

50 Shell Scripting Codes

1. Check if File Exists

INPUT

```
#!/bin/bash
echo "Enter filename to check:"
read filename
if [ -f $filename ]; then
    echo "File '$filename' exists."
else
    echo "File '$filename' does not exist."
fi
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter filename to check:
text.txt
File 'text.txt' does not exist.
```

2. Show Disk Space Usage

INPUT

```
#!/bin/bash
echo "Disk space usage:"
du -sh *
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Disk space usage:
4.0K    ajay
4.0K    add.sh
4.0K    Desktop
4.0K    Documents
4.0K    Downloads
4.0K    Music
44K     Pictures
```

3. Check if Directory Exists

INPUT

```
#!/bin/bash
echo "Enter directory to check:"
read dir
if [ -d $dir ]; then
    echo "Directory '$dir' exists."
```

else

```
    echo "Directory '$dir' does not exist."
```

fi

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter directory to check:
ajay
Directory 'ajay' exists.
```

4. Declare and Access Elements of an Array

INPUT

#!/bin/bash

fruits=("apple" "banana" "cherry")

echo "First element: \${fruits[0]}" # apple

echo "Second element: \${fruits[1]}" # banana

echo "Third element: \${fruits[2]}" # cherry

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
First element: apple
Second element: banana
Third element: cherry
```

5. Find the Length of an Array

INPUT

#!/bin/bash

colors=("red" "green" "blue" "yellow")

echo "The length of the array is: \${#colors[@]}"

Output:

```
ajay@ajay-virtual-machine:~$ bash add.sh
The length of the array is: 4
```

6. Loop Through Array Elements

INPUT

#!/bin/bash

```
animals=("dog" "cat" "bird" "fish")
```

```
for animal in "${animals[@]}" ; do  
    echo $animal
```

```
done
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh  
dog  
cat  
bird  
fish
```

7. Append an Element to an Array

INPUT

```
#!/bin/bash
```

```
numbers=(1 2 3)
```

```
numbers+=("4")
```

```
echo "Updated array: ${numbers[@]}"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh  
Updated array: 1 2 3 4
```

8. Access All Elements of an Array

INPUT

```
#!/bin/bash
```

```
cities=("New York" "London" "Tokyo")
```

```
echo "All cities:"
```

```
for city in "${cities[@]}" ; do
```

```
    echo $city
```

```
done
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
All cities:
New York
London
Tokyo
```

9. Remove an Element from an Array

INPUT

```
#!/bin/bash
```

```
fruits=("apple" "banana" "cherry" "orange")
```

```
unset 'fruits[1]'
```

```
echo "Updated array: ${fruits[@]}"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Updated array: apple cherry orange
```

10. Array of Numbers and Perform Simple Math

INPUT

```
#!/bin/bash
```

```
numbers=(10 20 30 40)
```

```
sum=$(( ${numbers[0]} + ${numbers[1]} ))
```

```
echo "The sum of the first two numbers: $sum"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
The sum of the first two numbers: 30
```

11. Sort an Array

INPUT

```
#!/bin/bash
```

```
numbers=(5 3 8 1 7)
```

```
sorted_numbers=($(for i in "${numbers[@]"; do echo $i; done | sort))
```

```
echo "Sorted array: ${sorted_numbers[@]}"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Sorted array: 1 3 5 7 8
```

12. Print "Hello, World!"

INPUT

```
#!/bin/bash
```

```
echo "Hello, World!"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Hello World!
```

13. Reading Input from User

INPUT

```
#!/bin/bash
```

```
echo "What is your name?"
```

```
read name
```

```
echo "Hello, $name!"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
What is your name?
ajay
Hello, ajay!
```

14. Calculate the Square of a Number

INPUT

```
#!/bin/bash
```

```
echo "Enter a number:"
```

```
read num
```

```
square=$(( num * num ))
```

```
echo "The square of $num is: $square"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
10
The square of 10 is: 100
```

15. Simple If-Else Statement

INPUT

```
#!/bin/bash
```

```
echo "Enter a number:"
```

```
read num
```

```
if [[ $num -gt 10 ]]; then
    echo "$num is greater than 10"
else
    echo "$num is less than or equal to 10"
fi
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
15
15 is greater than 10
```

16. For Loop to Display Numbers 1 to 5

INPUT

```
#!/bin/bash
for i in {1..5}; do
    echo "Number $i"
done
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Number 1
Number 2
Number 3
Number 4
Number 5
```

