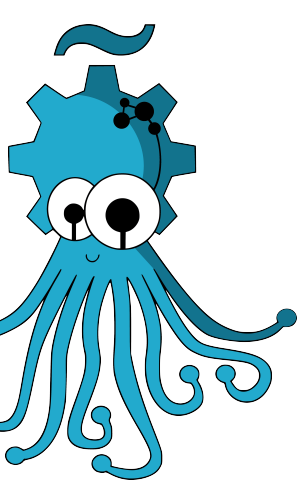




REFERENCIA RÁPIDA ARDUINO

OSHWDEM - 2014



Estructura

```
void setup()
void loop()
```

Control de flujo

```
if (x<5) {}
for (int i = 0; i < 255; i++) {}
while ((x < 6) {}
```

Sintaxis adicional

```
// comentario de linea
/* .. */ comentario multilinea
#define ANSWER 42
#include <myLib.h>
```

Operadores

=	asignación
+, -	suma, resta
*, /	multiplicación, division
%	módulo
==	igualdad
!=	desigualdad
<	menor que
<=	menor o igual que
>	mayor que
>=	mayor o igual que
++	incremento
--	decremento

Operadores de bit

&	bitwise AND
	bitwise OR
^	bitwise XOR
~	bitwise NOT

Operadores con asignación

% =	módulo
+ =, - =	suma, resta
* =, / =	multiplicación, division
& =, =	bitwise AND, OR
^ =, ~ =	bitwise XOR, NOT

Constantes

HIGH, LOW
INPUT, OUTPUT
true, false
53 : Decimal
B11010101 : Binary
0x5BA4 : Hexadecimal

Tipos de datos

void	
boolean	0, 1, false, true
char	e.g. 'a' -128 → 127
unsigned char	0 → 255
int	-32.768 → 32.767
unsigned int	0 → 65535
long	-2.147.483.648 → 2.147.483.647
float	-3,4028235E+38 → 3.402835E+38
sizeof (myint)	returns 2 bytes

Arrays

```
int myInts[6];
int myPins[]=2,4,8,5,6;
int myVals[6]=2,-4,9,3,5;
```

Strings

```
char S1[15];
char S2[8]='A','r','d','u','i','n','o';
char S3[8]='A','r','d','u','i','n','o','\0';
char S4[]="Arduino";
char S5[8] = "Arduino";
char S6[15] = "Arduino";
```

Conversión

char()	int()	long()
byte()	word()	float()

Calificadores

static	Persist between calls
volatile	Use RAM (nice for ISR)
const	Mark read-only
PROGMEM	Use flash memory

Interrupciones

```
attachInterrupt(interrupt, function, type)
detachInterrupt(interrupt)
boolean(interrupt)
interrupts()
noInterrupts()
```

E/S Avanzada

```
tone(pin, freqhz)
tone(pin, freqhz, duration_ms)
noTone(pin)
shiftOut (dataPin, clockPin, how, value)
unsigned long pulseIn(pin, [HIGH,LOW])
```

Tiempo

unsigned long millis()	50 days overflow
unsigned long micros()	70 min overflow
delay(ms)	
delayMicroseconds(us)	

Matemáticas

```
min(x,y) max(x,y) abs(x)
sin(rad) cos(rad) tan(rad)
pow(base, exponent)
map(val, fromL, fromH, toL, toH)
constrain(val, fromL, toH)
```

Números Pseudo Aleatorios

```
randomSeed(seed)
long random(max)
long random(min, max)
```

Pines E/S

	Uno	Mega
# of IO	14 + 6	54 + 11
Serial Pins	3	0 - RX, 1 -TX
Interrupts	2,3	RX1 → RX4
PWM Pins	5,6 - 9,10 - 3,11	0 → 13
SPI (SS, MOSI, MISO, SCK)	10 → 13	50 → 53
I2C (SDA, SCK)	A4, A5	20,21

E/S Analógica

```
analogReference (EXTERNAL, INTERNAL)
int analogRead (pin)
analogWrite (pin, valor) - PWM
```

E/S Digital

```
pinMode (pin, [INPUT, OUTPUT])
digitalWrite (pin, value)
int digitalRead (pin)
```

Comunicación Serie

```
Serial.begin(speed)
Serial.print("Text")
Serial.println("Text")
```

Web

forum.arduino.cc
playground.arduino.cc
arduino.cc/en/Reference

Arduino Uno

