**Lab Exercise-4**

1) Write a shell script to ask your name, program name and enrollment number and print it on the screen.

Echo “Enter your name:”  
Read Name  
Echo “Enter your program name:”  
Read Prog  
Echo “Enter your enrollment number:”  
Read Enroll  
Clear  
Echo “Details you entered”  
Echo Name: $Name  
Echo Program Name: $Prog  
Echo Enrolment Number: $Enroll

2) Write a shell script to find the sum, the average and the product of the four integers entered

Echo “Enter four integers with space between”  
Read a b c d  
Sum =`expr $a + $b + $c + $d`  
Avg =`expr $sum / 4`  
Dec =`expr $sum % 4`  
Dec =`expr \ ($dec \\* 1000 \) / 4`  
Product =`expr $a \\* $b \\* $c \\* $d`  
Echo Sum = $sum  
Echo Average = $avg. $dec  
Echo Product = $product

3) Write a shell program to exchange the values of two variables

Echo “Enter value for a:”  
Read a  
Echo “Enter value for b:”  
Read b  
Clear  
Echo “Values of variables before swapping”  
Echo A = $a  
Echo B = $b  
Echo Values of variables after swapping  
a = `expr $a + $b`  
b = `expr $a – $b`  
a = `expr $a – $b`  
Echo A = $a  
Echo B = $b

4) Find the lines containing a number in a file

Echo “Enter filename”  
Read filename  
Grep [0-9] $filename

5) Write a shell script to display the digits which are in odd position in a given 5 digit number

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Echo “Enter a 5 digit number”  
Read num  
n = 1  
while [ $n -le 5 ]  
do  
a = `Echo $num | cut -c $n`  
Echo $a  
n = `expr $n + 2`  
done

6) Write a shell program to reverse the digits of five digit integer

Echo “Enter a 5 digit number”  
Read num  
n = $num  
rev=0  
while [ $num -ne 0 ]  
do  
r = `expr $num % 10`  
rev = `expr $rev \\* 10 + $r`  
num = `expr $num / 10`  
done  
Echo “Reverse of $n is $rev”

7) Write a shell script to find the largest among the 3 given numbers

Echo “Enter 3 numbers with spaces in between”  
Read a b c  
1 = $a  
if [ $b -gt $l ]  
then  
l = $b  
fi  
if [ $c -gt $l ]  
then  
l = $c  
fi  
Echo “Largest of $a $b $c is $l”

8) Write a shell program to search for a given number from the list of numbers provided using binary search method

Echo “Enter array limit”  
Read limit  
Echo “Enter elements”  
n = 1  
while [ $n -le $limit ]  
do  
Read num  
eval arr$n = $num  
n = `expr $n + 1`  
done  
Echo “Enter key element”  
Read key  
low = 1  
high = $n  
found = 0  
while [ $found -eq 0 -a $high -gt $low ]  
do  
mid = `expr \( $low + $high \) / 2`  
eval t = \$arr$mid  
if [ $key -eq $t ]  
then  
found = 1  
elif [ $key -lt $t ]  
then  
high = `expr $mid – 1`  
else  
low = `expr $mid + 1`  
fi  
done  
if [ $found -eq 0 ]  
then  
Echo “Unsuccessful search”  
else  
Echo “Successful search”  
fi

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9) Write a shell program to concatenate two strings and find the length of the resultant string

Echo “Enter first string:”  
Read s1  
Echo “Enter second string:”  
Read s2  
s3 = $s1$s2  
len = `Echo $s3 | wc -c`  
len = `expr $len – 1`  
Echo “Concatenated string is $s3 of length $len ”

10) Write a shell program to find the position of substring in given string

Echo “Enter main string:”  
Read main  
l1 = `Echo $main | wc -c`  
l1 = `expr $l1 – 1`  
Echo “Enter sub string:”  
Read sub  
l2 = `Echo $sub | wc -c`  
l2 = `expr $l2 – 1`  
n = 1  
m = 1  
pos = 0  
while [ $n -le $l1 ]  
do  
a = `Echo $main | cut -c $n`  
b = `Echo $sub | cut -c $m`  
if [ $a = $b ]  
then  
n = `expr $n + 1`  
m = `expr $m + 1`  
pos = `expr $n – $l2`  
r = `expr $m – 1`  
if [ $r -eq $l2 ]  
then  
break  
fi  
else  
pos = 0  
m = 1  
n = `expr $n + 1`  
fi  
done  
Echo “Position of sub string in main string is $pos”