17. While Loop to Display Even Numbers

INPUT

```
#!/bin/bash
num=2
while [[ $num -le 10 ]]; do
    echo $num
    ((num+=2))
done
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
2
4
6
8
10
```

18. Print Fibonacci Sequence

INPUT

```
#!/bin/bash
a=0
```

```
b=1
echo "Fibonacci Sequence:"
for i in {1..10}; do
    echo $a
    fn=$((a + b))
    a=$b
    b=$fn
done
Output :
```

```
ajay@ajay-virtual-machine:~$ bash add.sh
Fibonacci Sequence:
0
1
1
2
3
5
8
13
21
34
```

19. Sum of Digits of a Number

```
INPUT
#!/bin/bash
echo "Enter a number:"
read num
sum=0
while (( num > 0 )); do
    digit=$(( num % 10 ))
    sum=$(( sum + digit ))
    num=$(( num / 10 ))
done
echo "Sum of digits: $sum"
Output :
```

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
256
Sum of digits: 13
```

20. Power of a Number

```
INPUT
#!/bin/bash

echo "Enter the base number:"
read base
```

```
echo "Enter the exponent:"
```

```
read exp
```

```
result=1
```

```
for (( i=1; i<=exp; i++ )); do
```

```
    result=$(( result * base ))
```

```
done
```

```
echo "$base raised to the power of $exp is: $result"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter the base number:
5
Enter the exponent:
5
5 raised to the power of 5 is: 3125
```

21. Find the Greatest of Three Numbers

INPUT

```
#!/bin/bash
```

```
echo "Enter three numbers:"
```

```
read num1 num2 num3
```

```
if (( num1 >= num2 && num1 >= num3 )); then
```

```
    echo "$num1 is the greatest."
```

```
elif (( num2 >= num1 && num2 >= num3 )); then
```

```
    echo "$num2 is the greatest."
```

```
else
```

```
    echo "$num3 is the greatest."
```

```
fi
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter three numbers:
15 356 899
899 is the greatest.
```

22. Generate a Random Number Between Two Numbers

INPUT

```
#!/bin/bash
```

```
echo "Enter the lower bound:"
```

```
read low
```

```
echo "Enter the upper bound:"
```


read high

random_num=\$((RANDOM % (high - low + 1) + low))

echo "Random number between \$low and \$high: \$random_num"

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter the lower bound:
7
Enter the upper bound:
14
Random number between 7 and 14: 10
```

23. Display User's Home Directory

INPUT

#!/bin/bash

echo "Home Directory: \$HOME"

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Home Directory: /home/ajay
```

24. Get the Length of a String

INPUT

#!/bin/bash

str="Hello"; echo \${#str}

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
5
```

25. Print the Current User's Name

INPUT

#!/bin/bash

echo "Current user: \$(whoami)"

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Current user: ajay
```

26. Print the Last 4 Lines of a File

INPUT

#!/bin/bash

tail -n 4 myfile

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
where are you
what u want
come here
lets go
```

27. Check if a File is Empty

INPUT

```
#!/bin/bash
echo "Enter the file name:"
read file_name
if [ ! -s "$file_name" ]; then
    echo "File is empty."
else
    echo "File is not empty."
fi
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter the file name:
myfile
File is not empty.
```

28. Display the First 4 Lines of a File

INPUT

```
#!/bin/bash
echo "Enter file name:"
read file_name
head -n 4 "$file_name"
```

Output :

```
ajay@ajay-virtual-machine:~$ cat > file.txt
hi
come
stay happy
my name is this
what you want
ok bye'
```

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter file name:
file.txt
hi
come
stay happy
my name is this
```

29. Print the System's Hostname

INPUT

```
#!/bin/bash
```

```
echo "The system hostname is: $(hostname)"
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
The system hostname is: ajay-virtual-machine
```

30. Remove directory

INPUT

```
#!/bin/bash
```

```
echo "Enter the directory to remove:"
```

```
read dir_name
```

```
rmdir "$dir_name" && echo "Directory $dir_name removed successfully." || echo
"Directory $dir_name could not be removed."
```

Output :

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter the directory to remove:
ajay
Directory ajay removed successfully.
```

31. Addition

INPUT

```
#!/bin/bash
```

```
echo "Enter first number:"
```

```
read num1
```

```
echo "Enter second number:"
```

```
read num2
```

```
sum=$((num1 + num2))
```

```
echo "Sum: $sum"
```

