Expressions

Programming in C

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  - logical

Arithmetic Operators

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`+` `-` `*` `/` `%`

Things to remember:

- Operator precedence is still **MD**/**AS**, evaluated from **left to right** for operators with the same priority.

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- When both operands are integers, the result is also an integer. Otherwise, the result is a floating-point number.
- The modulo `%` operator can have integer operands only.

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Examples

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5 + 5 / 2 - 2 + 1 * 9 / 3
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2.
```
15 % 6 * 2.5 + 1
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Evaluating Expressions

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Example: Given `a = 11`, `b = 2`, and `c = 5`, evaluate the following:

1. `a / b / c`
2. `(a / b) / c`
3. `a / (b / c)`

Arithmetic Operators

highest	`()`	left to right
	unary `+`, unary `-`	right to left
	`%`, `*`, `/`	left to right
	`+`, `-`	left to right

Relational Operators

Relational Operators

`>` `>=` `<` `<=` `==` `!=`

`==` equality

`!=` inequality

Things to remember:

Relational Operators

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>   >=   <   <=     ==        !=
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equality inequality

Things to remember:

- Evaluating relational expressions results to **true** or **false**

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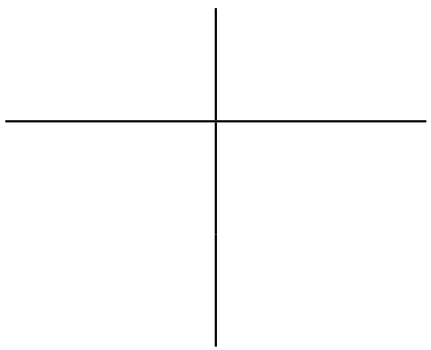

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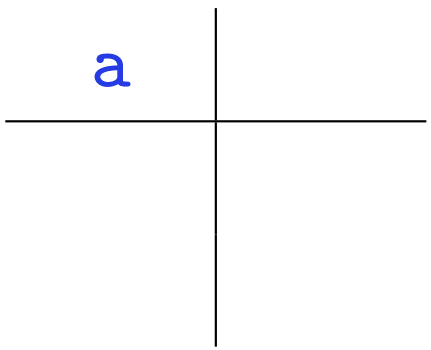

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Evaluate:

1. `!5`

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Evaluate:

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2. `!(3 < 3)`

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Example: `!a`

a	!a
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Evaluate:

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2. `!(3 < 3)`
3. `!(4 - 2 * 2)`

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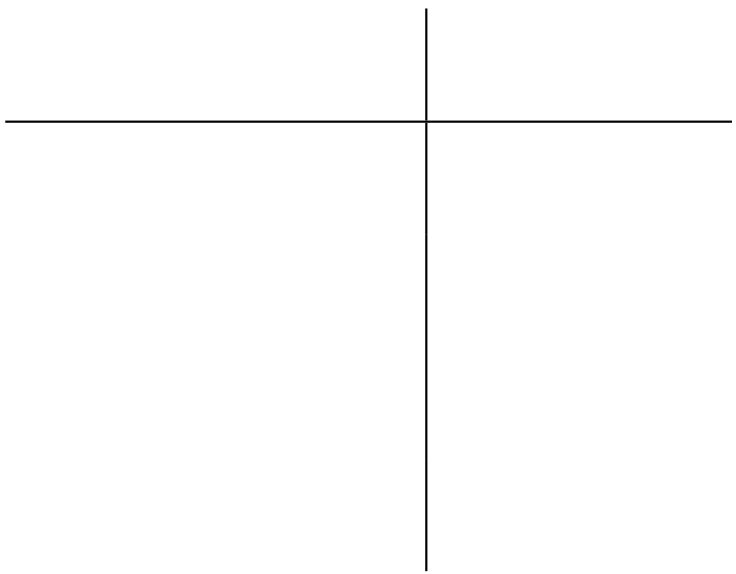

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3. `!(4 - 2 * 2) && (5 % 3 == 2)`

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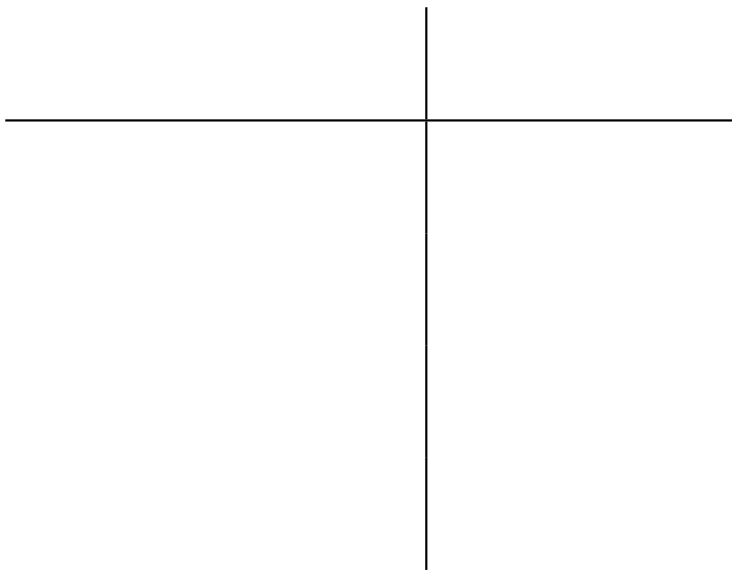

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- written in C as `||`
- is a binary operator
- results to **true** when **at least one** operand is **true**. Otherwise, the result is **false**.

Example: `a || b`

a	b	a || b
true	true	true
true	false	true
false	true	true
false	false	false

Evaluate:

1. `(5 < 4) || (6 > 7)`
2. `!(3 <= 3) || 8`
3. `!(4 / 2 * 2) || (5 % 3 == 2)`

Logical Operators

highest	`()`	left to right
	unary `+`, unary `-` `!`	right to left
	`%`, `*`, `/`	left to right
	`+`, `-`	left to right
	`>`, `>=`, `<`, `<=`	left to right
	`==`, `!=`	left to right
	`&&`	left to right
	`||`	left to right

C Operator Precedence Table: https://en.cppreference.com/w/c/language/operator_precedence

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4. `4 * 5.0 / 8 - 10`

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Express the following using expressions in C. Use the underlined words as identifiers.

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4. $x = \dfrac{a + 3b}{2c}$

☺ Thank you! ☺