

Shell Scripting

```
Activities Terminal Apr 19 12:56
hitendra@hitendra-VM: ~/Programs
GNU nano 6.2 program1.sh
#!/bin/bash
#This is basic bash script
echo "Hello world"
```

```
Activities Terminal Apr 19 12:55
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program1.sh
hitendra@hitendra-VM:~/Programs$ ./program1.sh
bash: ./program1.sh: Permission denied
hitendra@hitendra-VM:~/Programs$ chmod +x program1.sh
hitendra@hitendra-VM:~/Programs$ ./program1.sh
Hello world
hitendra@hitendra-VM:~/Programs$
```

Addition of n numbers when number given as arguments

```
Activities Terminal Apr 19 13:30
hitendra@hitendra-VM: ~/Programs
GNU nano 6.2 program2.sh
#!/bin/bash
#This is program to take arguments from user and use it in program
echo "Addition of $# arguments shared by user"
sum=0
num=$#
arg=("$@")
for((i=0;i<$num;i++))
do
sum=$((sum + ${arg[i]}))
done
echo "The sum of $# arguments is $sum"
```

```
Activities Terminal Apr 19 13:31
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program2.sh
hitendra@hitendra-VM:~/Programs$ ./program2.sh 3 5 6 3
Addition of 4 arguments shared by user
The sum of 4 arguments is 17
hitendra@hitendra-VM:~/Programs$
```

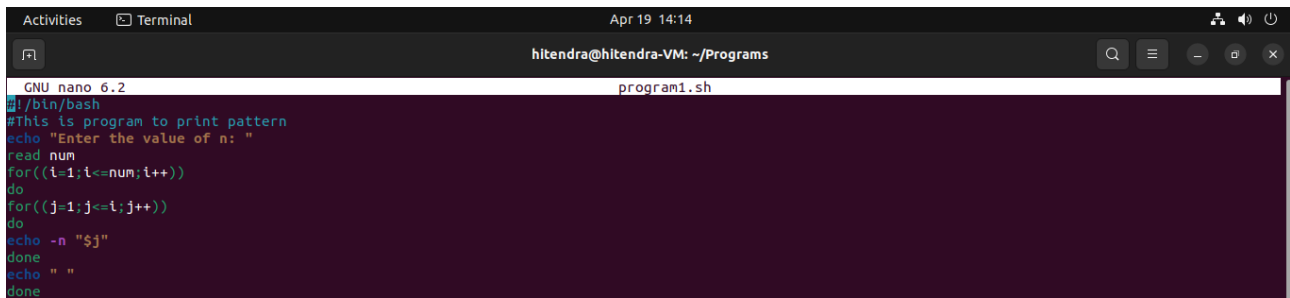
Use of array:

```
Activities Terminal Apr 19 16:43
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ chmod +x array.sh
hitendra@hitendra-VM:~/Programs$ ./array.sh
This
is
new
Program
hitendra@hitendra-VM:~/Programs$
```

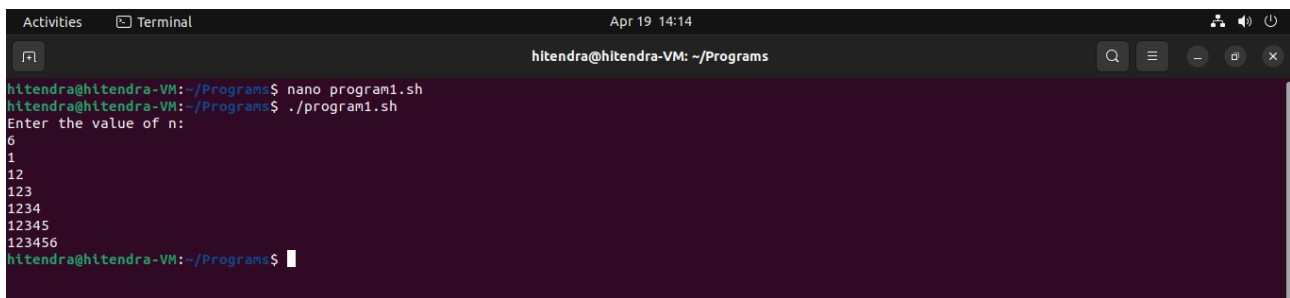
```
Activities Terminal Apr 19 16:43
hitendra@hitendra-VM: ~/Programs
GNU nano 6.2 array.sh
#!/bin/bash
declare -a arr1
arr1=("This" "is" "new" "Program")
for ((i=0;i<${#arr1[@]};i++))
do
echo ${arr1[i]}
done
```

Programs

1. Input- `bash 01_pattern.sh`
Enter the value of n:6
Output- The expected pattern is
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6