OUTPUT

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
3
Enter second number:
5
Sum: 8
```

32. Subtraction**INPUT**

```
#!/bin/bash
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2
diff=$((num1 - num2))
echo "Difference: $diff"
```

OUTPUT

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
10
Enter second number:
6
Difference: 4
```

33. Multiplication**INPUT**

```
#!/bin/bash
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2
prod=$((num1 * num2))
echo "Product: $prod"
```

OUTPUT

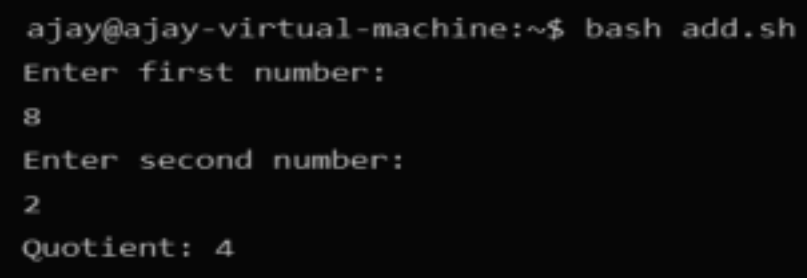
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
4
Enter second number:
5
Product: 20
```

34. Division

INPUT

```
#!/bin/bash
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2
if [ $num2 -eq 0 ]; then
    echo "Error: Division by zero!"
else
    div=$((num1 / num2))
    echo "Quotient: $div"
```

OUTPUT

A terminal window showing the execution of a bash script named 'add.sh'. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script prompts 'Enter first number:' and the user enters '8'. It then prompts 'Enter second number:' and the user enters '2'. Finally, it outputs 'Quotient: 4'.

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
8
Enter second number:
2
Quotient: 4
```

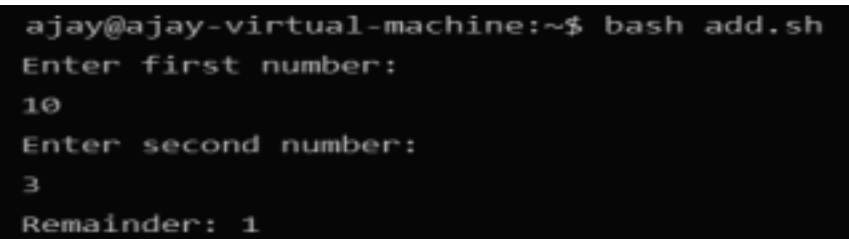
5.

35.Modulus

INPUT

```
#!/bin/bash
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2
mod=$((num1 % num2))
echo "Remainder: $mod"
```

OUTPUT

A terminal window showing the execution of a bash script named 'add.sh'. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script prompts 'Enter first number:' and the user enters '10'. It then prompts 'Enter second number:' and the user enters '3'. Finally, it outputs 'Remainder: 1'.

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
10
Enter second number:
3
Remainder: 1
```

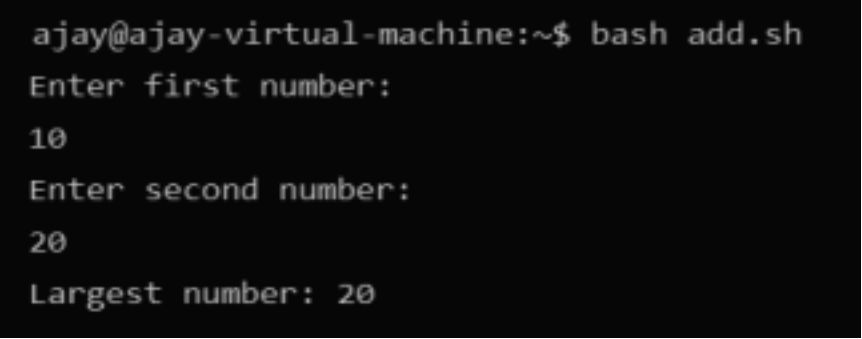
36. FindLargestofTwoNumbers

INPUT

