VISHWAKARMA INSTITUTE OF TECHNOLOGY

COMPUTER ENGINEERING

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Division: A

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Subject: Operating System (OS)

Assignment 6

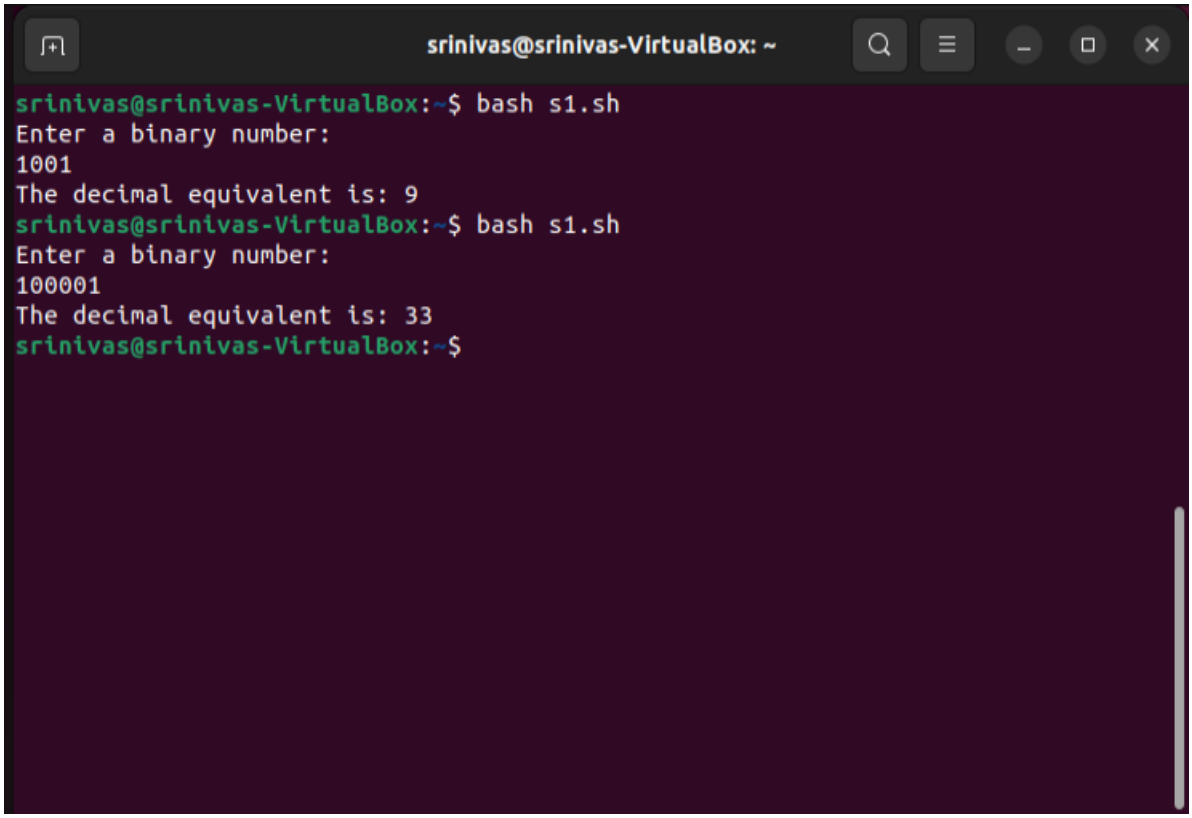
Write a shell script for

1. **To convert given binary number into decimal number.**

Code:

```
#!/bin/bash
echo "Enter a binary number: "
read binary
decimal=0
base=1
while [ $binary -gt 0 ]
do
   rem=$((binary % 10))
   decimal=$((decimal + rem * base))
   binary=$((binary / 10))
   base=$((base * 2))
done
echo "The decimal equivalent is: $decimal"
```

Output:

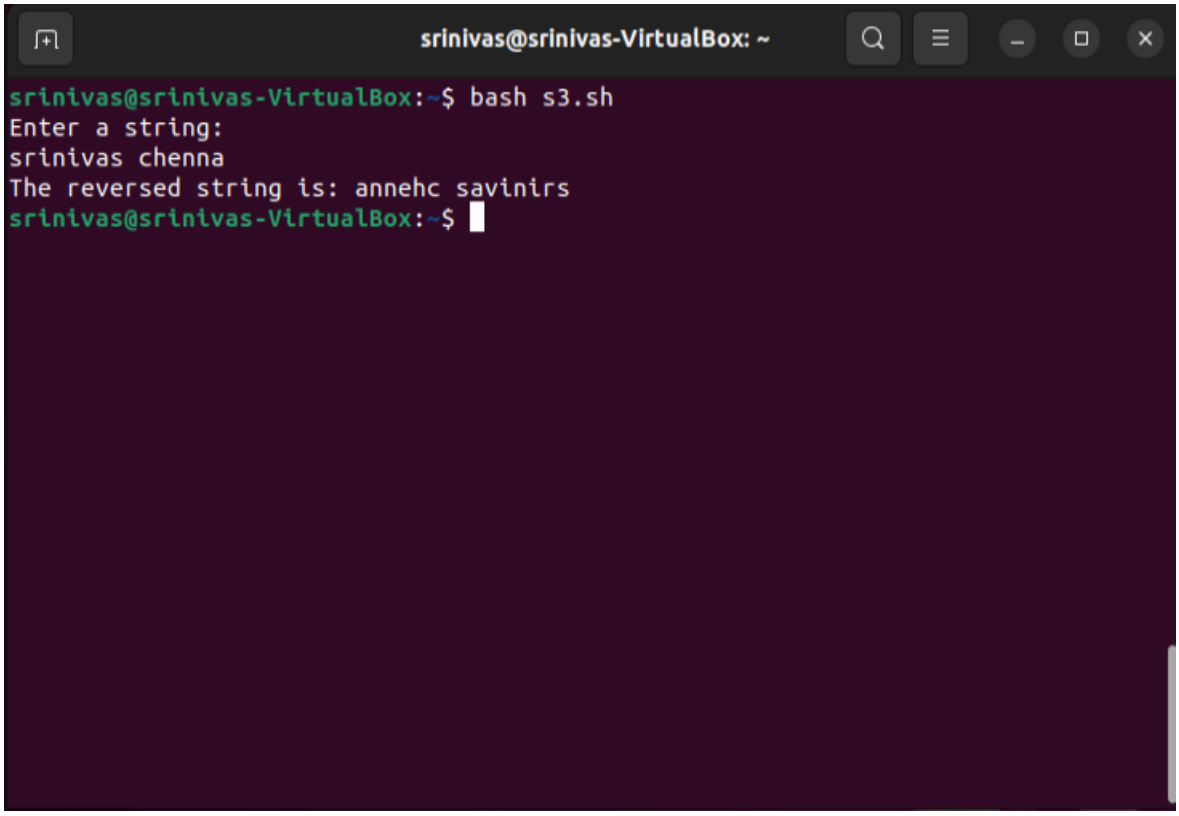


2. **To accept the strings & to reverse the string.**

Code: #!/bin/bash

```
echo "Enter a string: "
read str
len=${#str}
rev=""
for (( i=$len-1; i>=0; i-- ))
do
   rev="$rev${str:$i:1}"
done
echo "The reversed string is: $rev"
```

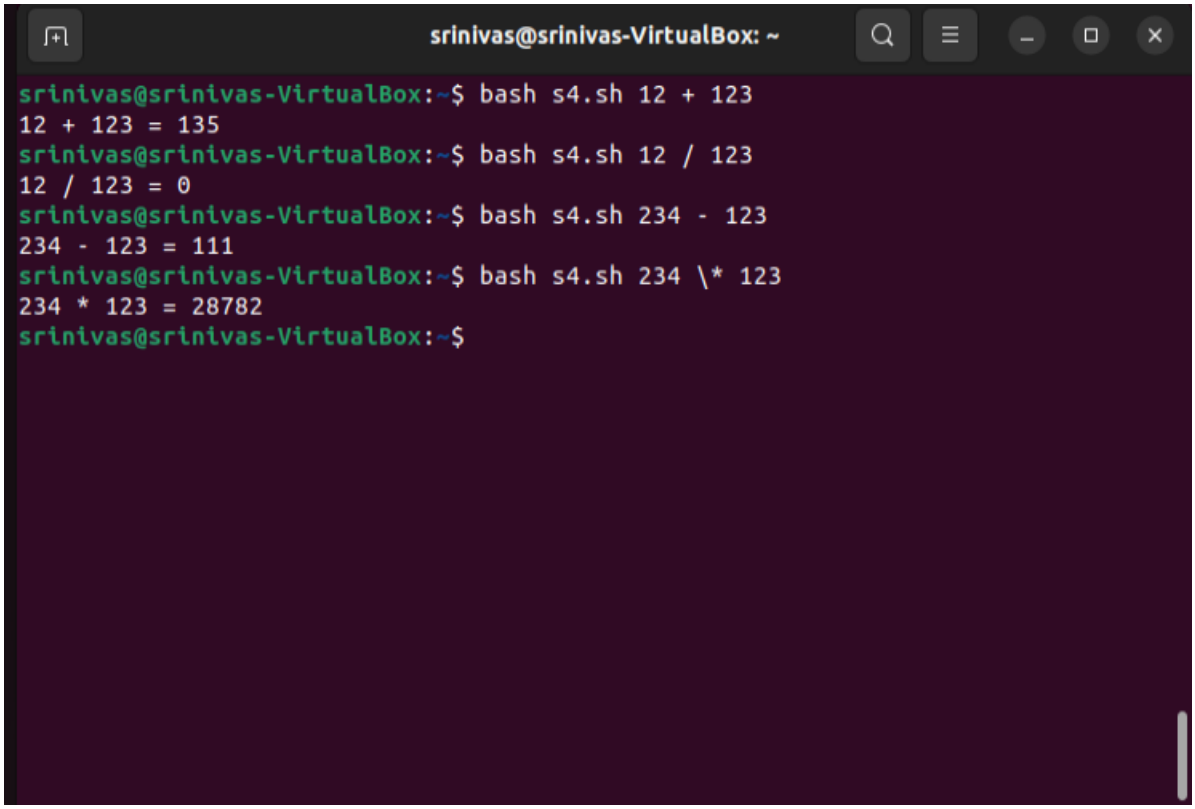
Output:



