

ARDUINOCHEATSHEET

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Structure

void setup()
void loop()

Control Structures

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

Further Syntax

// Single line comment
/* .. * / Multi line comment
#define ANSWER 42
#include <myLib.h>

General Operators

assignment
addition, substraction
multiplication, division
modulo
equal to
not equal to
less than

less than or equal to

Pointer Access

 $\leq =$

& reference operator* dereference operator

Bitwise Operators

& bitwise AND
| bitwise OR

∧ bitwise XOR

~ bitwise NOT

Compound Operators

++ Increment
-- Decrement
+ = Compound addition
& = Compound bitwise AND

Constants

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

Data Types

void

boolean 0, 1, false, true e.g. 'a' -128 \rightarrow 127

unsigned char $0 \rightarrow 255$

int $-32.768 \rightarrow 32.767$ unsigned int $0 \rightarrow 65535$

long $-2.147.483.648 \rightarrow 2.147.483.647$ float $-3,4028235E+38 \rightarrow 3.402835E+38$

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";

Conversion

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

Qualifiers

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

Interrupts

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

Advanced I/O

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

Time

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

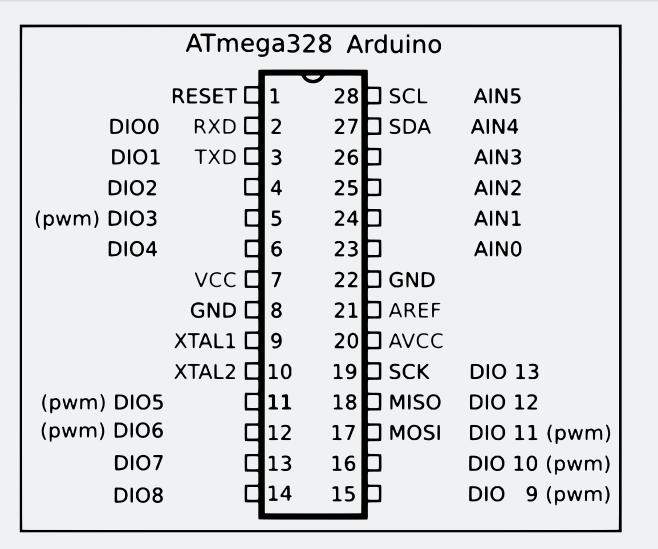
Math

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)

Pseudo Random Numbers

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

ATmega328 Pinout



I/O Pins

	Uno	Mega
# of IO	14 + 6	54 + 11
Serial Pins 3	0 - RX, 1 -TX	$RX1 \rightarrow RX4$
Interrupts	2,3	2,3,18,19,20,21
PWM Pins	5,6 - 9,10 - 3,11	$0 \rightarrow 13$
SPI (SS, MOSI, MISO, SCK)	$10 \rightarrow 13$	$50 \rightarrow 53$
I2C (SDA, SCK)	A4, A5	20,21

Analog I/O

analogReference(EXTERNAL, INTERNAL)
analogRead(pin)
analogWrite(pin)

Digital I/O

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

Serial Communication

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

Websites

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

Arduino Uno Board