```
#!/bin/bash
# Program to find the largest number
```

```
echo"Enterfirstnumber:"
readnum1
echo"Entersecondnumber:"
readnum2
if [ $num1 -gt$num2]; then
    echo"Largestnumber: $num1"
else
    echo"Largestnumber: $num2"
fi
```

OUTPUT



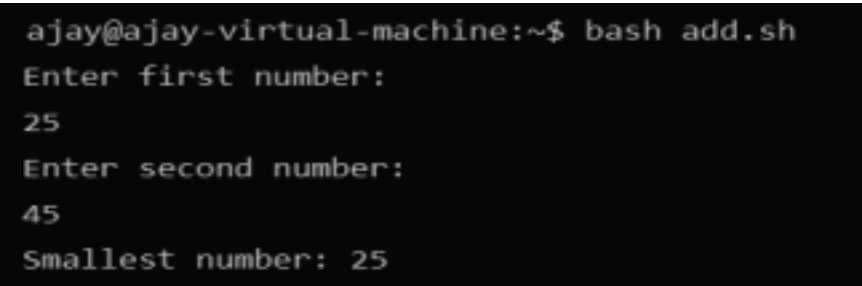
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
10
Enter second number:
20
Largest number: 20
```

37.FindSmallestofTwoNumbers

INPUT

```
#!/bin/bash
# Program to find the smallest number
echo"Enterfirstnumber:"
readnum1
echo"Entersecondnumber:"
readnum2
if [ $num1 -lt$num2]; then
    echo"Smallestnumber: $num1"
else
    echo"Smallestnumber: $num2"
fi
```

OUTPUT

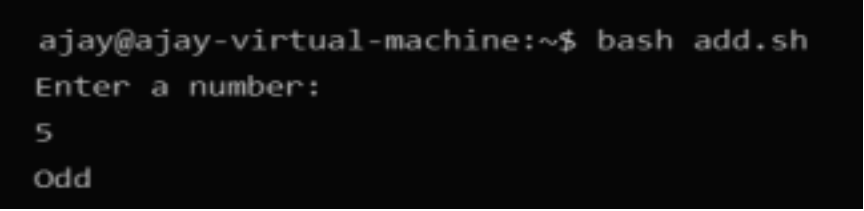


```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter first number:
25
Enter second number:
45
Smallest number: 25
```

38. CheckOddorEven

INPUT

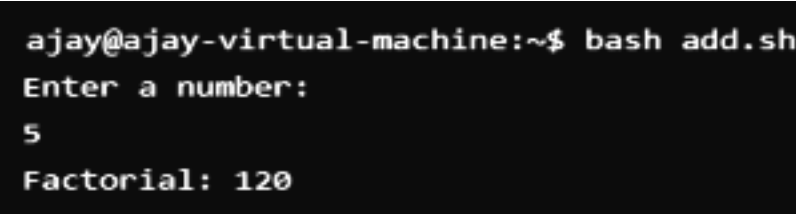
```
#!/bin/bash
echo "Enter a number:"
read num
if [ $((num % 2)) -eq 0 ]; then
    echo"Even"
else
    echo"Odd"
fi
```

OUTPUT

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
5
Odd
```

39. Factorial**INPUT**

```
#!/bin/bash
echo "Enteranumber:"
readnum
fact=1
for((i=1; i<=num; i++))
do
    fact=$((fact* i))
done
echo"Factorial: $fact"
```

OUTPUT

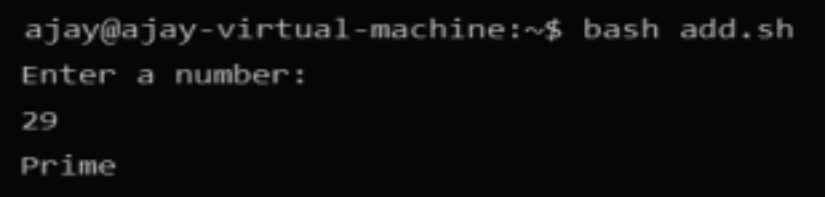
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
5
Factorial: 120
```

40. PrimeNumberCheck**INPUT**

```
#!/bin/bash
echo "Enter a number:"
read num
is_prime=1
for ((i=2; i<=num/2; i++))
do
    if [ $((num % i)) -eq 0 ]; then
```

```
    is_prime=0
    Break
fi
done
if [ $is_prime -eq 1 ]; then
    echo "Prime"
else
    echo "Not prime"
fi
```

OUTPUT



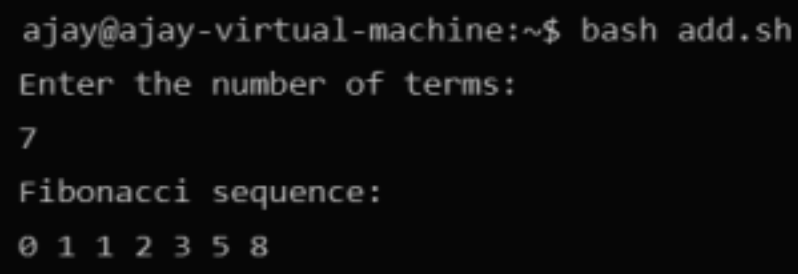
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
29
Prime
```

41. Fibonacci Sequence

INPUT

