

# UNIX AND SHELL PROGRAMMING

## 4. Shell Script

**a) Write a shell script that takes a command –line argument and reports on whether it is directory, a file or something else**

**Aim:** to a shell script that takes a command –line argument and reports on whether it is directory, a file or something else

**Program:**

**[20A91A0566@Linux ~] \$ vi program.sh**

```
echo "Enter a file name:"
read file
if [ -f $ file ]
then
echo " yes it is a File"
elif [ -d $file ]
then
echo "yes it is a Directory"
else
echo "name not in the list"
fi
```

**OUTPUT:**

**[20A91A0566@linux~]\$sh program.sh**

Enter a file name:

Program.sh

Yes it is a Directory

**b) write a shell script to find Factorial of a number**

**[20A91A0566@Linux ~]\$ vi fact.sh**

```
echo "enter a number:"
read num
i=1
counter=1
fact=1
while [ $num -ge $counter ]
do
fact=`expr $fact \* $counter`
counter=`expr $counter + 1`
done
echo "the factorial of $num is : $fact"
```

**OUTPUT:**

**[20A91A0566@Linux ~]\$ sh fact.sh**

```
enter a number:
5
the factorial of 5 is : 120
```

## 5. Shell Script

a) Write a shell script that determines the period for which a specified user is working on the system.

**Aim:** to a shell script that determines the period for which a specified user is working on the system .

```
[20A91A0566@Linux ~]$ vi user.sh
```

```
echo "enter the login of the user:"
read name
logindetails=`who|grep -w "$name"|grep "tty"`
if [$? -ne 0]
then
echo "$name has not logged in yet"
exit
fi

loginhours=`echo "$logindetails"|cut -c 26,27`
loginminutes=`echo "$logindetails"|cut -c 29-30`
hournow=`date|cut -c 12,13`
minnow=`date|cut -c 15,16`
hour=`expr $loginhours-$hournow`
min=`expr $loginminute-$minnow`
echo "$name is working since $hour hrs $min minutes"
```

**output:**

```
[20A91A0566@Linux ~]$ sh user.sh
```

```
enter the login of the user:
20A91A0566
20A91A0566 is working since -11 hrs -07 minutes
```

**5 b)shell script that accepts a file name ,starting and ending line numbers as arguments and display all the lines between the given lines**

**Aim:**to a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.

**[20A91A0566@Linux ~]\$ vi displaylines.sh**

```
echo "enter a filename:"  
read file  
echo "enter the starting line:"  
read s  
echo "enter the ending line:"  
read n  
sed -n $s,$n\p $file|cat >newline  
cat newline
```

#### **OUTPUT**

**[20A91A0566@Linux ~]\$ sh displaylines.sh**

```
enter a filename:  
mss  
enter the starting line:  
1  
enter the ending line:  
4  
hi  
hello  
aditya hi  
RK hi
```

**6. Shell Script** Write a shell script that computes the gross salary of a employee according to the following rules:

**i) If basic salary is < 1500 then HRA =10% of the basic and DA =90% of the basic.**

**ii) If basic salary is >=1500 then HRA =Rs500 and DA=98% of the basic. The basic salary is entered interactively through the key board.**

**Aim:** a shell script that computes the gross salary of a employee according to the following rules

```
[20A91A0566@Linux ~] $ vi salary.sh
```

```
echo "enter basic salary:"
read bs
if [ $bs -lt 1500 ]
then
hra=`echo $bs\*10/100|bc`
da=`echo $bs\*90/100|bc`
else
hra=500
da=`echo $bs\*98/100|bc`
fi
gs=`echo $bs+$hra+$da|bc`
echo "DA $da"
echo "HRA $hra"
echo "gross salary $gs"
```

### **OUTPUT:**

```
[20A91A0566@Linux ~]$ sh salary.sh
```

```
enter basic salary:
```

```
100
```

```
DA 90
```

```
HRA 10
```

```
gross salary 200
```

**Q)GREP SCRIPT THAT ASKS FOR A WORD AND A FILE NAME AND TELLS HOW MANY LINES CONTAINS THAT FILE**

**[20A91A0566@Linux ~]\$ vi hlines.sh**

echo "enter a word:"

read w

echo "enter a file name:"

read f

no1=`grep -c "\$w" \$f`

echo "the number of lines are :"\$no1

**OUTPUT:**

**[20A91A0566@Linux ~]\$ shhlines.sh**

enter a word:

hi

enter a file name:

mss

the number of lines are :8

**Q) TO FIND LENGTH OF A STRING USING SHELL SCRIPT**

**[20A91A0566@Linux ~] \$ vi length.sh**

echo "enter a string:"

read string

l=`echo \$string|wc -c`

echo "length of string is =\$l"

**OUTPUT:**

**[20A91A0566@Linux ~]\$ sh length.sh**

enter a string:

aditya

length of string is =6

## **Q)SHELL SCRIPT TO CONCATENATE TWO STRINGS**

**[20A91A0566@Linux ~] \$ vi concatenate.sh**

```
echo "enter a first string:"  
read s1  
echo "enter a second string:"  
read s2  
s3=$s1$s2  
echo "concatenated string is $s3"
```

