LAB PROGRAMS 1 – 12

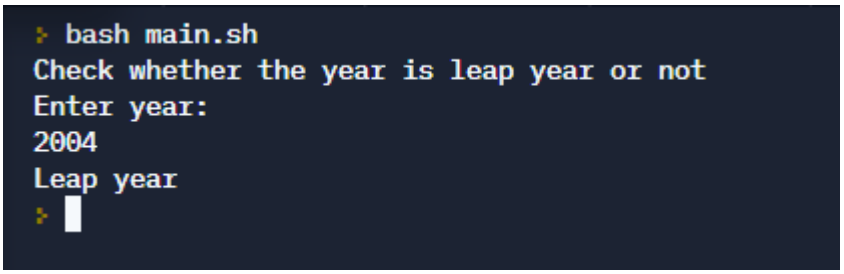
Lab Program 1:

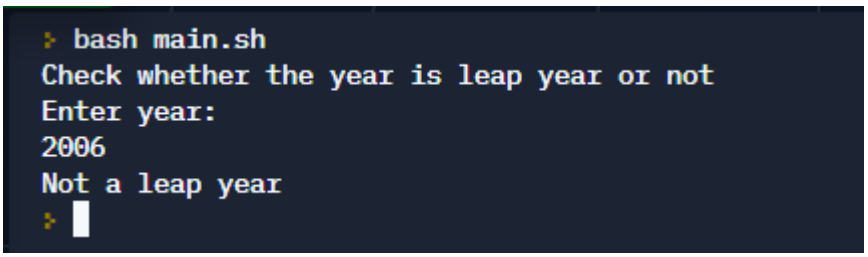
Q. Shell script to find if the given year is leap or not.

PROGRAM:

```
echo "Check whether the year is a leap year or not"
echo "Enter year: "
read year
if [ `expr $year % 4` -eq 0 ]
then
        echo "Leap year"
else
        echo "Not a leap year"
fi
```

OUTPUT:





Lab Program 2:

Q. Shell script to find the area of a circle.

PROGRAM:

```
echo "Enter radius: "
read r
echo "Area = "
echo  "3.14 * $r * $r" | bc
```

OUTPUT:

(STDIN = 10)

```
$bash -f main.sh
Enter radius:
Area =
314.00
```

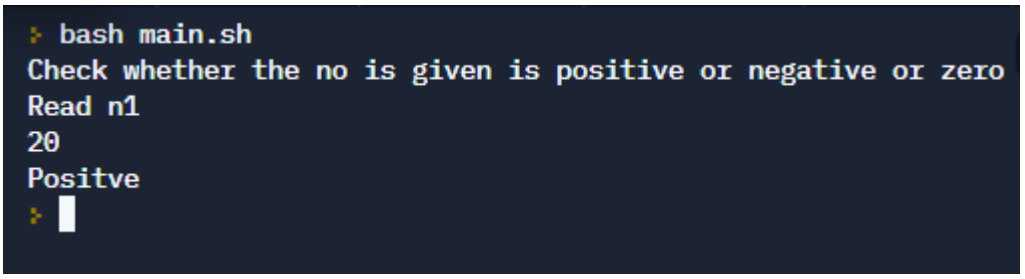
Lab Program 3:

Q. Shell script to check whether the number is zero/ positive/ negative.

PROGRAM:

```
echo "Check whether the no is given is positive or negative or zero"
echo "Read n1"
read n1
if [ $n1 -gt 0 ]
then
        echo "Positve"
elif [ $n1 -lt 0 ]
then
        echo "Negative"
else
        echo "Zero"
fi
```

OUTPUT:



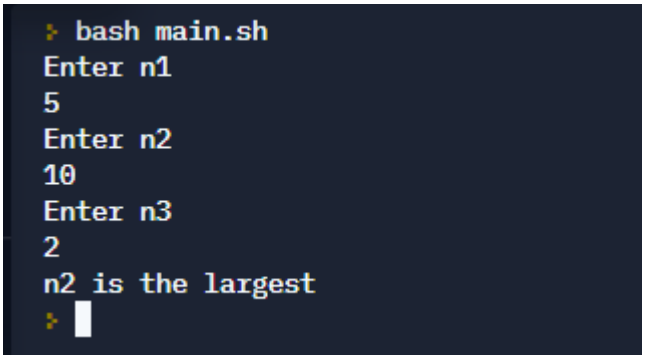
Lab Program 4:

