Shell Script

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a). Arithmetic Operation using expr

command Code:

```
cse80@localhost:~
echo "Enter two number"
read a
read b
c=`expr $((a+b))`
echo "add" $c
d=`expr $((a-b))`
echo "sub" $d
e=`expr $((a*b))`
echo "mul" $e
f=`expr $((a/b))`
echo "div" $f
g=`expr $((a%b))`
echo "mod" $g
```

Output:

```
[cse80@localhost ~]$ vi calculator.sh
[cse80@localhost ~]$ bash calculator.sh
Enter two number
5
10
add 15
sub -5
mul 50
div 0
mod 5
[cse80@localhost ~]$ bash calculator.sh
Enter two number
2
4
add 6
sub -2
mul 8
div 0
mod 2
```

b). Check leap year using if-else

```
echo "Enter a year"
read n
a=`expr $((n%4))`
b=`expr $((n%100))`
c=`expr $((n%400))`
if [ $a -eq 0 -a $b -ne 0 -o $c -eq 0 ]
then
echo "Leap Year"
else
echo "not a Leap Year"
fi
```

Output:

```
[cse80@localhost ~]$ bash leap.sh
Enter a year
12
Leap Year
[cse80@localhost ~]$ vi leap.sh
[cse80@localhost ~]$ bash leap.sh
Enter a year
2023
not a Leap Year
```

c). Reverse the number using while loop

```
echo "Enter the number"
read n
rev=0
while [ $n -gt 0 ]
do
d=`expr $n % 10`
rev=`expr $rev \* 10 + $d`
n=`expr $n / 10`
done
echo $rev
```

Output:

```
[cse80@localhost ~]$ vi reverse.sh
[cse80@localhost ~]$ sh reverse.sh
Enter the number
1234
4321
```

d). Fibonacci series using for loop

Code:

cse80@localhost:~

```
read n
n1=0
n2=1
echo $n1
echo $n2
for ((i=2;i<n;i++))
do
c=$((n1+n2))
echo $c
n1=$n2
n2=$c
done
```

Output:

```
[cse80@localhost ~]$ sh fibonacci.sh
5
0
1
1
2
3
```