Tutorial - 4
Subject : Unix & Shell Programming

1. write a shell script to copy one file into other, display appropriate message if destination file already exist.
   Script:

```
echo "Enter source filename: "
read sname
echo "Enter destination filename: "
read dname
if [ -f $sname ]
then
        if [ -f $dname ]
        then
                echo "Destination file already exists"
                echo "Do You want to overwrite the file?(y/n)"
                read ans
                if [ $ans = 'Y' -o $ans = 'y' ]
                then
                        cp $sname $dname
                        echo "Destination file overwritten"
                else
                        echo "File not copied to Destination"
                fi
        elif [ -d $dname ]
        then
                echo "Destination type is directory"
                echo "Do you want to copy file in directory?(y/n)"
                read ans
                if [ $ans = 'Y' -o $ans = 'y' ]
                then
                        cp $sname $dname
                        echo "$sname file copied to directory $dname"
                else
                        echo "File not copied to Directory"
                fi
        else
                cp $sname $dname
                echo "$dname is the new file created"
                echo "Content of $sname is copied to $dname"
```

```
        fi
else
        echo "$sname - source file doesnot exist"
        echo "Please, Enter correct source file name"
fi
echo "Program Completed"
```

2. write a shell script to find a file with maximum size in the current directory, also print the no. of words , characters, and lines along with the contents of file.
   Script:

```
fname=`ls -lS | tr -s " " | grep '^-' | cut -d ' ' -f 9 | head -n 1`
echo "File with max size is : $fname"
echo "Contents of $fname :  "
echo
cat $fname

echo
echo
echo "Total no of lines in $fname = `wc -l < $fname`"
echo "Total no of words in $fname = `wc -w < $fname`"
echo "Total no of characters in $fname = `wc -c < $fname`"
```

3. write a shell script to display date, calender, current directory and list of files using case statement.
   Script:

```
echo "Menu"
echo "1. Date"
echo "2. Calendar"
echo "3. Current Directory"
echo "4. List of file"
echo
echo
echo -n "Enter Choice: "
read ch
case $ch in
        1)
                echo "Today's date is : `date`"
                ;;
```

```
        2)
                echo "Calendar of current month is: "
                cal
                ;;

        3)
                echo "You Current Working directory is: "
                pwd
                ;;

        4)
                echo "List of all Files in Current Directory is: "
                ls
                ;;

        *)
                echo "Wrong Choice"
                ;;
esac
```

4. write a shell script to change all .a extension file to .b in current directory.
   Script:

```
        echo "List of all files with .a extension are: "
        ls *.a 2> /dev/null

        cnt=`ls *.a 2> /dev/null | wc -w`

        if [ $cnt -gt 0 ]
        then
                for i in `ls *.a`
                do
                        echo "Do you want to change extension for: "
                        echo "$i (y/n)"
                        read ans
                        if [ $ans = 'y' -o $ans = 'Y' ]
                        then
                                echo "Extension changed to .b"
                                mv $i `echo $i | sed 's/^\(.*\)\.a$/\1.b/'`
                        else
                                echo "Extension not changed"
                        fi
                done
```

```
else
        echo "No files in current path with .a extension"
fi
```

5. write a shell script to display currently logged in users and not log in users.
   Script:

```
echo "List of currently looged in Users are: "
who | tr -s ' ' | cut -d ' ' -f 1
```

6. write a shell script to display all files of directory without using ls.
   Script:

```
echo "List of all file in current directory"
for i in `find . -maxdepth 1 -type f -print`
do
        echo $i
done
```

7. write a shell script to display message “good morning” or “good afternoon” or “good evening”, whenever you login.
   Script:

```
echo "Current Time is : `date "+%H : %M : %S"`"
h=`date +%H`
if [ $h -ge 0 -a $h -lt 12 ]
then
        echo "Good Morning, $LOGNAME"
elif [ $h -ge 12 -a $h -lt 18 ]
then
        echo "Good Afternoon, $LOGNAME"
elif [ $h -ge 18 -a $h -lt 24 ]
then
        echo "Good Evening, $LOGNAME"
fi
```

8. write a shell script to made a sum of 1 to 10 number.
   Script:

```
echo "Enter number upto which sum is to be made: "
read num
i=1
sum=0
while [ $i -le $num ]
do
        sum=`expr $sum + $i`
        i=`expr $i + 1`
```

```
done

echo "Sum of First $num numbers is : $sum"
```

9. write a shell script to obtain sum of square of first n numbers.
   Script:

```
echo "Enter number upto which sum is to be made: "
read num7
i=1
sum=0
while [ $i -le $num ]
do
    sqr=`expr $i \* $i`
    sum=`expr $sum + $sqr`
    i=`expr $i + 1`
done

echo "Sum of Square of First $num numbers is : $sum"
```

10. write a shell script to reverse the given input number.
    Script:

```
echo "Enter Number: "
read num
num1=$num
rev=0
rem=0
while [ $num1 -ne 0 ]
do
    rem=`expr $num1 % 10`
    num1=`expr $num1 / 10`
    rev=`expr $rev \* 10 + $rem`
done
echo "Reverse number of $num is $rev"
```

11. write a shell script to generate 10 even number.
    Script:

```
echo -n "Enter number: "
read num1
i=1
i1=1
while [ $i1 -le $num1 ]
do
```

```
        if test `expr $i % 2` -eq 0
        then
                echo "Even number $i1 is : $i"
                i1=`expr $i1 + 1`
        fi
        i=`expr $i + 1`
done
```

12. write a shell script to generate Fibonacci series of given number.

