%

[Arithmetic Operators]

Description

**Remainder** operation calculates the remainder when one integer is divided by another. It is useful for keeping a variable within a particular range (e.g. the size of an array). The % (percent) symbol is used to carry out remainder operation.

Syntax

remainder = dividend % divisor;

Parameters

remainder: variable. Allowed data types: int, float, double.  
dividend: variable or constant. Allowed data types: int.  
divisor: **non zero** variable or constant. Allowed data types: int.

Example Code

int x = 0;

x = 7 % 5; // x now contains 2

x = 9 % 5; // x now contains 4

x = 5 % 5; // x now contains 0

x = 4 % 5; // x now contains 4

x = -4 % 5; // x now contains -4

x = 4 % -5; // x now contains 4

/\* update one value in an array each time through a loop \*/

int values[10];

int i = 0;

void setup() {}

void loop() {

values[i] = analogRead(0);

i = (i + 1) % 10; // remainder operator rolls over variable

}

Notes and Warnings

1. The remainder operator does not work on floats.
2. If the **first** operand is negative, the result is negative (or zero). Therefore, the result of x % 10 will not always be between 0 and 9 if x can be negative.