## C# Programming – Operators

**Operators**

**Arithmetic Operators**

**Arithmetic operators** are used to manipulate an object, usually integer or float objects, in various ways.

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| --- | --- | --- | --- |
| Operator | Symbol | Description | Integer Examples |
| Addition | + | Adds two objects together | 3 + 4  7 |
| Subtraction | - | Subtracts the second object from the first | 8 – 2  6 |
| Division | / | Divides the first object by the second object | 6 / 3  2 |
| Multiplication | \* | Multiplies both objects together | 10 \* 4  40 |
| Modulus | % | Remainder after the division of the two objects | 10 % 3  1 |
| Increment | ++ | Increases the integer value by 1 | 4++  5 |
| Decrement | -- | Decreases the integer value by 1 | 3--  2 |
|  |  |  |  |

**Relational Operators**

A **relational operator** is a construct that tests a specific relationship between two objects. If the test is passed the construct is set to **true**, otherwise it is set to **false**.

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| --- | --- | --- | --- |
| Operator | Symbol |  | Example |
| Equals | == | Returns **true** if the values of the objects are equal | ( 6 == 6 )  **true**  ( 3 == 2 )  **false** |
| Not Equals | != | Returns **true** if the values of the objects are not equal | ( 2 != 3 )  **true**  ( 4 != 4 )  **false** |
| Greater Than | > | Returns **true** if the value of the first object is greater than the value of the second object. | ( 4 > 2 )  **true**  ( 2 > 9 )  **false** |
| Less Than | < | Returns **true** if the value of the first object is less than the value of the second object. | ( 1 < 2 )  **true**  ( 5 < 3 )  **false** |
| Greater Than or Equal To | >= | Returns **true** if the value of the first object is greater than or equal to the value of the second object. | ( 2 >= 2 )  **true**  ( 2 >= 9 )  **false** |
| Less Than or Equal to | <= | Returns **true** if the value of the first object is less than or equal to the value of the second object. | ( 2 <= 2 )  **true**  ( 4 <= 1 )  **false** |

**Logical Operators**

**Logical operators** are used to test multiple conditional operators, and return a single **boolean**, determined by the operator used.

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| --- | --- | --- | --- |
| Operator | Symbol | Description | Example |
| And | && | If both operators are **true** this returns **true** | ( **true** && **false** ) **false** |
| Or | || | If either of the operators are **true** this returns **true** | ( **true** || **false** ) **true** |
| Not | ! | Returns the reverse **Bool** value of the operator | ! ( **false** ) **true** |