3. **To design a calculator using command line arguments.**

```
#!/bin/bash

if [ $# -ne 3 ]
then
    echo "Usage: $0 num1 operator num2"
    exit 1
fi

num1=$1
operator=$2
num2=$3

case $operator in
    +)
        result=$((num1 + num2))
```

```
        ;;
    -)
        result=$((num1 - num2))
        ;;
    \*)
        result=$((num1 * num2))
        ;;
    /)
        result=$((num1 / num2))
        ;;
    *)
        echo "Invalid operator: $operator"
        exit 1
        ;;
esac

echo "$num1 $operator $num2 = $result"
```



4. **To write a function to calculate the factorial of a number**

Code:

```
#!/bin/bash

factorial() {
   if [ $1 -eq 0 ]
   then
      echo 1
   else
      prev=$(factorial $(( $1 - 1 )))
      echo $(( $1 * $prev ))
   fi
```

}

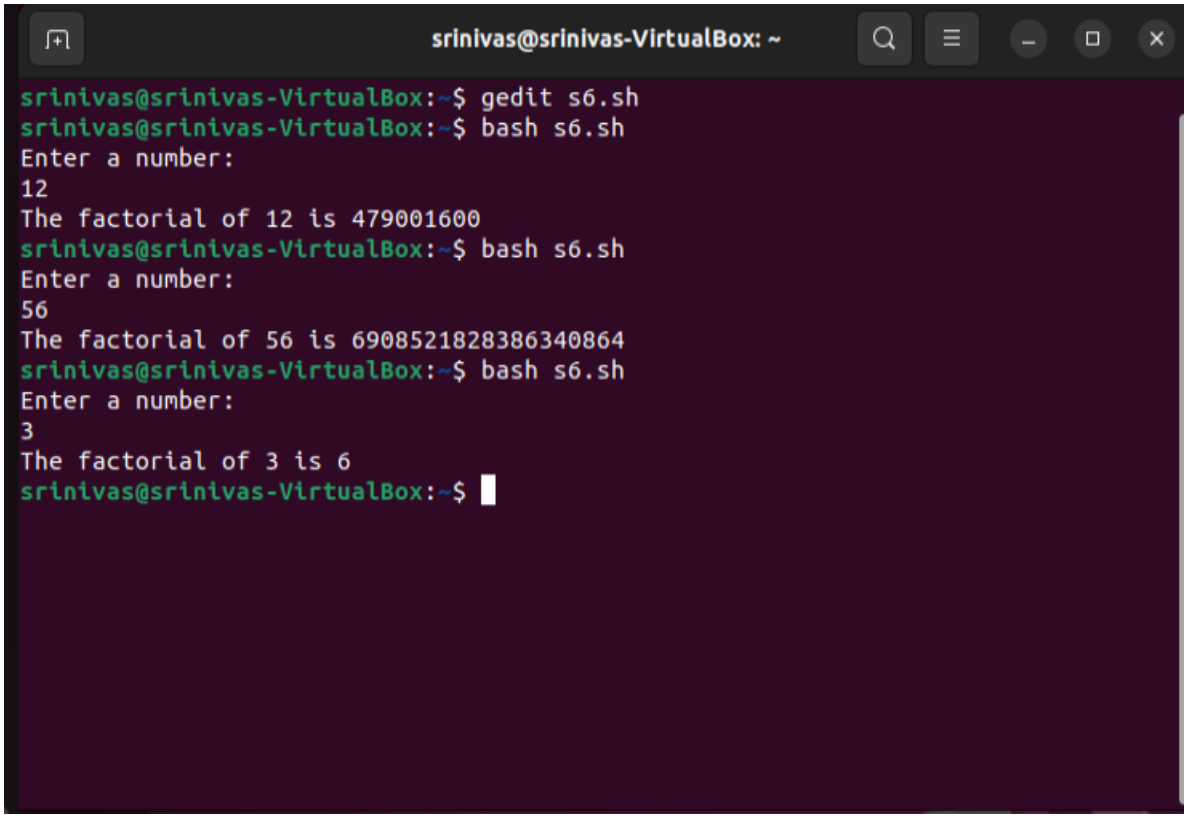
echo "Enter a number: "

