



BASIC BASH SCRIPT

TRƯƠNG BẢO TÍN

Ngày tạo: 9/5/2021

Contents

- Comments
- Echo command
- Variables
- Conditional Statements
- Loops
- Functions

Link: https://linuxhint.com/bash_scripting_tutorial_beginners/

COMMENTS

Single comment

```
#Take a number as input
```

Multiple line comment

```
#!/bin/bash
<<LongComment
This script is used to
Calculate the cube of
a number with value 5
LongComment
```

Bắt đầu bằng <<LongComment , kết thúc bằng LongComment (nhập chính xác)

```
: 'SDFSDFFS
DFS
SFDĐS
'
```

Bắt đầu bằng : ' , kết thúc bằng '



ECHO

```
#!/bin/bash
echo "Print text with a new line"
echo -n "Print text without a new line"
```

```
fahmida@fahmida-virtualbox:~/code$ bash echo_test.sh
Print text with a new line
Print text without a new linefahmida@fahmida-virtualbox:~/code$
```

Different between `echo` and `echo -n`

Options of echo command

 Option	 Description
<u>-n</u>	Omit newline from the output.
<u>-e</u>	Enable the function of backslash(/) character.
<u>-E</u>	Disable the function of backslash(/) character.
<u>-version</u>	Display the version information
<u>-help</u>	Display help messages related to the uses of this command

echo -e

```
$ echo -e "Perl\tis\ta\tpowerful\tand\tportable\tlanguage"
```

echo -E

```
fahmida@fahmida-virtualbox:~$ echo -e "Perl\tis\ta\tpowerful\tand\tportable\tlanguage"
Perl    is    a    powerful    and    portable    language
fahmida@fahmida-virtualbox:~$
```

```
$ echo -E "I\nlike\nbash\programming"
```

```
fahmida@fahmida-virtualbox:~$ echo -E "I\nlike\nbash\programming"
I\nlike\nbash\programming
fahmida@fahmida-virtualbox:~$
```

Different between `'...'` and `"..."`

```
$ price="\$100"
$ echo 'The price of this book is $price'
$ echo "The price of this book is $price"
```

```
fahmida@fahmida-virtualbox:~$ price="\$100"
fahmida@fahmida-virtualbox:~$ echo 'The price of this book is $price'
The price of this book is $price
fahmida@fahmida-virtualbox:~$ echo "The price of this book is $price"
The price of this book is $100
fahmida@fahmida-virtualbox:~$
```

Dùng `'...'` sẽ không gọi được biến ra

\$ echo *

```
fahmida@fahmida-virtualbox:~$ echo *
1 area.awk awkcsv.awk awkcsv.csv bonus.txt cal_area.awk code count.awk count_fields.awk cust
omer.csv customers.txt customer.txt cust.txt data.txt dead.letter Desktop Documents Download
s employee.txt examples.desktop gg input.txt item_search.bash items.txt jushi17bd@gmail.com
Mail message_body.txt Music newfile.txt phone.txt Pictures Public salesinfo.txt select4.sh s
ent share students.txt Templates Videos
fahmida@fahmida-virtualbox:~$
```

\$ echo *.txt

```
fahmida@fahmida-virtualbox:~$ echo *.txt
bonus.txt customers.txt customer.txt cust.txt data.txt employee.txt input.txt items.txt mess
age_body.txt newfile.txt phone.txt salesinfo.txt students.txt
fahmida@fahmida-virtualbox:~$
```