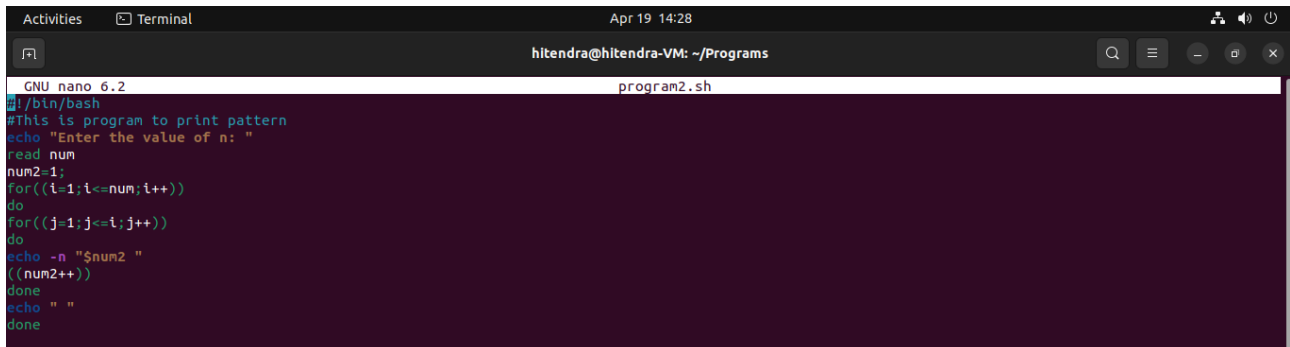


```
GNU nano 6.2 program1.sh
#!/bin/bash
#This is program to print pattern
echo "Enter the value of n: "
read num
for((i=1;i<=num;i++))
do
for((j=1;j<=i;j++))
do
echo -n "$j"
done
echo " "
done
```



```
hitendra@hitendra-VM: ~/Programs$ nano program1.sh
hitendra@hitendra-VM: ~/Programs$ ./program1.sh
Enter the value of n:
6
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
hitendra@hitendra-VM: ~/Programs$
```

2. Input- `bash 02_pattern.sh`
Enter the value of n:4
Output- The expected pattern is
1
2 3
4 5 6
7 8 9 10



```
GNU nano 6.2 program2.sh
#!/bin/bash
#This is program to print pattern
echo "Enter the value of n: "
read num
num2=1;
for((i=1;i<=num;i++))
do
for((j=1;j<=i;j++))
do
echo -n "$num2 "
((num2++))
done
echo " "
done
```

```
Activities Terminal Apr 19 14:28
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program2.sh
hitendra@hitendra-VM:~/Programs$ ./program2.sh
Enter the value of n:
4
1
2 3
4 5 6
7 8 9 10
hitendra@hitendra-VM:~/Programs$
```

3. Description-Script for addition of two real numbers

Input- bash 03_real_add.sh

Enter the numbers to addition: 4.28 1.21

Output- The sum of 4.28 and 1.21 is 5.49

```
Activities Terminal Apr 19 14:41
hitendra@hitendra-VM: ~/Programs
GNU nano 6.2 program3.sh
#!/bin/bash
echo "Enter the numbers to addition: "
read num1 num2
sum=$(echo "$num1 + $num2" | bc -l)
echo "The sum of $num1 and $num2 is $sum"
```

```
Activities Terminal Apr 19 14:41
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program3.sh
hitendra@hitendra-VM:~/Programs$ ./program3.sh
Enter the numbers to addition:
4.28 1.21
The sum of 4.28 and 1.21 is 5.49
hitendra@hitendra-VM:~/Programs$
```

