

Experiment 5: BASH or SHELL scripting

Experiment 5: BASH or SHELL scripting
continued

Experiment [5]: [Shell Programming]

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AIM:

[To Learn Basic Conditional Statements in Bash Scripting]

Requirements:

[Any Linux Distro, any kind of text editor (vs code, vim, notepad, nano, etc)]

Theory:

[Basic usage of conditions and arrays in bash scripting.]

Procedure & Observations

Exercise 1: [Prime Number Check]

Task Statement:

[To check if the number given by the user is a prime number or not.]

Explanation:

[using if else loop wap to check if the number is a prime number or not.]

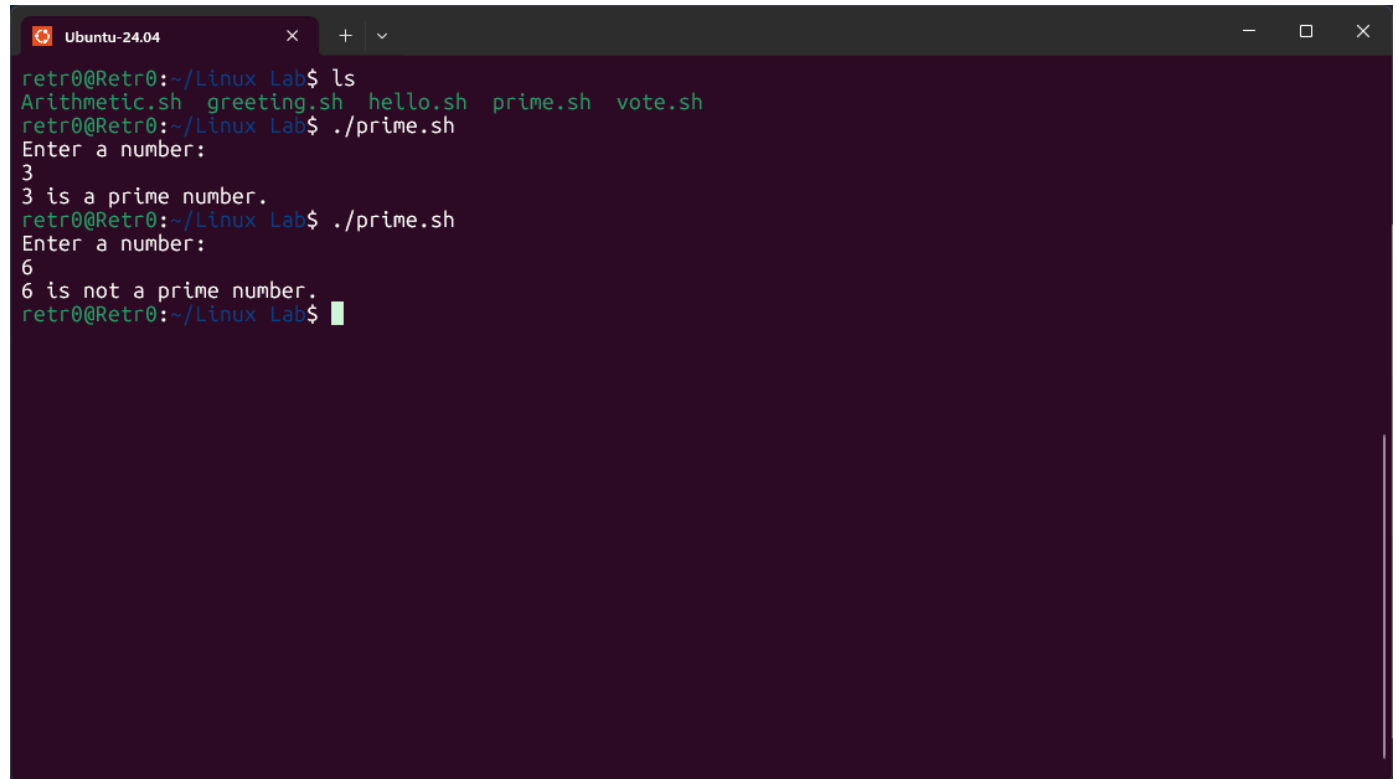
Command(s):

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

```
fi
done
if [ $flag -eq 0 ] then

echo "$num is a prime number."
else
echo " $num is not a prime number."
fi
```

Output:

A terminal window titled 'Ubuntu-24.04' showing the execution of a script. The user runs 'ls' and lists files: 'Arithmetic.sh', 'greeting.sh', 'hello.sh', 'prime.sh', and 'vote.sh'. Then they run './prime.sh'. The script prompts 'Enter a number:' and the user enters '3'. The script outputs '3 is a prime number.'. The user runs './prime.sh' again, enters '6', and the script outputs '6 is not a prime number.'.

```
retr0@Retr0:~/Linux Lab$ ls
Arithmetic.sh  greeting.sh  hello.sh  prime.sh  vote.sh
retr0@Retr0:~/Linux Lab$ ./prime.sh
Enter a number:
3
3 is a prime number.
retr0@Retr0:~/Linux Lab$ ./prime.sh
Enter a number:
6
6 is not a prime number.
retr0@Retr0:~/Linux Lab$
```

- Exercise 2: [Sum of Digits]

Task Statement:

[Take input from user and give the sum of two digits.]

Explanation:

[This script will take input from user and will give the following output.]

