

UNIX / LINUX - SHELL RELATIONAL OPERATORS EXAMPLE

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Bourne Shell supports the following relational operators that are specific to numeric values. These operators do not work for string values unless their value is numeric.

Assume variable **a** holds 10 and variable **b** holds 20 then –

Operator	Description	Example
-eq	Checks if the value of two operands are equal or not; if yes, then the condition becomes true.	[\$a -eq \$b] is not true.
-ne	Checks if the value of two operands are equal or not; if values are not equal, then the condition becomes true.	[\$a -ne \$b] is true.
-gt	Checks if the value of left operand is greater than the value of right operand; if yes, then the condition becomes true.	[\$a -gt \$b] is not true.
-lt	Checks if the value of left operand is less than the value of right operand; if yes, then the condition becomes true.	[\$a -lt \$b] is true.
-ge	Checks if the value of left operand is greater than or equal to the value of right operand; if yes, then the condition becomes true.	[\$a -ge \$b] is not true.
-le	Checks if the value of left operand is less than or equal to the value of right operand; if yes, then the condition becomes true.	[\$a -le \$b] is true.

It is very important to understand that all the conditional expressions should be placed inside square braces with spaces around them. For example, [**\$a <= \$b**] is correct whereas, [**\$a <= \$b**] is incorrect.

Example

Here is an example which uses all the relational operators –

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```
#!/bin/sh

a=10
b=20

if [ $a -eq $b ]
then
    echo "$a -eq $b : a is equal to b"
else
    echo "$a -eq $b: a is not equal to b"
fi

if [ $a -ne $b ]
then
    echo "$a -ne $b: a is not equal to b"
else
    echo "$a -ne $b : a is equal to b"
fi
```

```
if [ $a -gt $b ]
then
    echo "$a -gt $b: a is greater than b"
else
    echo "$a -gt $b: a is not greater than b"
fi

if [ $a -lt $b ]
then
    echo "$a -lt $b: a is less than b"
else
    echo "$a -lt $b: a is not less than b"
fi

if [ $a -ge $b ]
then
    echo "$a -ge $b: a is greater or equal to b"
else
    echo "$a -ge $b: a is not greater or equal to b"
fi

if [ $a -le $b ]
then
    echo "$a -le $b: a is less or equal to b"
else
    echo "$a -le $b: a is not less or equal to b"
fi
```

The above script will generate the following result –

```
10 -eq 20: a is not equal to b
10 -ne 20: a is not equal to b
10 -gt 20: a is not greater than b
10 -lt 20: a is less than b
10 -ge 20: a is not greater or equal to b
10 -le 20: a is less or equal to b
```

The following points need to be considered while working with relational operators –

- There must be spaces between the operators and the expressions. For example, `2+2` is not correct; it should be written as `2 + 2`.
- **if...then...else...fi** statement is a decision-making statement which has been explained in the next chapter.