```
#!/bin/bash
echo "Enter the number of terms:"
read num
a=0
b=1
echo "Fibonacci sequence:"
for ((i=0; i<num; i++))
do
    echo -n "$a "
    fn=$((a + b))
    a=$b
    b=$fn
done
```

OUTPUT



```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter the number of terms:
7
Fibonacci sequence:
0 1 1 2 3 5 8
```

42. Check Leap Year

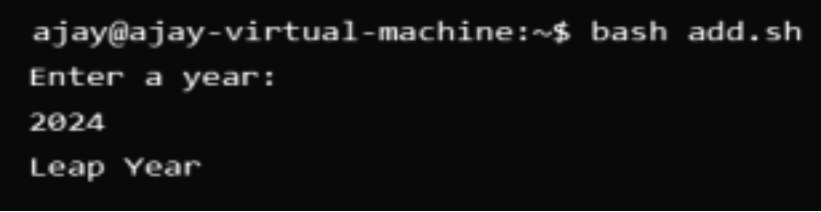
INPUT

```
#!/bin/bash
```



```
echo "Enter a year:"
read year
if [ $((year % 4)) -eq 0 ] && [ $((year % 100)) -ne 0 ] || [ $((year % 400)) -eq 0 ]; then
    echo "Leap Year"
else
    echo "Not a Leap Year"
fi
```

OUTPUT



```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a year:
2024
Leap Year
```

43. Table of a Number

INPUT

```
#!/bin/bash
echo "Enter a number:"
read num
echo "Table of $num:"
for ((i=1; i<=10; i++))
do
    echo "$num * $i = $((num * i))"
done
```

OUTPUT



```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
4
Table of 4:
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40
```

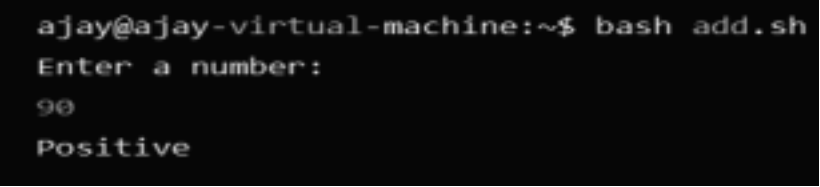
44. Check Positive or Negative Number

INPUT

```
#!/bin/bash
echo "Enter a number:"
read num
if [ $num -gt 0 ]; then
```

```
    echo "Positive"
elif [ $num -lt 0 ]; then
    echo "Negative"
else
    echo "Zero"
fi
```

OUTPUT



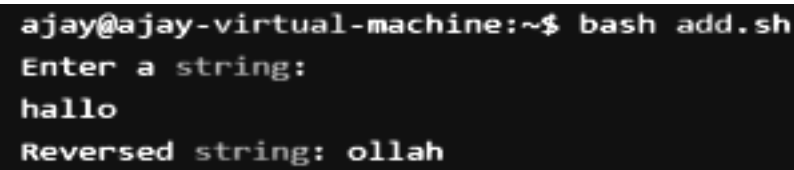
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a number:
90
Positive
```

45. Reverse a String

INPUT

```
#!/bin/bash
echo "Enter a string:"
read str
rev_str=$(echo $str | rev)
echo "Reversed string: $rev_str"
```

OUTPUT



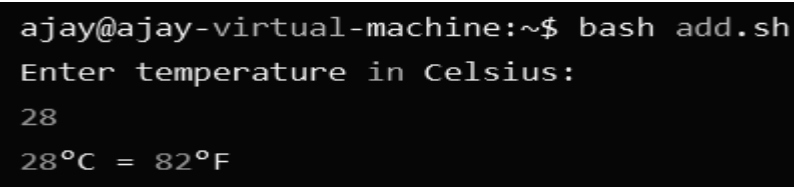
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter a string:
hallo
Reversed string: ollah
```

46. Convert Celsius to Fahrenheit

INPUT