4. Description- Script for arithmetic calculator using command line arguments

Input- bash 04_calculator.sh 1.2 + 2.6

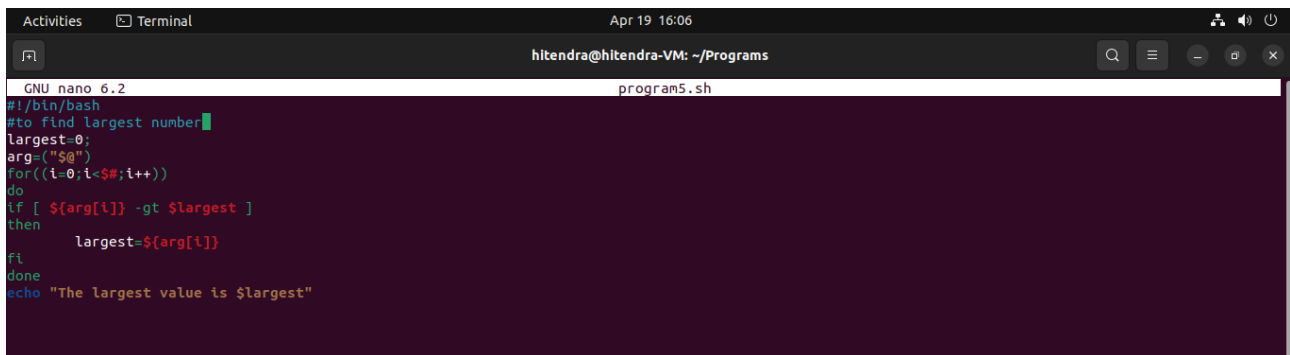
Output- The sum of 1.2 and 2.6 is 3.8

```
Activities Terminal Apr 19 14:57
hitendra@hitendra-VM: ~/Programs
GNU nano 6.2 program4.sh
#!/bin/bash
echo "Enter the numbers to addition: "

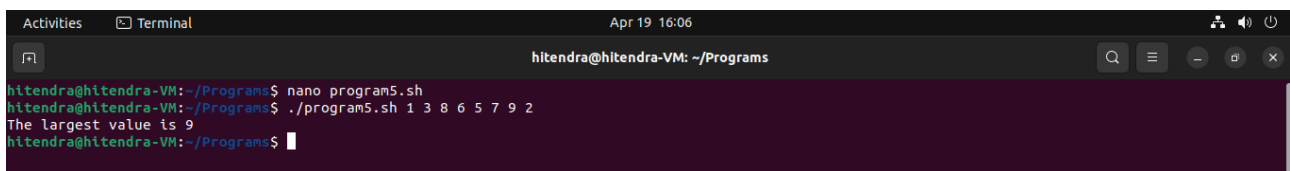
sum=$(echo "$1 + $2" | bc -l)
echo "The sum of $1 and $2 is $sum"
```

```
Activities Terminal Apr 19 14:58
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program4.sh
hitendra@hitendra-VM:~/Programs$ ./program4.sh 1.2 2.6
Enter the numbers to addition:
The sum of 1.2 and 2.6 is 3.8
hitendra@hitendra-VM:~/Programs$
```

5. Description- Script to compare larger integer values from a 'n' number of arguments using command line arguments
Input- `bash 05_largest.sh 1 3 8 6 5 7 9 2`
Output- The largest value is 9

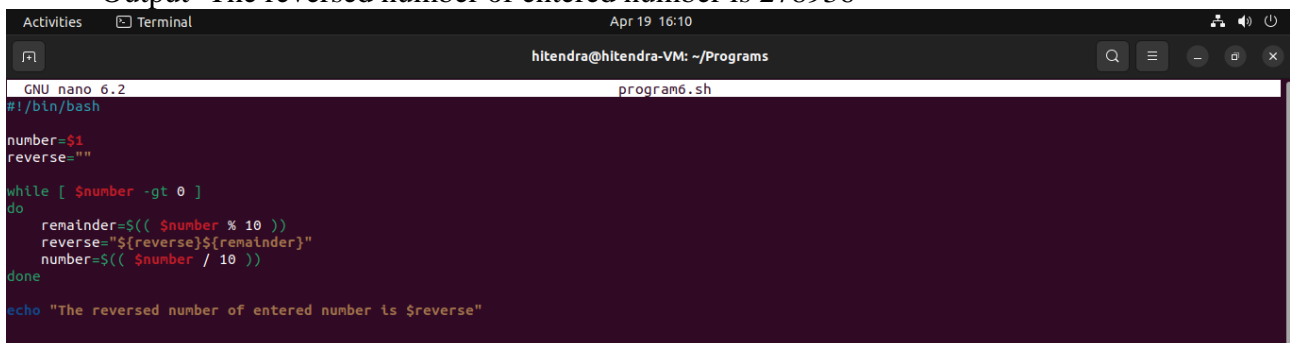


```
GNU nano 6.2 program5.sh
#!/bin/bash
#to find largest number
largest=0
arg=("$@")
for((i=0;i<${#};i++))
do
if [ ${arg[i]} -gt $largest ]
then
    largest=${arg[i]}
fi
done
echo "The largest value is $largest"
```



```
hitendra@hitendra-VM: ~/Programs
hitendra@hitendra-VM:~/Programs$ nano program5.sh
hitendra@hitendra-VM:~/Programs$ ./program5.sh 1 3 8 6 5 7 9 2
The largest value is 9
hitendra@hitendra-VM:~/Programs$
```

6. Description- Script to print a given number in reverse order.
Input- `bash 06_reverse.sh 639872`
Output- The reversed number of entered number is 278936



```
GNU nano 6.2 program6.sh
#!/bin/bash
number=$1
reverse=""
while [ $number -gt 0 ]
do
    remainder=$(( $number % 10 ))
    reverse="{reverse}${remainder}"
    number=$(( $number / 10 ))
done
echo "The reversed number of entered number is $reverse"
```