

Bash project

Double parenthesis for arithmetic operations.

```
samim@9819fd877cfb527:~$ sudo nano double.sh
[sudo] password for samim:
samim@9819fd877cfb527:~$ sudo chmod double.sh
chmod: missing operand after 'double.sh'
Try 'chmod --help' for more information.
samim@9819fd877cfb527:~$ sudo chmod +x double.sh
samim@9819fd877cfb527:~$ ./double.sh
x=8, y=2
Addition of x & y
10
Subtraction of x & y
6
Multiplication of x & y
16
Division of x by y
4
Exponentiation of x,y
64
Modular Division of x,y
0
Incrementing x by 5, then x=
13
Decrementing x by 5, then x=
8
Multiply of x by 5, then x=
40
Dividing x by 5, x=
8
Remainder of Dividing x by 5, x=
3
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
x=8
y=2
echo "x=8, y=2"
echo "Addition of x & y"
echo $(( $x + $y ))
echo "Subtraction of x & y"
echo $(( $x - $y ))
echo "Multiplication of x & y"
echo $(( $x * $y ))
echo "Division of x by y"
echo $(( $x / $y ))
echo "Exponentiation of x,y"
echo $(( $x ** $y ))
echo "Modular Division of x,y"
echo $(( $x % $y ))
echo "Incrementing x by 5, then x= "
(( x += 5 ))
echo $x
echo "Decrementing x by 5, then x= "
(( x -= 5 ))
echo $x
echo "Multiply of x by 5, then x="
(( x *= 5 ))
echo $x
echo "Dividing x by 5, x= "
(( x /= 5 ))
echo $x
echo "Remainder of Dividing x by 5, x="
(( x %= 5 ))
echo $x
```

Bash project

Let command in bash script.

```
samim@9819fd877cfb527:~$ sudo nano let.sh
samim@9819fd877cfb527:~$ ./let.sh
Addition
z= 16
Substraction
z= 4
Multiplication
z = 60
Division
z = 1
Exponentiation
z = 1000000
Modular Division
z = 4
Incrementing x by 5, then x=
15
Decrementing x by 5, then x=
10
Multiply of x by 5, then x=
50
Dividing x by 5, x=
10
Remainder of Dividing x by 5, x=
0
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash

x=10
y=6
z=0
echo "Addition"
let "z = $(( x + y ))"
echo "z= $z"

echo "Substraction"
let "z = $((x - y ))"
echo "z= $z"

echo "Multiplication"
let "z = $(( x * y ))"
echo "z = $z"

echo "Division"
let "z = $(( x / y ))"
echo "z = $z"

echo "Exponentiation"
let "z = $(( x ** y ))"
echo "z = $z"

echo "Modular Division"
let "z = $(( x % y ))"
echo "z = $z"

let "x += 5"
echo "Incrementing x by 5, then x= "
echo $x

let "x -= 5"
echo "Decrementing x by 5, then x= "
echo $x
```

Bash project

Backticks and expr in bash script

```
samim@9819fd877cfb527:~$ sudo nano back.sh
samim@9819fd877cfb527:~$ sudo chmod back.sh
chmod: missing operand after 'back.sh'
Try 'chmod --help' for more information.
samim@9819fd877cfb527:~$ sudo chmod +x back.sh
samim@9819fd877cfb527:~$ ./back.sh
a=10, b=3
c is the value of addition c=a+b
c= 13
samim@9819fd877cfb527:~$ _
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
#Basic arithmetic using expr
echo "a=10, b=3"
echo "c is the value of addition c=a+b"
a=10
b=3
echo "c= `expr $a + $b`"
```

If statement

```
samim@9819fd877cfb527:~$ sudo nano if.sh
[sudo] password for samim:
samim@9819fd877cfb527:~$ sudo chmod +x if.sh
samim@9819fd877cfb527:~$ ./if.sh
Enter number : 126
Value is greater than 125
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
read -p "Enter number : " number
if [ $number -gt 125 ]
then
echo "Value is greater than 125"
fi
```

String comparison.

```
samim@9819fd877cfb527:~$ sudo nano if.sh
samim@9819fd877cfb527:~$ sudo nano str.sh
samim@9819fd877cfb527:~$ sudo chmod +x str.sh
samim@9819fd877cfb527:~$ ./str.sh
true condition
```

Bash project

```
samim@9819fd877cfb527: ~  
GNU nano 7.2  
#!/bin/bash  
# if condition is true  
if [ "myfile" == "myfile" ];  
then  
echo "true condition"  
fi  
  
# if condition is false  
if [ "myfile" == "yourfile" ];  
then  
echo "false condition"  
fi
```

Comparing numbers

```
samim@9819fd877cfb527:~$ sudo nano comp.sh  
samim@9819fd877cfb527:~$ sudo chmod +x comp.sh  
samim@9819fd877cfb527:~$ ./comp.sh  
10 is greater than 3.  
3 is less than 10.  
10 is equal to 10.
```

```
samim@9819fd877cfb527: ~  
GNU nano 7.2  
#!/bin/bash  
#if condition (greater than) is true  
if [ 10 -gt 3 ];  
then  
echo "10 is greater than 3."  
fi  
#if condition (greater than) is false  
if [ 3 -gt 10 ];  
then  
echo "3 is not greater than 10."  
fi  
#if condition (lesser than) is true  
if [ 3 -lt 10 ];  
then  
echo "3 is less than 10."  
fi  
#if condition (lesser than) is false  
if [ 10 -lt 3 ];  
then  
echo "10 is not less than 3."  
fi  
#if condition (equal to) is true  
if [ 10 -eq 10 ];  
then  
echo "10 is equal to 10."  
fi  
#if condition (equal to) is false  
if [ 10 -eq 9 ];  
then  
echo "10 is not equal to 9"  
fi
```

Bash project

And condition

```
samim@9819fd877cfb527:~$ sudo nano and.sh
samim@9819fd877cfb527:~$ sudo chmod +x and.sh
samim@9819fd877cfb527:~$ ./and.sh
Conditions are true
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
# TRUE && TRUE
if [ 8 -gt 6 ] && [ 10 -eq 10 ];
then
echo "Conditions are true"
fi
# TRUE && FALSE
if [ "mylife" == "mylife" ] && [ 3 -gt 10 ];
then
echo "Conditions are false"
fi
```

Or condition

```
samim@9819fd877cfb527:~$ sudo nano or.sh
samim@9819fd877cfb527:~$ sudo chmod +x or.sh
samim@9819fd877cfb527:~$ ./or.sh
Condition is true.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
# TRUE || FALSE
if [ 8 -gt 7 ] || [ 10 -eq 3 ];
then
echo " Condition is true. "
fi
# FALSE || FALSE
if [ "mylife" == "yourlife" ] || [ 3 -gt 10 ];
then
echo " Condition is false. "
fi
```

And or condition

```
samim@9819fd877cfb527:~$ sudo nano andor.sh
samim@9819fd877cfb527:~$ sudo chmod +x andor.sh
samim@9819fd877cfb527:~$ ./andor.sh
Condition is true.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
# TRUE && FALSE || FALSE || TRUE
if [[ 10 -eq 10 && 5 -gt 4 || 3 -eq 4 || 3 -lt 6 ]];
then
echo "Condition is true."
fi
# TRUE && FALSE || FALSE
if [[ 8 -eq 8 && 8 -gt 10 || 9 -lt 5 ]];
then
echo "Condition is false"
fi
```

Bash project

Nested if condition

```
samim@9819fd877cfb527:~$ sudo nano nest.sh
samim@9819fd877cfb527:~$ sudo chmod +x nest.sh
samim@9819fd877cfb527:~$ ./nest.sh
Condition is true.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
# TRUE && FALSE || FALSE || TRUE
if [[ 10 -eq 10 && 5 -gt 4 || 3 -eq 4 || 3 -lt 6 ]];
then
echo "Condition is true."
fi
# TRUE && FALSE || FALSE
if [[ 8 -eq 8 && 8 -gt 10 || 9 -lt 5 ]];
then
echo "Condition is false"
fi
```

If-else condition

```
samim@9819fd877cfb527: ~
/home/samim
samim@9819fd877cfb527:~$ sudo nano if_else.sh
[sudo] password for samim:
samim@9819fd877cfb527:~$ sudo chmod +x is_else.sh
chmod: cannot access 'is_else.sh': No such file or directory
samim@9819fd877cfb527:~$ sudo chmod +x if_else.sh
samim@9819fd877cfb527:~$ ./if_else.sh
10 is greater than 3.
3 is not greater than 10.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
#when the condition is true
if [ 10 -gt 3 ];
then
echo "10 is greater than 3."
else
echo "10 is not greater than 3."
fi
#when the condition is false
if [ 3 -gt 10 ];
then
echo "3 is greater than 10."
else
echo "3 is not greater than 10."
fi
```

Bash project

Join condition

```
samim@9819fd877cfb527:~$ sudo nano if_else.sh
samim@9819fd877cfb527:~$ sudo nano join.sh
samim@9819fd877cfb527:~$ sudo chmod +x join.sh
samim@9819fd877cfb527:~$ ./join.sh
Given condition is true.
Given condition is not true.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
# When condition is true
# TRUE && FALSE || FALSE || TRUE
if [[ 10 -gt 9 && 10 == 9 || 2 -lt 1 || 25 -gt 20 ]];
then
echo "Given condition is true."
else
echo "Given condition is false."
fi
# When condition is false
#TRUE && FALSE || FALSE || TRUE
if [[ 10 -gt 9 && 10 == 8 || 3 -gt 4 || 8 -gt 8 ]];
then
echo "Given condition is true."
else
echo "Given condition is not true."
fi
```

Single line if-else

```
samim@9819fd877cfb527:~$ sudo nano single_line.sh
samim@9819fd877cfb527:~$ ./single_line.sh
Enter a value:1
The value you typed is not greater than 9.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2                                single_line.sh
#!/bin/bash
read -p "Enter a value:" value
if [ $value -gt 9 ]; then echo "The value you typed is greater than 9."; else echo "The value you typed is not greater than 9."; fi
```

Nested if-else

```
samim@9819fd877cfb527:~$ sudo nano single_line.sh
samim@9819fd877cfb527:~$ sudo nano nested.sh
samim@9819fd877cfb527:~$ sudo chmod +x nested.sh
samim@9819fd877cfb527:~$ ./nested.sh
Enter a value:5
The value you typed is not greater than 9.
```

```
samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
read -p "Enter a value:" value
if [ $value -gt 9 ];
then
if [ $value -lt 11 ];
then
echo "$value>9, $value<11"
else
echo "The value you typed is greater than 9."
fi
else echo "The value you typed is not greater than 9."
fi
```

Bash project

Else-if condition

```
samim@9819fd877cfb527:~$ sudo nano else_if.sh
samim@9819fd877cfb527:~$ sudo chmod +x else_if.sh
samim@9819fd877cfb527:~$ ./else_if.sh
Enter a number of quantity:5
Eligible for 5% discount
```

```

samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
read -p "Enter a number of quantity:" num
if [ $num -gt 100 ];
then
echo "Eligible for 10% discount"
elif [ $num -lt 100 ];
then
echo "Eligible for 5% discount"
else
echo "Lucky Draw Winner"
echo "Eligible to get the item for free"
fi
```

Multiple else-if condition

```
samim@9819fd877cfb527:~$ sudo nano multiple_else_if.sh
samim@9819fd877cfb527:~$ sudo chmod +x multiple_else_if.sh
samim@9819fd877cfb527:~$ ./multiple_else_if.sh
Enter a number of quantity:5
No discount
```

```

samim@9819fd877cfb527: ~
GNU nano 7.2
#!/bin/bash
read -p "Enter a number of quantity:" num
if [ $num -gt 200 ];
then
echo "Eligible for 20% discount"
elif [[ $num == 200 || $num == 100 ]];
then
echo "Lucky Draw Winner"
echo "Eligible to get the item for free"
elif [[ $num -gt 100 && $num -lt 200 ]];
then
echo "Eligible for 10% discount"
elif [ $num -lt 100 ];
then
echo "No discount"
fi
```