```
#!/bin/bash
echo "Enter temperature in Celsius:"
read celsius
fahrenheit=$(( (celsius * 9/5) + 32 ))
echo "$celsius°C = $fahrenheit°F"
```

OUTPUT



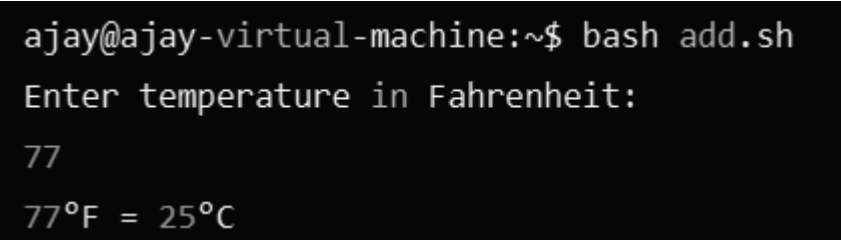
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter temperature in Celsius:
28
28°C = 82°F
```

47. Convert Fahrenheit to Celsius

INPUT

```
#!/bin/bash
echo "Enter temperature in Fahrenheit:"
read fahrenheit
celsius=$(( (fahrenheit - 32) * 5/9 ))
echo "$fahrenheit°F = $celsius°C"
```

OUTPUT

A terminal window with a black background and white text. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script outputs 'Enter temperature in Fahrenheit:', followed by the user input '77'. The final output is '77°F = 25°C'.

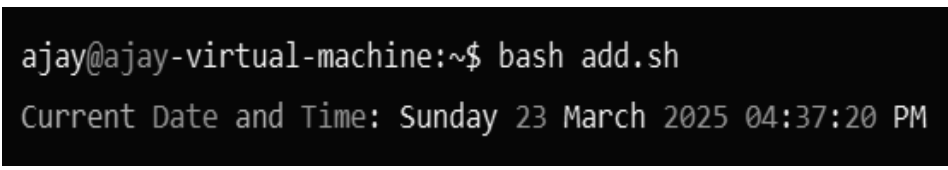
```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter temperature in Fahrenheit:
77
77°F = 25°C
```

48. Display Current Date and Time

INPUT

```
#!/bin/bash
echo "Current Date and Time: $(date)"
```

OUTPUT

A terminal window with a black background and white text. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script outputs 'Current Date and Time: Sunday 23 March 2025 04:37:20 PM'.

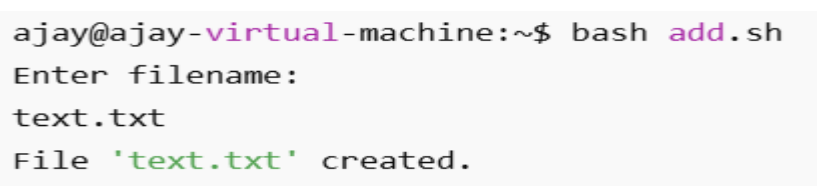
```
ajay@ajay-virtual-machine:~$ bash add.sh
Current Date and Time: Sunday 23 March 2025 04:37:20 PM
```

49. Create a New File

INPUT

```
#!/bin/bash
echo "Enter filename:"
read filename
touch $filename
echo "File '$filename' created."
```

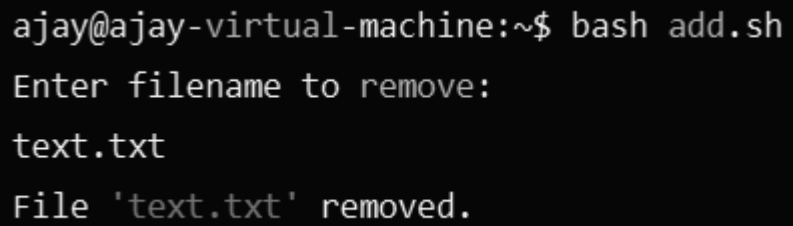
OUTPUT

A terminal window with a light gray background and black text. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script outputs 'Enter filename:', followed by the user input 'text.txt'. The final output is 'File 'text.txt' created.'.

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter filename:
text.txt
File 'text.txt' created.
```

50. Remove a File**INPUT**

```
#!/bin/bash
echo "Enter filename to remove:"
read filename
rm $filename
echo "File '$filename' removed."
```

OUTPUTA terminal window with a black background and white text. The prompt is 'ajay@ajay-virtual-machine:~\$'. The user enters 'bash add.sh'. The script then prompts 'Enter filename to remove:', the user enters 'text.txt', and the script outputs 'File 'text.txt' removed.'

```
ajay@ajay-virtual-machine:~$ bash add.sh
Enter filename to remove:
text.txt
File 'text.txt' removed.
```