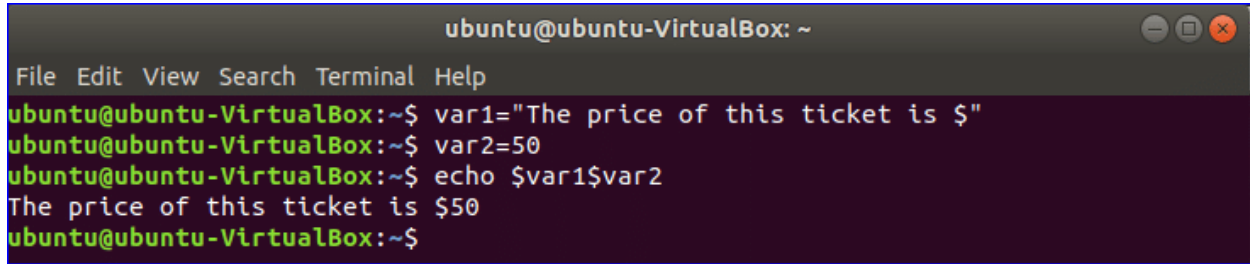
VARIABLES

```
$ mystr="I like bash programming"
$ echo $mystr
```

```
fahmida@fahmida-virtualbox:~/code$ mystr="I like bash programming"
fahmida@fahmida-virtualbox:~/code$ echo $mystr
I like bash programming
fahmida@fahmida-virtualbox:~/code$
```

Nối biến chuỗi

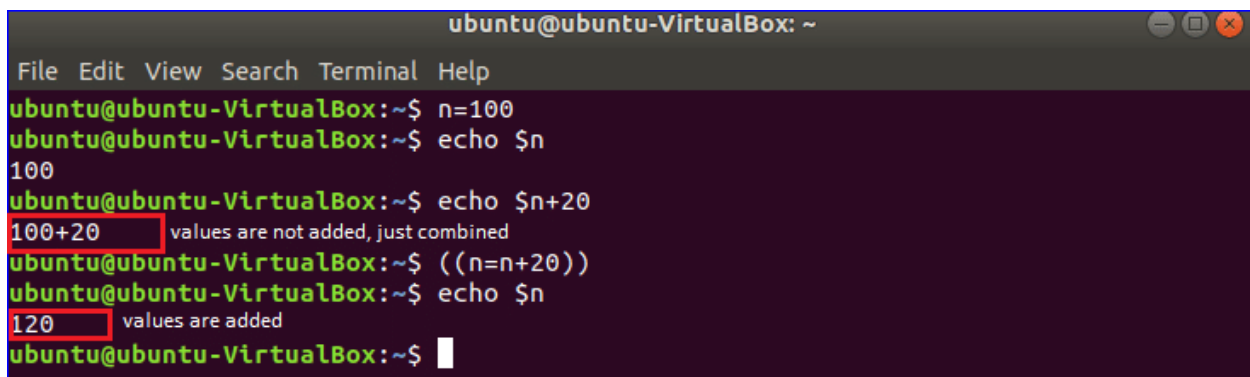
```
$ var1="The price of this ticket is $"
$ var2=50
$ echo $var1$var2
```

A terminal window titled 'ubuntu@ubuntu-VirtualBox: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
ubuntu@ubuntu-VirtualBox:~$ var1="The price of this ticket is $"
ubuntu@ubuntu-VirtualBox:~$ var2=50
ubuntu@ubuntu-VirtualBox:~$ echo $var1$var2
The price of this ticket is $50
ubuntu@ubuntu-VirtualBox:~$
```

Muốn thực hiện toán học với biến phải dùng ((...))

```
$ n=100
$ echo $n
$ echo $n+20
$ ((n=n+20))
$ echo $n
```

A terminal window titled 'ubuntu@ubuntu-VirtualBox: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

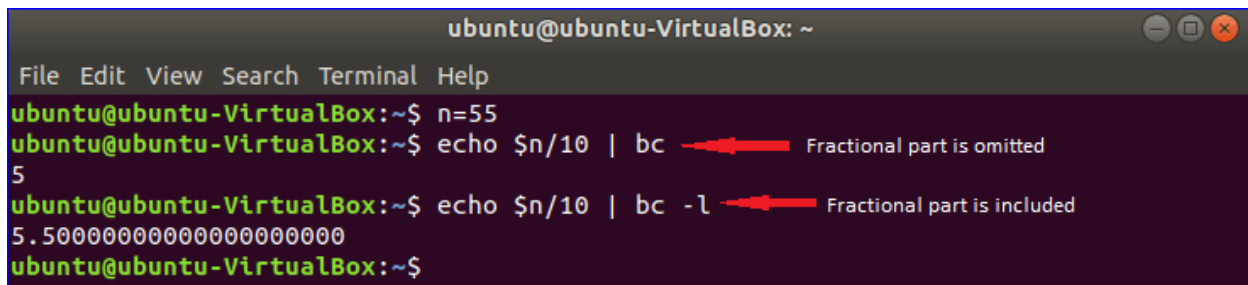
```
ubuntu@ubuntu-VirtualBox:~$ n=100
ubuntu@ubuntu-VirtualBox:~$ echo $n
100
ubuntu@ubuntu-VirtualBox:~$ echo $n+20
100+20 values are not added, just combined
ubuntu@ubuntu-VirtualBox:~$ ((n=n+20))
ubuntu@ubuntu-VirtualBox:~$ echo $n
120 values are added
ubuntu@ubuntu-VirtualBox:~$
```

Lệnh bc với biến

```
a=10  
echo $a+2 | bc
```

-> output: 12

```
$ n = 55  
$ echo $ n / 10 | bc  
$ echo $ n / 10 | bc -l
```



```
ubuntu@ubuntu-VirtualBox: ~  
File Edit View Search Terminal Help  
ubuntu@ubuntu-VirtualBox:~$ n=55  
ubuntu@ubuntu-VirtualBox:~$ echo $n/10 | bc Fractional part is omitted  
5  
ubuntu@ubuntu-VirtualBox:~$ echo $n/10 | bc -l Fractional part is included  
5.500000000000000000000000000000  
ubuntu@ubuntu-VirtualBox:~$
```

Biến local và biến global

```
#!/bin/bash  
n=5  
function addition()  
{  
  local n=6  
  local m=4  
  (( n=n+m ))  
  echo $n  
  
}  
addition  
echo $n
```

n (local) sẽ được dùng để tính toán tạm thời, **n (global)** vẫn giữ nguyên

```
ubuntu@ubuntu-VirtualBox: ~  
File Edit View Search Terminal Help  
ubuntu@ubuntu-VirtualBox:~$ bash b2.sh  
10 ← value of local variable n  
5 ← vlue of global variable n  
ubuntu@ubuntu-VirtualBox:~$
```

Chuỗi biến

```
#!/bin/bash  
  
myarr=(HTML JavaScript PHP jQuery AngularJS CodeIgniter)
```

Conditional statement

Có thể dùng `if [...]` thay vì `if [[...]]`

Kết thúc bằng lệnh `fi`

```
#!/bin/bash  
  
echo "Enter your code"  
read code  
echo "Enter your age"  
read age  
  
if [[ $age -ge 18 && $code -eq '1100' ]]  
then  
echo "You are eligible to see the movie"  
else  
echo "You are not eligible to see the movie"  
fi
```

```
fahmida@fahmida-virtualbox:~/code$ bash cond.sh
Enter your code
1100
Enter your age
5
You are not eligible to see the movie
fahmida@fahmida-virtualbox:~/code$ bash cond.sh
Enter your code
1100
Enter your age
45
You are eligible to see the movie
fahmida@fahmida-virtualbox:~/code$
```

Options of if command

<u>Aa</u> Operator	<u>≡</u> Description
<u>&&</u>	và
<u> </u>	hoặc
<u>-eq</u>	Returns true if two numbers are equivalent
<u>-lt</u>	Returns true if a number is less than another number
<u>-le</u>	less or equal
<u>-gt</u>	Returns true if a number is greater than another number
<u>-ge</u>	greater or equal
<u>==</u>	Returns true if two strings are equivalent
<u>!=</u>	Returns true if two strings are not equivalent
<u>!</u>	Returns true if the expression is false
<u>-d</u>	Check the existence of a directory
<u>-e</u>	Check the existence of a file
<u>-r</u>	Check the existence of a file and read permission
<u>-w</u>	Check the existence of a file and write permission
<u>-x</u>	Check the existence of a file and execute permission

Lưu ý sử dụng "=" hoặc options, phân biệt 18 và '18'

```
if [[ $age -ge 18 && $code -eq '1100' ]]
```

```
if [[ $age=18 && $code=1100 ]]
```

If...and... (&&)

```
#!/bin/bash
echo "Enter username"
read un
echo "Enter password"
read pw
if [[ "$un" == "admin" && "$pw" = "superuser" ]]; then    (de y "$sun" == "admin")
echo "Login Successful."
fi
```