### **OUTPUT:**

**[20A91A0566@Linux ~]\$ sh concatenate.sh**

enter a first string:

aditya

enter a second string:

engg

concatenated string is adityaengg

**Q) Write a shell script to accept emp no, emp name, basic salary and find the DA, HRA, TA, PF, IT using the following rules**

**1. If basic salary>5000 then**

**HRA=18% OF BASICSAL**

**PF=13% OF BASICSAL**

**IT=14% OF BASICSAL**

**TA=10% OF BASICSAL**

**DA=35% OF BASICSAL**

**2. If basic salary<5000 then**

**HRA=550**

**PF=13% OF BASICSAL**

**IT=14% OF BASICSAL**

**TA=10% OF BASICSAL**

**DA=35% OF BASICSAL**

**[20A91A0566@Linux ~]\$ vi employe.sh**

```
echo "enter employee no:"
```

```
read empno
```

```
echo "enter employee name:"
```

```
read empname
```

```
echo "enter basic salary:"
```

```
read bs
```

```
if [ $bs -lt 5000 ]
```

```
then
```

```
hra=550
```

```
da=`echo $bs\*35/100|bc`
```

```
pf=`echo $bs\*13/100|bc`
```

```
it=`echo $bs\*14/100|bc`
```

```
ta=`echo $bs\*10/100|bc`
```

```
else
```

```
hra=`echo $bs\*18/100|bc`
```

```
da=`echo $bs\*35/100|bc`
```

```
pf=`echo $bs\*13/100|bc`
```

ROLL NO -20A91A0566



```
it=`echo $bs`*14/100|bc`  
ta=`echo $bs`*10/100|bc`  
fi  
gs=`echo $bs+$hra+$da+$pf+$it+$ta|bc`  
echo "DA $da"  
echo "HRA $hra"  
echo "PF $pf"  
echo "IT $it"  
echo "TA $ta"  
echo "GROSS SALARY $gs"
```

### OUTPUT:

```
[20A91A0566@Linux ~]$sh employe.sh
```

enter employee no:

123

enter employee name:

aditya

enter basic salary:

15000

DA 5250

HRA 2700

PF 1950

IT 2100

TA 1500

GROSS SALARY 28500

```
[20A91A0566@Linux ~]$sh employe.sh
```

enter employee no:

456

enter employee name:

RK

enter basic salary:

1200

ROLL NO -20A91A0566

DA 420

HRA 550

PF 156

IT 168

TA 120

GROSS SALARY 2614

## 7. Shell Script

**a) Write a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.**

Aim: to a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.

```
[20A91A0566@Linux ~]$ vi power.sh
```

```
if [ $# -ne 2 ]
```

```
then
```

```
echo "invalid number of arguments"
```

```
exit
```

```
fi
```

```
pwr=`echo $1^$2|bc`
```

```
echo "$1 raised to $2 is $pwr"
```

### OUTPUT:

```
[20A91A0566@Linux ~]$sh power.sh 2 3
```

```
2 raised to 3 is 8
```

**7 b) Write a shell script which will display Armstrong number from given arguments.**

Aim: to ashell script which will display Armstrong number from given arguments.

```
[20A91A0566@Linux ~]$ vi armstrong.sh
```

```
for n in $*
do
t=$n
sum=0
while [ $n -ne 0 ]
do
r=`expr $n % 10`
sum=`expr $sum + $r \* $r \* $r`
n=`expr $n / 10`
done
if [ $t -eq $sum ]
then
echo $t is armstrong number
else
echo $t is not armstrong number
fi
done
```

**OUTPUT:**

```
[20A91A0566@Linux ~]$sh armstrong.sh 153
```

```
153 is armstrong number
```

```
[20A91A0566@Linux ~]$sh armstrong.sh 125
```

```
125 is not armstrong number
```

## 8.Shell Script

**Write an interactive file-handling shell program. Let it offer the user the choice of copying, removing, renaming, or linking files. Once the user has made a choice, have the program ask the user for the necessary information, such as the file name, new name and so on.**

```
[20A91A0566@Linux ~]$ vi filehandling.sh
```

```
echo 1.copy
echo 2.rename
echo 3.remove
echo 4.link
echo 5.exit
echo "enter your choice"
read ch
case $ch in
1) echo "enter the source file"
read s
echo "enter the destination file"
read d
cp $s $d
;;
2) echo "enter old file name"
read of
echo "enter the new filename"
read nf
mv $of $nf
;;
3) echo "enter the filename to delete"
read df
rm $df
;;
4) echo "enter file 1"
read f1
echo "enter file 2"
```

```
read f2
ln $f1 $f2
;;
5) exit 0
;;
esac
```

## OUTPUT

```
[20A91A0566@Linux ~]$sh filehandling.sh
```

```
1.copy
2.rename
3.remove
4.link
5.exit
enter your choice
1
enter the source file
a.txt
enter the destination file
b.txt
```

```
[20A91A0566@Linux ~]$sh filehandling.sh
```

```
1.copy
2.rename
3.remove
4.link
5.exit
enter your choice
2
enter old file name
b.txt
enter the new filename
d.txt
```

