 12 abc.txt
[revant@revant:~/D/ShellScripting]-[03:04:38 IST]-[G:master]
->$ cat abc.txt
abhello12
abmy 12
abname12
abis12
abrevant12
[revant@revant:~/D/ShellScripting]-[03:04:41 IST]-[G:master]
->$ |

```

```

sed -i "s/^/$1/; s/$/$2/" $3
~
~
~

```

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.

```
[revant@revant:~/D/ShellScripting]-[03:09:48 IST]-[G:master]
└─>$ cat /tmp/abc
aa-enabled
aa-exec
baobab
base32
base64
basename
bashbug
cal
calendar
calibrate_ppa
canberra-gtk-play
cancel
captaininfo
catchsegv
catman
cautious-launcher
factor
faillog
faked-sysv
faked-tcp
fakeroot
fakeroot-sysv
fakeroot-tcp
fallocate
galera_new_cluster
galera_recovery
gamma4scanimage
gapprication
gatttool
gawk
jaotc
jar
```

```
#!/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
~
~
~
~
~
```

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

```
[revant@revant:~/D/ShellScripting]-[03:12:40 IST]-[G:master]
└─$ bash Q10.sh
Name                               Size
abc.txt                            |47
aws                                 |4096
awscliv2.zip                        |32550785
calculator_help                     |116
Q10.sh                             |83
Q5.sh                              |393
Q7.sh                              |217
Q8.sh                              |29
Q9.sh                              |132
[revant@revant:~/D/ShellScripting]-[03:13:02 IST]-[G:master]
└─$
```



```
#!/bin/bash
echo -e "Name\t\t\tSize"
ls -l | awk '{printf "%-30s|%-18s\n" , $9, $5}'
~
~
~
~
~
~
~
~
~
~
~
```