Script:

```
echo -n "Enter number for fibonacci series: "
read num
a=0
b=1
sum=0
i=1
echo -n "$a "
echo -n "$b "
while [ $i -le $num ]
do
        sum=`expr $a + $b`
        echo -n "$sum "
        a=$b
        b=$sum
        i=`expr $i + 1`
done
echo
```

13. write a shell script to find all prime numbers within 1 to 200.

Script:

```
echo -n "Enter num from which prime numbers to be found: "
read num1
echo -n "Enter num upto which prime numbers to be found: "
read num2
flag=0
echo "All prime numbers between $num1 and $num2 are: "
while [ $num1 -le $num2 ]
do
        i=2
        while [ $i -lt $num1 ]
        do
                if test `expr $num1 % $i` -eq 0
```

```
                then
                        flag=1
                        break
                fi
                i=`expr $i + 1`
        done
        if test $flag -eq 0
        then
                echo "$num1 is prime"
        fi
        flag=0
        num1=`expr $num1 + 1`
done
```

14. write a shell script to input a year and check whether a year is leap year or not.

Script:

```
echo -n "Enter Year: "
read year
if test `expr $year % 4` -eq 0
then
        if [ `expr $year % 100` -eq 0 ]
        then
                if [ `expr $year % 400` -eq 0 ]
                then
                        echo "$year is a leap year"
                else
                        echo "$year is not a leap year"
                fi
        else
                echo "$year is a leap year"
        fi
else
        echo "$year is not a leap year"
fi
```

15. write a shell script to find no. of words from given file without using wc command.

Script:

```
echo "Enter Filename: "
read fname
cnt=0
if [ -f $fname ]
```

```
then
        str=`cat $fname`
        for i in $str
        do
                cnt=`expr $cnt + 1`
        done
        echo "Total Words = $cnt"
else
        echo "File does not exist"
fi
```

16. write a shell script to accept a string and reverse it.

Script:

```
echo -n "Enter a String: "
read str
if test -z "$str"
then
        echo "String is Null"
else
        len=`expr "$str" : '.*'`
        echo "Length of String is : $len"
        i=1
        while [ $len -gt 0 ]
        do
                echo -n "`echo $str | cut -c $len`"
                len=`expr $len - 1`
        done
        echo
fi
```

17. write a shell script to input a word in lower case and convert it into upper **case.**

Script:

```
echo "Enter a String: "
read str
if test -n "$str"
then
        echo "String is $str"
        echo "String after case conversion is: "
        echo "$str" | tr [a-zA-Z] [A-Za-z]
else
        echo "String is Null"
fi
```

18. write a shell script to find all vowels from given string.

Script:

```
echo -n "Enter String: "
read str
if test -n "$str"
then
        len=`expr "$str" : '.*'`
        i=1
        while [ $i -le $len ]
        do
                ch=`echo "$str" | cut -c $i`
                if test $ch = "a" -o $ch = "A" -o $ch = "e" -o $ch = "E" -o
$ch = "i" -o $ch = "I" -o $ch = "o" -o $ch = "O" -o $ch = "u" -o $ch =
"u"
then
                        echo "$ch is a vowel at position $i"
                fi
                i=`expr $i + 1`
        done
else
        echo "String is Null"
fi
```

19. write a shell script to check whether a given file is exist or not , if it is then display it's permissions.

Script:

```
echo -n "Enter filename: "
read fname
if [ -f $fname ]
then
        echo "$fname has `ls -l $fname | cut -c 2-4` permission for
owner"
        echo "$fname has `ls -l $fname | cut -c 5-7` permission for
group"
        echo "$fname has `ls -l $fname | cut -c 8-10` permission for
others"
        echo "Overall file permission are : "
        ls -l $fname | cut -c 2-10
else
        echo "$fname file does not exist"
fi
```

20. write a shell script to perform following.
    a) to display 11 to 15 lines form given file
    b) produce the list of birth years, along with the no. of people born in that year.
    c) remove duplicate records from the file.
    d) sort the list based on month of birthday.

Script:

```
choice=1
while [ $choice = "1" ]
do
    clear
    echo "******Menu*******"
    echo "1. Display 11 to 15 lines"
    echo "2. Display Birth Year wise list"
    echo "3. Remove duplicate records"
    echo "4. Sort based on Birth Month"
    echo "5. Exit"
    echo
    echo -n "Enter Choice"
    read ch
    case $ch in
        1)
            echo "Lines from 11 to 15 are: "
            sed -n '11,15p' emp.lst
            ;;

        2)
            echo "Birth Year wise List is: "
            cut -d '/' -f 3 emp.lst | cut -d '|' -f 1 | sort | uniq –c
            ;;

        3)
            echo "After removing duplicate records: "
            sort emp.lst | uniq -u
            ;;

        4)
            echo "After Sorting based on Month of Birthyear:"
            sort -t '|' -k 5.4,5.5 emp.lst
            ;;

        5)
```

```
                exit 0
                ;;

        *)
                echo "Wrong choice"
                ;;
    esac
    echo "Do You want to continue(1/0)? "
    read choice
done
```