11) Write a shell program to display the alternate digits in a given 7 digit number starting from the first digit

Echo “Enter a 7 digit number”  
Read num  
n = 1  
while [ $n -le 7 ]  
do  
a = `Echo $num | cut -c $n`  
Echo $a  
n = `expr $n + 2`  
done

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12) Write a shell program to find the gcd for the 2 given numbers

Echo “Enter two numbers with space in between”  
Read a b  
m = $a  
if [ $b -lt $m ]  
then  
m = $b  
fi  
while [ $m -ne 0 ]  
do  
x = `expr $a % $m`  
y = `expr $b % $m`  
if [ $x -eq 0 -a $y -eq 0 ]  
then  
Echo “gcd of $a and $b is $m”  
break  
fi  
m = `expr $m – 1`  
done

13) Write a shell program to check whether a given string is palindrome or not.

Echo “Enter a string to be entered:”  
Read str  
Echo  
len = `Echo $str | wc -c`  
len = `expr $len – 1`  
i = 1  
j = `expr $len / 2`  
while test $i -le $j  
do  
k = `Echo $str | cut -c $i`  
l = `Echo $str | cut -c $len`  
if test $k != $l  
then  
Echo “String is not palindrome”  
exit  
fi  
i = `expr $i + 1`  
len = `expr $len – 1`  
done  
Echo “String is palindrome”

14) Write a shell program to find the sum of the series sum=1+1/2+…+1/n

Echo “Enter a number”  
Read n  
i = 1  
sum = 0  
while [ $i -le $n ]  
do  
sum = `expr $sum + \ ( 10000 / $i \)`  
i = `expr $i + 1`  
done  
Echo “Sum n series is”  
i = 1  
while [ $i -le 5 ]  
do  
a = `Echo $sum | cut -c $i`  
Echo -e “$a\c”  
if [ $i -eq 1 ]  
then  
Echo -e “.\c”  
fi  
i = `expr $i + 1`  
done

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15) Write a shell script to find the smallest of three numbers

Echo “Enter 3 numbers with spaces in between”  
Read a b c  
s = $a  
if [ $b -lt $s ]  
then  
s = $b  
fi  
if [ $c -lt $s ]  
then  
s = $c  
fi  
Echo “Smallest of $a $b $c is $s”

16) Write a shell program to add, subtract and multiply the 2 given numbers passed as command line arguments

add = `expr $1 + $2`  
sub = `expr $1 – $2`  
mul = `expr $1 \\* $2`  
Echo “Addition of $1 and $2 is $add”  
Echo “Subtraction of $2 from $1 is $sub”  
Echo “Multiplication of $1 and $2 is $mul”

17) Write a shell program to convert all the contents into the uppercase in a particular file

Echo “Enter the filename”  
Read filename  
Echo “Contents of $filename before converting to uppercase”  
Echo —————————————————-  
cat $filename  
Echo —————————————————-  
Echo “Contents of $filename after converting to uppercase”  
Echo —————————————————  
tr ‘[a-z]’ ‘[A-Z]’ < $filename Echo ————————————————— 18) Write a shell program to count the characters, count the lines and the words in a particular file Echo “Enter the filename” Read file w = `cat $file | wc -w` c = `cat $file | wc -c` l = `grep -c “.” $file` Echo “Number of characters in $file is $c” Echo “Number of words in $file is $w” Echo “Number of lines in $file is $l” 19) Write a shell program to concatenate the contents of 2 files Echo “Enter first filename” Read first Echo “Enter second filename” Read second cat $first > third  
cat $second >> third  
Echo “After concatenation of contents of entered two files”  
Echo —————————————————-  
cat third | more  
Echo —————————————————-

20) Write a shell program to count number of words, characters, white spaces and special symbols in a given text

Echo “Enter a text”  
Read text  
w = `Echo $text | wc -w`  
w = `expr $w`  
c = `Echo $text | wc -c`  
c = `expr $c – 1`  
s = 0  
alpha = 0  
j = ` `  
n = 1  
while [ $n -le $c ]  
do  
ch = `Echo $text | cut -c $n`  
if test $ch = $j  
then  
s = `expr $s + 1`  
fi  
case $ch in  
a|b|c|d|e|f|g|h|i|j|k|l|m|n|o|p|q|r|s|t|u|v|w|x|y|z) alpha=`expr $alpha + 1`;;  
esac  
n = `expr $n + 1`  
done  
special = `expr $c – $s – $alpha`  
Echo “Words = $w”  
Echo “Characters = $c”  
Echo “Spaces = $s”  
Echo “Special symbols = $special”

