

Practical 3

1) Write a bash script to calculate the sum of n inputs.

Code:

```
#!/bin/bash

sum=0

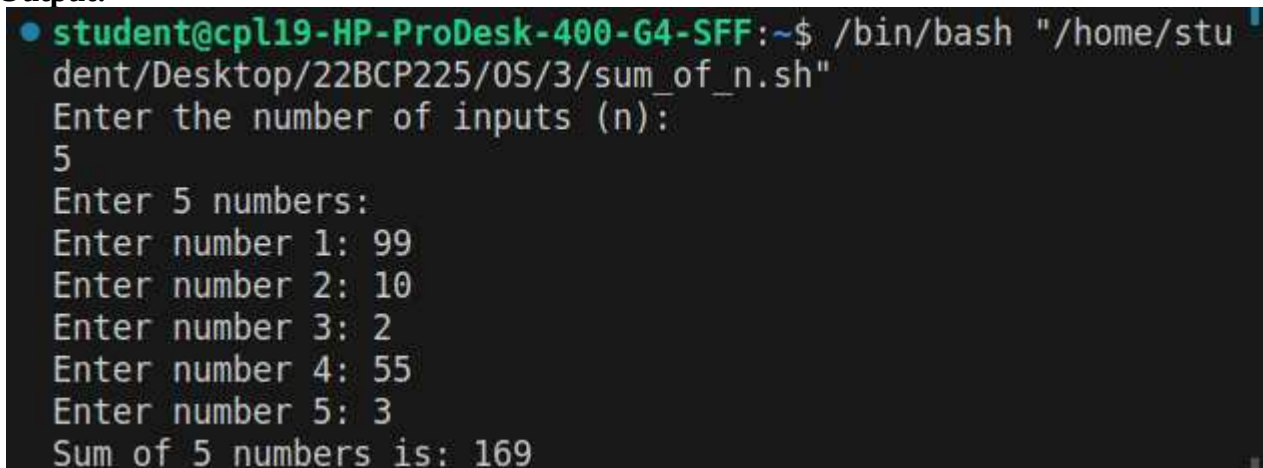
echo "Enter the number of inputs (n):"
read n

echo "Enter $n numbers:"

for ((i = 1; i <= n; i++)); do
    echo -n "Enter number $i: "
    read num
    sum=$((sum + num))
done

echo "Sum of $n numbers is: $sum"
```

Output:



A terminal window showing the execution of a bash script. The prompt is 'student@cpl19-HP-ProDesk-400-G4-SFF:~\$'. The user runs '/bin/bash "/home/stu dent/Desktop/22BCP225/OS/3/sum_of_n.sh"'. The script prompts 'Enter the number of inputs (n):' and the user enters '5'. Then it prompts 'Enter 5 numbers:' and the user enters five numbers: '99', '10', '2', '55', and '3'. Finally, it outputs 'Sum of 5 numbers is: 169'.

```
student@cpl19-HP-ProDesk-400-G4-SFF:~$ /bin/bash "/home/stu
dent/Desktop/22BCP225/OS/3/sum_of_n.sh"
Enter the number of inputs (n):
5
Enter 5 numbers:
Enter number 1: 99
Enter number 2: 10
Enter number 3: 2
Enter number 4: 55
Enter number 5: 3
Sum of 5 numbers is: 169
```

2) Write a bash script to find the largest out of three numbers.

Code:

```
#!/bin/bash

echo "Enter three numbers:"

read -p "Enter number 1: " num1
read -p "Enter number 2: " num2
read -p "Enter number 3: " num3

largest=num1

if [ $num2 -gt $largest ]; then
```

```

    largest=$num2
fi

if [ $num3 -gt $largest ]; then
    largest=$num3
fi

echo "The largest number is: $largest"

```

Output:

```

● student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/OS
/3$ /bin/bash "/home/student/Desktop/22BCP225/OS/3/tempCodeRunnerFile.sh"
Enter three numbers:
Enter number 1: 10
Enter number 2: 29
Enter number 3: 19
The largest number is: 29
○ student@cpl19-HP-ProDesk-400-G4-

```

3) Write a menu driven bash script for the following operations.

- a. Display calendar of current month
- b. Display today's date information
- c. Display the username of the users currently logged in
- d. Display the username at given coordinates
- e. Display the terminal number

Code:

```

#!/bin/bash

echo "Main Menu"
echo "1. Display calendar of current month"
echo "2. Display today's date information"
echo "3. Display the username of the users currently logged in"
echo "4. Display the username at given coordinates"
echo "5. Display the terminal number"
echo "6. Exit"
echo -n "Enter your choice: "
read choice
case $choice in
1) cal ;;
2) date ;;
3) who ;;
4)
    read -p "Enter X position: " x
    read -p "Enter Y position: " y
    tput cup $x $y
    echo -n $USER
;;

```

```
5) tty ;;
6) exit ;;
*) echo "Invalid choice" ;;
esac
```

Output:

```
student@cpl19-HP-ProDesk-400-G4-SFF:~$ /bin/bash "/home/stude
nt/Desktop/22BCP225/OS/3/menu_driven.sh"
Main Menu
1. Display calendar of current month
2. Display today's date information
3. Display the username of the users currently logged in
4. Display the username at given coordinates
5. Display the terminal number
6. Exit
Enter your choice: 1
cal: setlocale: No such file or directory
    February 2024
Su Mo Tu We Th Fr Sa
           1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29
```

4) Write a bash script to get first n Fibonacci numbers.