read num

fact=$(factorial $num)

echo "The factorial of $num is $fact"

Output:



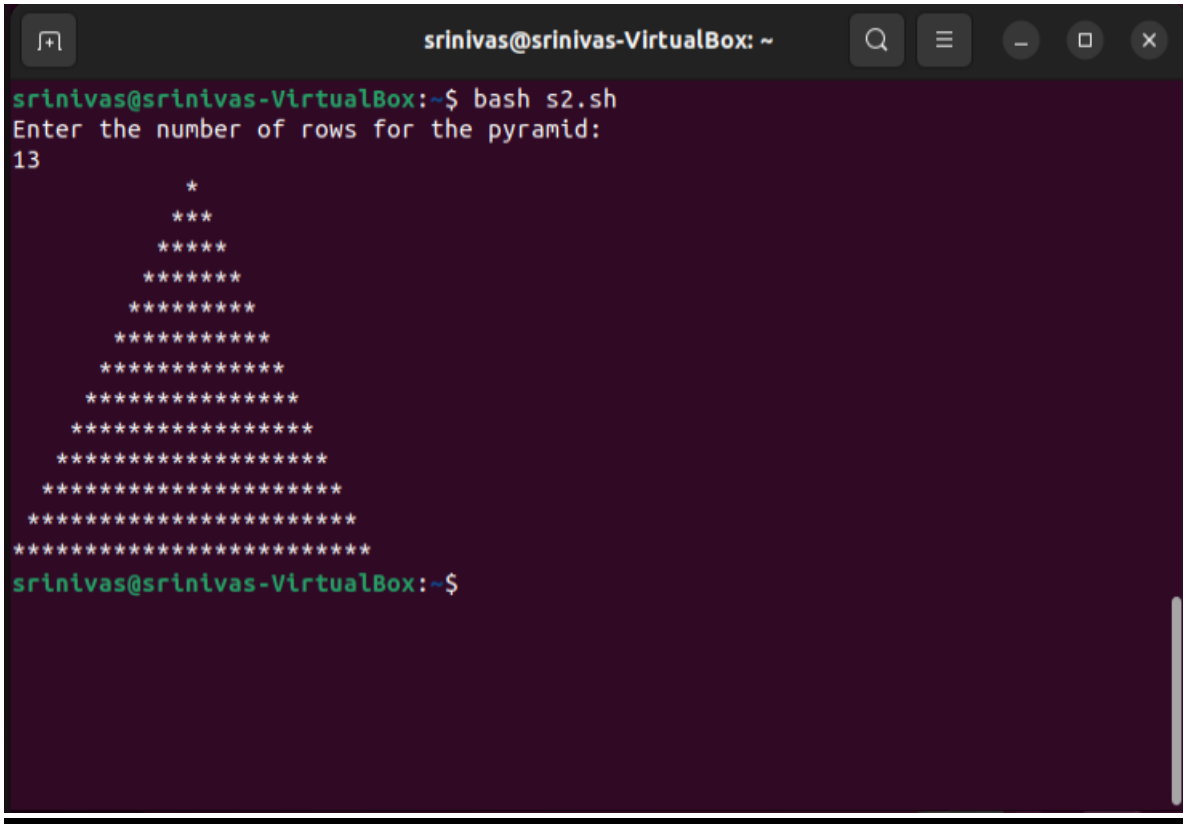
5. **To print the pyramid of *.**

Code:

#!/bin/bash

```
echo "Enter the number of rows for the pyramid: "
read rows
for (( i=1; i<=rows; i++ ))
do
   for (( j=1; j<=rows-i; j++ ))
   do
      echo -n " "
   done
   for (( k=1; k<=2*i-1; k++ ))
   do
      echo -n "*"
   done
   echo
done
```

Output:


srinivas@srinivas-VirtualBox: ~
srinivas@srinivas-VirtualBox:~$ bash s2.sh
Enter the number of rows for the pyramid:
13
*
***
*****
****
****
****
****
****
****
****
****
****
srinivas@srinivas-VirtualBox:~$