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24) Write a shell program to find factorial of given number

Echo “Enter a number”  
Read n  
fact = 1  
i = 1  
while [ $i -le $n ]  
do  
fact = `expr $fact \\* $i`  
i = `expr $i + 1`  
done  
Echo “Factorial of $n is $fact”

25) Write a shell script to find the average of the numbers entered in command line

n = $#  
sum = 0  
for i in $\*  
do  
sum = `expr $sum + $i`  
done  
avg = `expr $sum / $n`  
Echo “Average=$avg”

26) Write a shell script to sort the given numbers in descending order using Bubble sort

Echo  
i = 1  
k = 1  
Echo “Enter no. of integers to be sorted”  
Read n  
Echo “Enter the numbers”  
while [ $i -le $n ]  
do  
Read num  
x[$k] = `expr $num`  
i = `expr $i + 1`  
k = `expr $k + 1`  
done  
x[$k] = 0  
k = 1  
Echo “The number you have entered are”  
while [ ${x[$k]} -ne 0 ]  
do  
Echo “${x[$k]}”  
k = `expr $k + 1`  
done  
k = 1  
while [ $k -le $n ]  
do  
j = 1  
while [ $j -lt $n ]  
do  
y = `expr $j + 1`  
if [ ${x[$j]} -gt ${x[$y]} ]  
then  
temp = `expr ${x[$j]}`  
x[$j] = `expr ${x[$y]}`  
x[$y] = `expr $temp`  
fi  
j = `expr $j + 1`  
done  
k = `expr $k + 1`  
done  
k = 1  
Echo “Number in sorted order…”  
while [ ${x[$k]} -ne 0 ]  
do  
Echo “${x[$k]}”  
k = `expr $k + 1`  
done

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27) Write a shell program to find the sum of all the digits in a given 5 digit number

Echo “Enter a 5 digit number”  
Read num  
sum = 0  
while [ $num -ne 0 ]  
do  
r = `expr $num % 10`  
sum = `expr $sum + $r`  
num = `expr $num / 10`  
done  
Echo “sum = $sum”

28) Write a shell script to generate fibonacci series

Echo “how many fibonacci numbers do u want ”  
Read limit  
a = 0  
b = 1  
d = 1  
Echo “————————————————————-”  
Echo -n $a  
Echo -n ” ”  
while test $d -le $limit  
do  
c = `expr ${a} + ${b}`  
Echo -n $c  
Echo -n ” ”  
b = $a  
a = $c  
d = `expr $d + 1`  
done

29) Shell Script to check whether given year is leap year or not

Echo -n “Enter the year(yyyy) to find leap year :- ”  
Read year  
d = `expr $year % 4`  
b = `expr $year % 100`  
c = `expr $year % 400`  
if [ $d -eq 0 -a $b -ne 0 -o $c -eq 0 ]  
then  
Echo “year is leap year”  
else  
Echo “not leap year”  
fi

30) Shell Script to print alternate digit when a 7 digit number is passed

Echo -n “Enter a 7 digit number:- ”  
Read number  
len = `echo $number | wc -c`  
flag = 1  
while test $flag -le $len  
do  
Echo $number | cut -c$flag  
flag = `expr $flag + 2`  
done

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31) Shell script to find average of number at given command line

total = 0  
count = $#  
for i #or u can append ( in $\*) to get same result.  
do  
total = `expr $total + $i`  
done  
avg1 = `expr $total / $count`  
avg2 = `expr $total % $count`  
avg2 = `expr $avg2 \\* 100 / $count`  
Echo “The Average is :- $avg1.$avg2”

32) Shell Script to reverse a inputted string and show it

Echo -n “enter the string u want to reverse:-”  
Read string  
len = `Echo -n $string |wc -c`  
Echo “no of character is:- $len”  
while test $len -gt 0  
do  
rev = $rev`Echo $string |cut -c $len`  
len = `expr $len – 1`  
done  
Echo “the reverse string is:-$rev ”