Code:

```
#!/bin/bash

echo "Enter the value of n:"
read n

# Initialize the first two Fibonacci numbers
a=0
b=1

echo "First $n Fibonacci numbers:"

for ((i = 1; i <= n; i++)); do
    echo -n "$a "

    # Calculate the next Fibonacci number
    next=$((a + b))

    # Update values for the next iteration
    a=$b
    b=$next
done
```

```
echo " "  
done
```

Output:

```
student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/0  
● S/3$ /bin/bash "/home/student/Desktop/22BCP225/0S/3/fibo  
nacci.sh"  
Enter the value of n:  
10  
First 10 Fibonacci numbers:  
0 1 1 2 3 5 8 13 21 34  
student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/0  
○ S/3$
```

5) Write a bash script to check whether the given year is a leap year.

Code:

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

```
echo "Enter a year:"  
read year
```

```
if [ $((year % 4)) -eq 0 ] && [ $((year % 100)) -ne 0 -o $((year % 400)) -eq 0 ]; then  
    echo "$year is a leap year."  
else  
    echo "$year is not a leap year."  
fi
```

Output:

```
student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/0  
● S/3$ /bin/bash "/home/student/Desktop/22BCP225/0S/3/temp  
CodeRunnerFile.sh"  
Enter a year:  
2023  
2023 is not a leap year.  
student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/0  
● S/3$ /bin/bash "/home/student/Desktop/22BCP225/0S/3/temp  
CodeRunnerFile.sh"  
Enter a year:  
2024  
2024 is a leap year.  
student@cpl19-HP-ProDesk-400-G4-SFF:~/Desktop/22BCP225/0  
○ S/3$
```

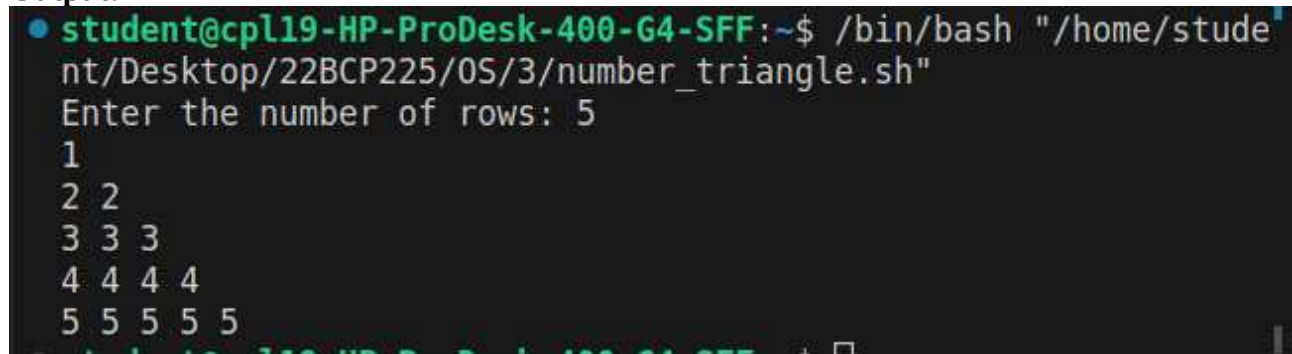
6. Write a bash script to print a number triangle

Code:

```
#!/bin/bash
read -p "Enter the number of rows: " num

for ((i = 1; i <= num; i++)); do
    for ((j = 1; j <= i; j++)); do
        echo -n "$i "
    done
    echo ""
done
```

Output:



A terminal window showing the execution of a bash script. The prompt is 'student@cpl19-HP-ProDesk-400-G4-SFF:~\$'. The user runs '/bin/bash "/home/student/Desktop/22BCP225/OS/3/number_triangle.sh"'. The script prompts 'Enter the number of rows: 5'. The output is a triangle of numbers: 1, 2 2, 3 3 3, 4 4 4 4, 5 5 5 5 5.

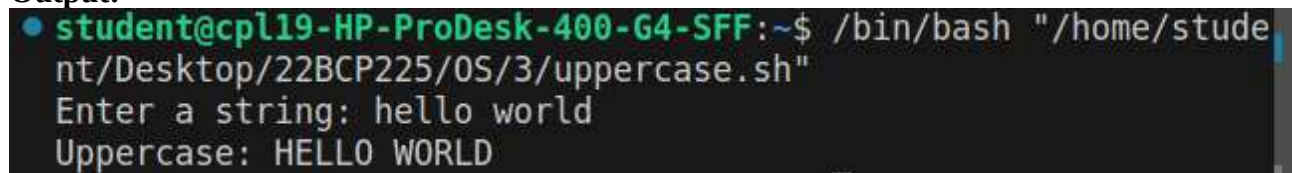
```
student@cpl19-HP-ProDesk-400-G4-SFF:~$ /bin/bash "/home/student/Desktop/22BCP225/OS/3/number_triangle.sh"
Enter the number of rows: 5
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

7. Write a bash script to change the input to uppercase

Code:

```
#!/bin/bash
read -p "Enter a string: " input
uppercase=${input^^}
echo "Uppercase: $uppercase"
```

Output:



A terminal window showing the execution of a bash script. The prompt is 'student@cpl19-HP-ProDesk-400-G4-SFF:~\$'. The user runs '/bin/bash "/home/student/Desktop/22BCP225/OS/3/uppercasse.sh"'. The script prompts 'Enter a string: hello world'. The output is 'Uppercase: HELLO WORLD'.

```
student@cpl19-HP-ProDesk-400-G4-SFF:~$ /bin/bash "/home/student/Desktop/22BCP225/OS/3/uppercasse.sh"
Enter a string: hello world
Uppercase: HELLO WORLD
```