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LANGUAGE

FUNCTIONS

VARIABLES

STRUCTURE

LIBRARIES

IOT CLOUD API

GLOSSARY

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Language Reference

Arduino programming language can be divided in three main parts: functions (values (variables and constants), and structure.

Functions

For controlling the Arduino board and performing computations.

Digital I/O

[digitalRead\(\)](#)
[digitalWrite\(\)](#)
[pinMode\(\)](#)

Analog I/O

[analogRead\(\)](#)
[analogReference\(\)](#)
[analogWrite\(\)](#)

Zero, Due & MKR Family

[analogReadResolution\(\)](#)
[analogWriteResolution\(\)](#)

Advanced I/O

[noTone\(\)](#)
[pulseIn\(\)](#)
[pulseInLong\(\)](#)
[shiftIn\(\)](#)
[shiftOut\(\)](#)
[tone\(\)](#)

Time

[delay\(\)](#)
[delayMicroseconds\(\)](#)
[micros\(\)](#)
[millis\(\)](#)

Math

[abs\(\)](#)
[constrain\(\)](#)
[map\(\)](#)
[max\(\)](#)
[min\(\)](#)
[pow\(\)](#)
[sq\(\)](#)
[sqrt\(\)](#)

Trigonometry

[cos\(\)](#)
[sin\(\)](#)
[tan\(\)](#)

Help

HARDWARE	SOFTWARE	CLOUD	DOCUMENTATION	COMMUNITY	BLOG	ABOUT
		isAlphaNumeric()	isAscii()	randomSeed()	noInterrupts()	
		isControl()		Bits and Bytes	Communication	
		isDigit()		bit()	Serial	
		isGraph()		bitClear()	SPI	
		isHexadecimalDigit()		bitRead()	Stream	
		isLowerCase()		bitSet()	Wire	
		isPrintable()		bitWrite()		
		isPunct()		highByte()		
		isSpace()		lowByte()	USB	
		isUpperCase()			Keyboard	
		isWhitespace()			Mouse	
				External Interrupts		
				attachInterrupt()		
				detachInterrupt()		

Variables

Arduino data types and constants.

Constants	Conversion
HIGH LOW	(unsigned int)
INPUT OUTPUT INPUT_PULLUP	(unsigned long)
LED_BUILTIN	byte()
true false	char()
Floating Point Constants	float()
Integer Constants	int()
	long()
	word()

Help

HARDWARE	SOFTWARE	CLOUD	DOCUMENTATION	COMMUNITY	BLOG	ABOUT
		bool		scope		
		boolean		static		
		byte		volatile		
		char				
		double				
		float		Utilities		
		int		PROGMEM		
		long		sizeof()		
		short				
		size_t				
		string				
		String()				
		unsigned char				
		unsigned int				
		unsigned long				
		void				
		word				

Structure

The elements of Arduino (C++) code.

Sketch

loop()
setup()

Control Structure

break
continue
do...while
else
for
goto
if
return
switch...case
while

Further Syntax

#define (define)
#include (include)
/* */ (block comment)
// (single line comment)
; (semicolon)
{ } (curly braces)

Help

HARDWARE	SOFTWARE	CLOUD	DOCUMENTATION	COMMUNITY	BLOG	ABOUT
		<div>(multiplication)</div> <div>+ (addition)</div> <div>- (subtraction)</div> <div>/ (division)</div> <div>= (assignment operator)</div>		<div>&& (logical and)</div> <div> (logical or)</div> <div>Pointer Access Operators</div> <div>& (reference operator)</div> <div>* (dereference operator)</div> <div>Bitwise Operators</div> <div>& (bitwise and)</div> <div><< (bitshift left)</div> <div>>> (bitshift right)</div> <div>^ (bitwise xor)</div> <div> (bitwise or)</div> <div>~ (bitwise not)</div>	<div>&= (compound &)</div> <div>*= (compound m</div> <div>++ (increment)</div> <div>+= (compound a</div> <div>-- (decrement)</div> <div>-= (compound su</div> <div>/= (compound di</div> <div>^= (compound b</div> <div> = (compound b</div>	

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