33) Shell script to find occurrence of particular digit in inputted number

Echo -n “enter any number:-”  
Read number  
Echo -n “which digit number do u want to count:-”  
Read digit  
len = `echo -n $number |wc -c`  
Echo “the length of number is:-$len”  
count = 0  
while test $len -gt 0  
do  
flag = `Echo -n $number |cut -c $len`  
if test $flag -eq $digit  
then  
count = `expr $count + 1`  
fi  
len = `expr $len – 1`  
done  
Echo “|$digit| occurred |$count| times in number ($number)”  
34) Shell Script to find whether number given is even or odd

Echo -n “enter any integer number to find even and odd :-”  
Read number  
rem = `expr $number % 2`  
if test $rem -eq 0  
then  
Echo “number is even”  
else  
Echo “number is odd”  
fi

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35) write shell script to generate fibonacci series  
#!/bin/bash  
#shell script to generate fibonacci series  
echo “how many fibonacci numbers do u want ”  
read limit  
a=0  
b=1  
d=1  
echo “————————————————————-”  
echo -n $a  
echo -n ” ”  
while test $d -le $limit  
do  
c=`expr ${a} + ${b}`  
echo -n $c  
echo -n ” ”  
b=$a  
a=$c  
d=`expr $d + 1`  
done

36) write shell script to find wheather a particular year is a leap year or not

#!/bin/bash  
#shell script to find wheather a particular year is a leap year or not  
echo -n “Enter the year(yyyy) to find leap year :- ”  
read year  
d=`expr $year % 4`  
b=`expr $year % 100`  
c=`expr $year % 400`  
if [ $d -eq 0 -a $b -ne 0 -o $c -eq 0 ]  
then  
echo “year is leap year”  
else  
echo “not leap year”  
fi

37) write shell script to print alternate digits when a 7 digit number is passed as input

#!/bin/bash  
#shell script to print alternate digits when a 7 digit number is passed as input  
echo -n “Enter a 7 digit number:- ”  
read number  
len=`echo $number | wc -c`  
flag=1  
while test $flag -le $len  
do  
echo $number | cut -c$flag  
flag=`expr $flag + 2`  
done

38) write shell script to find average of numbers given at command line

#Tue May 28 11:12:41 MUT 2002  
total=0  
count=$#  
for i #or u can append ( in $\*) to get same result.  
do  
total=`expr $total + $i`  
done  
avg1=`expr $total / $count`  
avg2=`expr $total % $count`  
avg2=`expr $avg2 \\* 100 / $count`  
echo “The Average is :- $avg1.$avg2”

39) write shell script to find wheather a given word is palindrome or not

#Sun Jun 9 12:06:14 MUT 2002 –By Mukesh  
clear  
echo -n “enter the name :-”  
read name  
len=`echo -n $name | wc -c`  
echo “Length of the name is :-“$len  
while [ $len -gt 0 ]  
do  
rev=$rev`echo $name | cut -c$len`  
len=`expr $len – 1`  
done  
echo “Reverse of the name is :-“$rev  
if [ $name = $rev ]  
then echo “It is a palindrome”  
else  
echo “It is not a palindrome”  
fi

40) write shell script to reverse a inputed string and show it.

#!/bin/bash  
#shell script to reverse a inputed string and show it.

echo -n “enter the string u want to reverse:-”  
read string  
len=`echo -n $string |wc -c`  
echo “no of character is:- $len”  
while test $len -gt 0  
do  
rev=$rev`echo $string |cut -c $len`  
len=`expr $len – 1`  
done  
echo “the reverse string is:-$rev ”

41) write shell script to count occurence of a perticular digit in inputted number.

#!/bin/bash  
#shell script to count occurence of a perticular digit in inputted number.

echo -n “enter any number:-”  
read number  
echo -n “which digit number do u want to count:-”  
read digit  
len=`echo -n $number |wc -c`  
echo “the length of number is:-$len”  
count=0  
while test $len -gt 0  
do  
flag=`echo -n $number |cut -c $len`  
if test $flag -eq $digit  
then  
count=`expr $count + 1`  
fi  
len=`expr $len – 1`  
done  
echo “|$digit| occured |$count| times in number ($number)”

42) write shell script to find even or odd.

#!/bin/bash  
#shell script to find even or odd.

echo -n “enter any integer number to find even and odd :-”  
read number  
rem=`expr $number % 2`  
if test $rem -eq 0  
then  
echo “number is even”  
else  
echo “number is odd”  
fi