Q. Shell script to find the biggest of three numbers.

PROGRAM:

```
echo "Enter n1"
read n1
echo "Enter n2"
read n2
echo "Enter n3"
read n3
if [ $n1 -gt $n2 -a $n1 -gt $n3 ]
then
echo "n1 is the largest"
elif [ $n2 -gt $n1 -a $n2 -gt $n3 ]
then
echo "n2 is the largest"
else
echo "n3 is largest"
fi
```

OUTPUT:



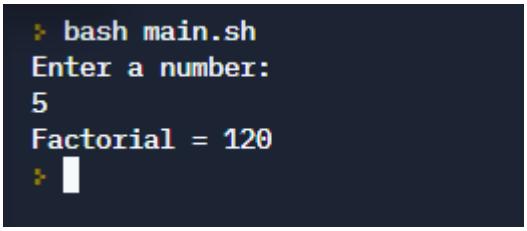
Lab Program 5:

Q. Shell script to find the factorial of a number.

PROGRAM:

```
echo "Enter a number: "
read n
f=1
while [ $n -gt 1 ]
do
f=`expr $f \* $n`
n=`expr $n - 1`
done
echo "Factorial = $f"
```

OUTPUT:



Lab Program 6:

Q. Shell script to compute the gross salary of an employee.

PROGRAM:

```
echo "Find your gross salary"
echo "Enter your basic salary: "
read s
echo "Gross salary is :"
da=`echo "0.1 * $s" | bc`
hra=`echo "0.2 * $s" | bc`
gross=`echo "$da + $hra + $s" | bc`
echo $gross
```

OUTPUT:

(STDIN = 50000)

```
$bash -f main.sh
Find your gross salary
Enter your basic salary:
Gross salary is :
65000.0
```

Lab Program 7:

Q. Shell script to convert the temperature Fahrenheit to Celsius.

PROGRAM:

```
echo "Enter the temperatire in fahrenheit"
read f
x=`expr $f - 32`
c=`echo "scale=2; $x * 5/9" | bc`
echo "$f in Fahrenheit = $c in Celcius"
```

OUTPUT:

(STDIN = 68)

```
$bash -f main.sh
Enter the temperatire in fahrenheit
68 in Fahrenheit = 20.00 in Celcius
```

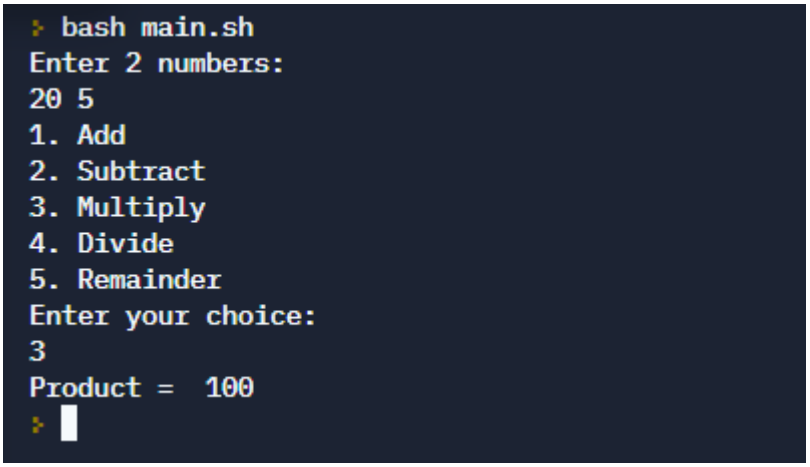
Lab Program 8:

Q. Shell script to perform arithmetic operations on given two numbers.

PROGRAM:

```
echo "Enter 2 numbers: "
read a b
echo "1. Add
2. Subtract
3. Multiply
4. Divide
5. Remainder"
echo "Enter your choice: "
read ch
case $ch in
1) echo "Sum = " `expr $a + $b`;;
2) echo "Difference = " `expr $a - $b`;;
3) echo "Product = " `expr $a \* $b`;;
4) echo "Quotient = " `expr $a / $b`;;
5) echo "Remainder = " `expr $a % $b`;;
*) echo "Invalid option"
esac
```

OUTPUT:



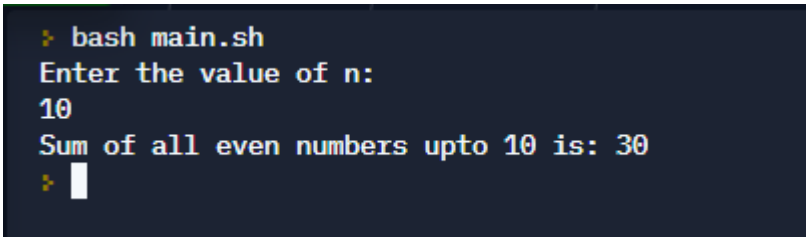
Lab Program 9:

Q. Shell script to find the sum of even numbers up to n.

PROGRAM:

```
echo "Enter the value of n: "
read n
sum=0
for (( i=0; i<=n; i=i+2 ))
do
sum=`expr $sum + $i`
done
echo "Sum of all even numbers upto $n is: $sum"
```

OUTPUT:



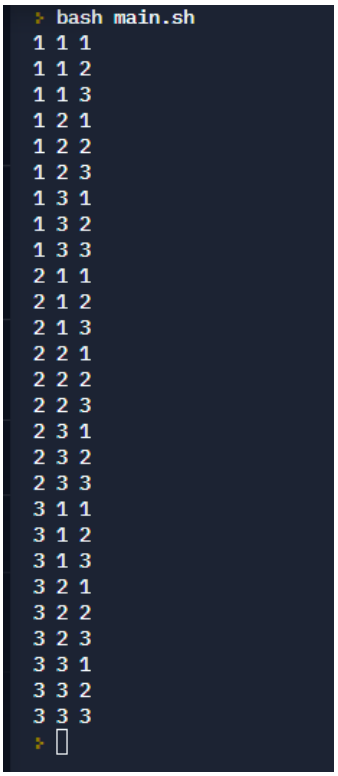
Lab Program 10:

Q. Shell script to print the combinations of numbers 123.

PROGRAM:

```
for i in 1 2 3
do
for j in 1 2 3
do
for k in 1 2 3
do
echo $i $j $k
done
done
done
```

OUTPUT:



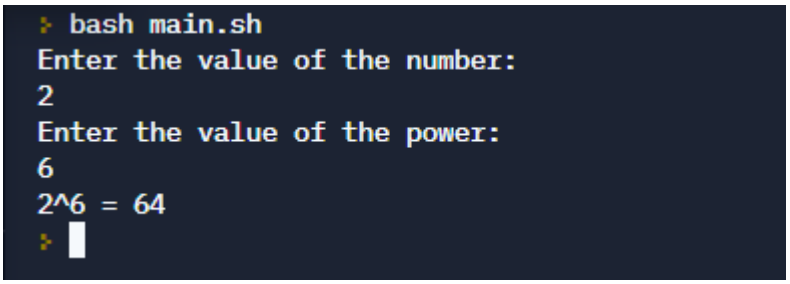
Lab Program 11:

Q. Shell script to find the power of a number.

PROGRAM:

```
echo "Enter the value of the number: "
read n
echo "Enter the value of the power: "
read p
total=1
for (( i=1; i<=p; i++ ))
do
total=`expr $total \* $n`
done
echo "$n^$p = $total"
```

OUTPUT:



Lab Program 12:

Q. Shell script to find the sum of n natural numbers.

PROGRAM:

```
echo "Enter the value of n:"
read n
sum=0
for (( i=1; i<=n; i++ ))
do
sum=`expr $sum + $i`
done
echo "Sum of $n natural numbers is: $sum"
```

OUTPUT: