C# Logical Operators with Examples

In c#, **Logical Operators** are useful to perform the logical operation between two operands like AND, OR, and NOT based on our requirements. The Logical Operators will always work with Boolean expressions (**true** or **false**) and return Boolean values.

The operands in logical operators must always contain only Boolean values. Otherwise, Logical Operators will throw an error.

The following table lists the different types of operators available in c# logical operators.

Operator	Name	Description	Example (a = true, b = false)
&&	Logical AND	It returns true if both operands are non-zero.	a && b (false)
||	Logical OR	It returns true if any one operand becomes a non-zero.	a || b (true)
!	Logical NOT	It will return the reverse of a logical state that means if both operands are non-zero, it will return false.	!(a && b) (true)

If we use Logical **AND**, **OR** operators in c# applications, those will return the result as shown below for different inputs.

Operand1	Operand2	AND	OR
true	true	true	true
true	false	false	true
false	true	false	true
false	false	false	false

If you observe the above table, if any one operand value becomes **false**, then the logical **AND** operator will return **false. The** logical **OR** operator will return **true** if any one operand value becomes **true**.

If we use the Logical **NOT** operator in our c# applications, it will return the results like as shown below for different inputs.

Operand	NOT
true	false
false	true

If you observe the above table, the Logical **NOT** operator will always return the reverse value of the operand. If the operand value is **true**, then the Logical **NOT** operator will return **false** and vice versa.

C# Logical Operators Example

Following is the example of using the Logical Operators in c# programming language.

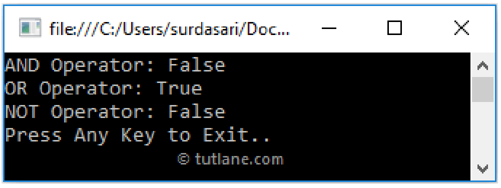
```
using System;

namespace Tutlane
{
    class Program
    {
        static void Main(string[] args)
        {
            int x = 15, y = 10;
            bool a = true, result;
            // AND operator
            result = (x <= y) && (x > 10);
            Console.WriteLine("AND Operator: " + result);
            // OR operator
            result = (x >= y) || (x < 5);
            Console.WriteLine("OR Operator: " + result);
            //NOT operator
            result = !a;
            Console.WriteLine("NOT Operator: " + result);
            Console.WriteLine("Press Enter Key to Exit..");
            Console.ReadLine();
        }
    }
}
```

If you observe the above code, we used logical operators (**AND**, **OR**, **NOT**) to perform different operations on defined operands.

Output of C# Logical Operators Example

When we execute the above c# program, we will get the result as shown below.



```
AND Operator: False
OR Operator: True
NOT Operator: False
Press Any Key to Exit..
```

This is how we can use logical operators in the c# programming language to perform logical operations on defined operands based on our requirements.

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