```
fahmida@fahmida-virtualbox:~/code$ bash cond2.sh
Enter username
admin
Enter password
123
fahmida@fahmida-virtualbox:~/code$ bash cond2.sh
Enter username
admin
Enter password
superuser
Login Successful.
fahmida@fahmida-virtualbox:~/code$
```

If...or.... (dùng ||)

If-elif-else

```
#!/bin/bash
echo "Enter the mark"
```

```

read mark
if (( $mark >= 9 )); then
echo "Grade - A+"
elif (( $mark < 90 && $mark >= 80 )); then      ( >= di kem voi (...))
echo "Grade - A"
elif (( $mark < 80 && $mark >= 70 )); then
echo "Grade - B+"
elif (( $mark < 70 && $mark >= 60 )); then
echo "Grade - C+"
else
echo "Grade - F"
fi

```

```

fahmida@fahmida-virtualbox:~/code$ bash cond4.sh
Enter the mark
95
Grade - A+
fahmida@fahmida-virtualbox:~/code$ bash cond4.sh
Enter the mark
79
Grade - B+
fahmida@fahmida-virtualbox:~/code$ bash cond4.sh
Enter the mark
52
Grade - F
fahmida@fahmida-virtualbox:~/code$

```

Nested if

```

#!/bin/bash
echo "Enter the sales amount"
read amount
echo "Enter the time duration"
read duration

if (( $amount >= 10000 )); then
if (( $duration <= 7 )); then      (nested if)
output="You will get 20% bonus"
else
output="You will get 15% bonus"
fi
else
if (( $duration <= 10 )); then
output="You will get 10% bonus"

```

```
else
output="You will get 5% bonus"
fi
fi
echo "$output"
```

```
fahmida@fahmida-virtualbox:~/code$ bash cond5.sh
Enter the sales amount
12000
Enter the time duration
5
You will get 20% bonus
fahmida@fahmida-virtualbox:~/code$ bash cond5.sh
Enter the sales amount
9000
Enter the time duration
12
You will get 5% bonus
fahmida@fahmida-virtualbox:~/code$
```

Case (tương tự if) - tìm hiểu sau

LOOPS

For

```
#!/bin/bash
for a in thu2 thu3 thu4 thu5
do
if [[ $a == 'thu2' || $a == 'thu4' ]]      (use == )
then
echo 'ngay chan'
else
echo 'ngay le'
fi
done
```

```

ngay le
truongbaotinnh2019@ubuntu:~/Desktop$ nano vd
truongbaotinnh2019@ubuntu:~/Desktop$ bash vd
ngay chan
ngay le
ngay chan
ngay le

```

For loop to read input variable

```

#!/bin/bash
echo "Enter a text of multiple words"
read text
i=1
for word in $text
do
echo "Word No-$i = $word"
((i=$i+1))
done

```

```

fahmida@fahmida-virtualbox:~/code$ bash forloop1.sh
Enter a text of multiple words
Prevention is better than cure.
Word No-1 = Prevention
Word No-2 = is
Word No-3 = better
Word No-4 = than
Word No-5 = cure.
fahmida@fahmida-virtualbox:~/code$

```

To be continued...

While

```

#!/bin/bash
a=1
while [ $a -le 5 ]          ( dung [...] va -eq, -lt....)
do
echo "$a"

```

```
((a=$a+1))          dung ((a++)) cung dc  
done
```

```
truongbaotinnh2019@ubuntu:~/Desktop$ bash vd  
1  
2  
3  
4  
5
```

To be contiued....

Until

```
#!/bin/bash  
a=1  
until [ $a -eq 5 ]  
do  
echo "$a"  
((a++))  
done
```

```
truongbaotinnh2019@ubuntu:~$ cd Desktop  
truongbaotinnh2019@ubuntu:~/Desktop$ bash vd  
1  
2  
3  
4  
truongbaotinnh2019@ubuntu:~/Desktop$ █
```

To be continued...

Còn nữa

Functions

Calling programs in a script

Creating Menus

Command Line Processing

Arithmetic

String manipulation

Returning return codes from a script and catching in another script

Reading and writing to files