Command(s):

```
#!/bin/bash
echo "Enter a number: "
read num
sum=0
while [ num - gt0 ]dodigit =((num % 10))
sum=((sum + digit))num =((num / 10))
done
echo "Sum of digits: $sum"
```

Output:

```
retr0@Retr0:~/Linux Lab$ ./sum.sh
Enter a number:
56
Sum of digits: 11
retr0@Retr0:~/Linux Lab$
```

Exercise 3: [Armstrong Numbers]

Task Statement:

[Take input user and give the sum of Armstrong number of n digits is a number equal to the sum of its digits raised to the power n. Example: $153 = 1^3 + 5^3 + 3^3$]

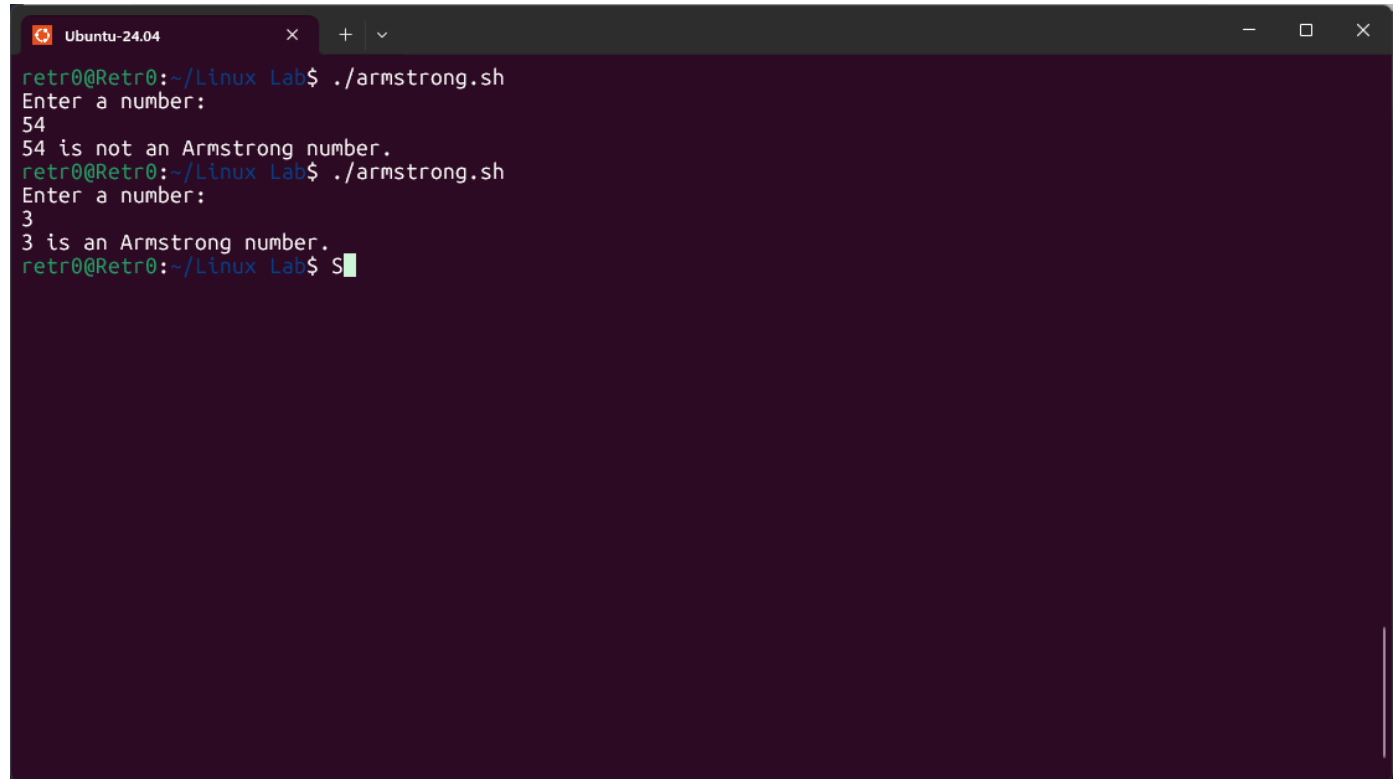
Explanation:

[This script will tell if the number entered by the user is an armstrong number or not.]

Command(s):

```
#!/bin/bash
echo "Enter a number: "
read num
temp=numn=${#num} # number of digits
sum=0
while [ $temp -gt 0 ]
do
digit=$((tempsum = ((sum + digit**n))
temp=$((temp / 10))
done
if [ $sum -eq $num ]
then
echo " num is an Armstrong number."elseecho"num is not an Armstrong number."
fi
```

Output:

A terminal window titled 'Ubuntu-24.04' with standard window controls. The prompt is 'retr0@Retr0:~/Linux Lab\$'. The user runs './armstrong.sh'. The script prompts 'Enter a number:' and the user enters '54'. The script outputs '54 is not an Armstrong number.'. The user runs './armstrong.sh' again. The script prompts 'Enter a number:' and the user enters '3'. The script outputs '3 is an Armstrong number.'. The prompt returns to 'retr0@Retr0:~/Linux Lab\$' with a cursor.

```
retr0@Retr0:~/Linux Lab$ ./armstrong.sh
Enter a number:
54
54 is not an Armstrong number.
retr0@Retr0:~/Linux Lab$ ./armstrong.sh
Enter a number:
3
3 is an Armstrong number.
retr0@Retr0:~/Linux Lab$ S
```

Result:

The Exercises were successfully completed for Basic Shell Scripting.