

Q. Write an awk script to print all even numbers in a given range.

```
echo "Enter a start and end of the range"
read start

echo "Enter a end of the range"
read end

awk -v start="$start" -v end="$end" 'BEGIN {
for (i=start;i<=end;i++){
    if(i%2 == 0){
        print i
    }
}
}'
```

OUTPUT

```
[student@localhost ~]$ vi even.sh
[student@localhost ~]$ chmod +x even.sh
[student@localhost ~]$ ./even.sh
Enter a start and end of the range
1
Enter a end of the range
10
2
4
6
8
10
[student@localhost ~]$ █
```

Write an awk script to develop a Fibonacci series (take user input for number of terms).

```
read -p "Enter the number of Fibonacci Terms:" n
awk -v num="$n" 'BEGIN{
    a=0;
    b=1;
    for(i = 1; i <= num; i++){
        print a;
        c = a + b;
        a = b;
        b = c;
    }
}'
```

OUTPUT:

```
[student@localhost ~]$ vi Fibonacci.sh
[student@localhost ~]$ chmod +x Fibonacci.sh
[student@localhost ~]$ ./Fibonacci.sh
Enter the number of Fibonacci Terms:10
0
1
1
2
3
5
8
13
21
34
[student@localhost ~]$
```

Write a shell script to print multiplication table of given number using while statement.

```
1 echo "Enter a number:"
2 read num
3 i=1
4 while [ $i -le 10 ]
5 do
6     echo "$num x $i = $((num*i))"
7     i=$((i+1))
8 done
```

OUTPUT:

```
Enter a number:
5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

Q. Write a shell script to compare two strings.

```
1 echo "Enter a First String: "  
2 read str1  
3 echo "Enter a Second String:"  
4 read str2  
5  
6 if [ "$str1" = "$str2" ]; then  
7     echo "Strings are equal"  
8 else  
9     echo "Strings are not equal fi"  
10 fi
```

OUTPUT:

```
Enter a First String:  
Hello  
Enter a Second String:  
Hello  
Strings are equal
```

Program 3: Shell Script to Find the Largest of Three Numbers

```
echo "Enter three number:"
read a b c

if [ $a -gt $b ] && [ $a -gt $c ]
then
    echo "$a is greater"
elif [ $b -gt $a ] && [ $b -gt $c ]
then
    echo "$b is greater"
else
    echo "$c is greater"
fi
```

Q. Write a shell script to implement menu-driven calculator using case statement.

```
echo "Enter two nubers with operator in between"
read a opr b
case $opr in
("+")echo $(( $a + $b ));;
("-")echo $(( $a - $b ));;
("*")echo $(( $a * $b ));;
("/")echo $(( $a / $b ));;
("%")echo $(( $a % $b ));;
esac
~
~
```

OUTPUT:

```
[student@localhost ~]$ vi calculater.sh
[student@localhost ~]$ chmod +u calculater.sh
[student@localhost ~]$ bash calculater.sh
Enter two nubers with operator in between
10 + 5
15
[student@localhost ~]$ bash calculater.sh
Enter two nubers with operator in between
10 - 5
5
[student@localhost ~]$ bash calculater.sh
Enter two nubers with operator in between
10 * 5
50
[student@localhost ~]$ bash calculater.sh
Enter two nubers with operator in between
10 / 5
2
[student@localhost ~]$ bash calculater.sh
Enter two nubers with operator in between
10 % 5
0
[student@localhost ~]$
```

Program 4: Shell Script for Arithmetic Operations

```
echo "Enter two number:"
read a b
sum=`expr $a + $b`
sub=`expr $a - $b`
mul=`expr $a \* $b`
div=`expr $a / $b`
#print result
echo "Addition of $a & $b is $sum"
echo "Subtraction of $a and $b is $sub"
echo "multiplication of $a and $b is $mul"
echo "Division of $a and $b is $div"
~
```

OUTPUT:

```
[student@localhost ~]$ vi arithmetic.sh
[student@localhost ~]$ bash arithmetic.sh
Enter two number:
10 5
Addition of 10 & 5 is 15
Subtraction of 10 and 5 is 5
multiplication of 10 and 5 is 50
Division of 10 and 5 is 2
[student@localhost ~]$
```

File Content:

```
Hello  
Welcome to FAMT & IT Department  
IT - Information Technolgy  
IT - 2nd Year, 4th sem  
~  
~
```

Grep commands

1.Search a String in a file

a) `grep "string to be search" filename.txt`

```
[student@localhost ~]$ vi exp9.txt  
[student@localhost ~]$ grep "IT" exp9.txt  
Welcome to FAMT & IT Department  
IT - Information Technolgy  
IT - 2nd Year, 4th sem  
[student@localhost ~]$
```

b) `grep -i "string to be search" filename.txt`

```
[student@localhost ~]$ grep -i "IT" exp9.txt  
Welcome to FAMT & IT Department  
IT - Information Technolgy  
IT - 2nd Year, 4th sem
```


2.Displaying line number

a) `grep -n "string to be search" filename.txt`

```
[student@localhost ~]$ grep -n "IT" exp9.txt
2:Welcome to FAMT & IT Department
3:IT - Information Technolgy
4:IT - 2nd Year, 4th sem
[student@localhost ~]$
```

3.Displaying lines before/after/Around match

a) `grep -B2 -i "string to be search" filename.txt`

```
[student@localhost ~]$ grep -B2 -i "IT" exp9.txt
Hello
Welcome to FAMT & IT Department
IT - Information Technolgy
IT - 2nd Year, 4th sem
```

b) `grep -A2 -i "string to be search" filename.txt`

```
[student@localhost ~]$ grep -A2 -i "IT" exp9.txt
Welcome to FAMT & IT Department
IT - Information Technolgy
IT - 2nd Year, 4th sem
```

c) `grep -C2 -i "string to be search" filename.txt`

```
[student@localhost ~]$ grep -C2 -i "IT" exp9.txt
Hello
Welcome to FAMT & IT Department
IT - Information Technolgy
IT - 2nd Year, 4th sem
```

4.Position of line in file

a) `grep -0 -b "string to be search" filename.txt`

```
[student@localhost ~]$ grep -0 -b "FAMT" exp9.txt
6:Welcome to FAMT & IT Department
[student@localhost ~]$ grep -0 -b "Hello" exp9.txt
0:Hello
[student@localhost ~]$ grep -0 -b "Year" exp9.txt
65:IT - 2nd Year, 4th sem
[student@localhost ~]$ grep -0 -b "IT" exp9.txt
6:Welcome to FAMT & IT Department
38:IT - Information Technolgy
65:IT - 2nd Year, 4th sem
[student@localhost ~]$ █
```