VENTURESITY
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Arduino Cheat Sheet

Structure

```
/* Each Arduino sketch must contain the
following two functions. */
void setup()
{
/* this code runs once at the beginning of
the code execution. */
}
void loop()
{
/* this code runs repeatedly over and over
as long as the board is powered. */
}
```

Comments

```
// this is a single line
/* this is
a multiline */
```

Setup

```
pinMode(pin, [INPUT \ OUTPUT \ INPUT_PULLUP]);

/* Sets the mode of the digital I/O pin.
It can be set as an input, output, or an
input with an internal pull-up resistor.
*/
```

Control Structures

```
if(condition)
{
// if condition is TRUE, do something here
}
else
{
// otherwise, do this
}
for(initialization; condition; increment)
{
// do this
}
/* The 'for' statement is used to repeat
a block of statements enclosed in curly
braces. An increment counter is usually
used to increment and terminate the loop
```

Digital I/O

```
digitalWrite(pin, val);-->
/* val = HIGH or LOW write a
HIGH or a LOW value to a digital pin. */

int var = digitalRead(pin);-->
/* Reads the value from a
specified digital pin, either HIGH or LOW. */
```

Analog I/O

```
analogWrite(pin, val);-->
/* Writes an analog value to a pin.  val = integer value
from 0 to 255 */

int var = analogRead(pin);-->
/* Reads the value from the specified analog pin. */
```

Advanced I/O

```
tone(pin, freq);
 /* Generates a square wave of the specified frequency to a pin.
Pin must be one of the PWM (~) pins. */

 tone(pin, freq, duration);
 /* Generates a square wave of the specified frequency to a pin
for a duration in milliseconds. Pin must be one of the PWM (~)
pins. */

noTone(pin);     // Turns off the tone on the pin.

Time delay(time_ms);
/* Pauses the program for the amount of time (in milliseconds).
*/

delayMicroseconds(time_us);
/* Pauses the program for the amount of time (in microseconds).
*/

millis();
/* Returns the number of milliseconds since the board began
running the current program. max: 4,294,967,295 */

micros();
/* Returns the number of microseconds since the board began
running the current program. max: 4,294,967,295 */
```

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Data Types

```
Void          // nothing is returned
boolean       // 0, 1, false, true
char           // 8 bits: ASCII character
byte           // 8 bits: 0 to 255, unsigned
int           // 16 bits: 32,768 to 32,767, signed
long          /* 32 bits: 2,147,483,648 to
2,147,483,647, signed */

float          // 32 bits, signed decimal
```

Logical Operators

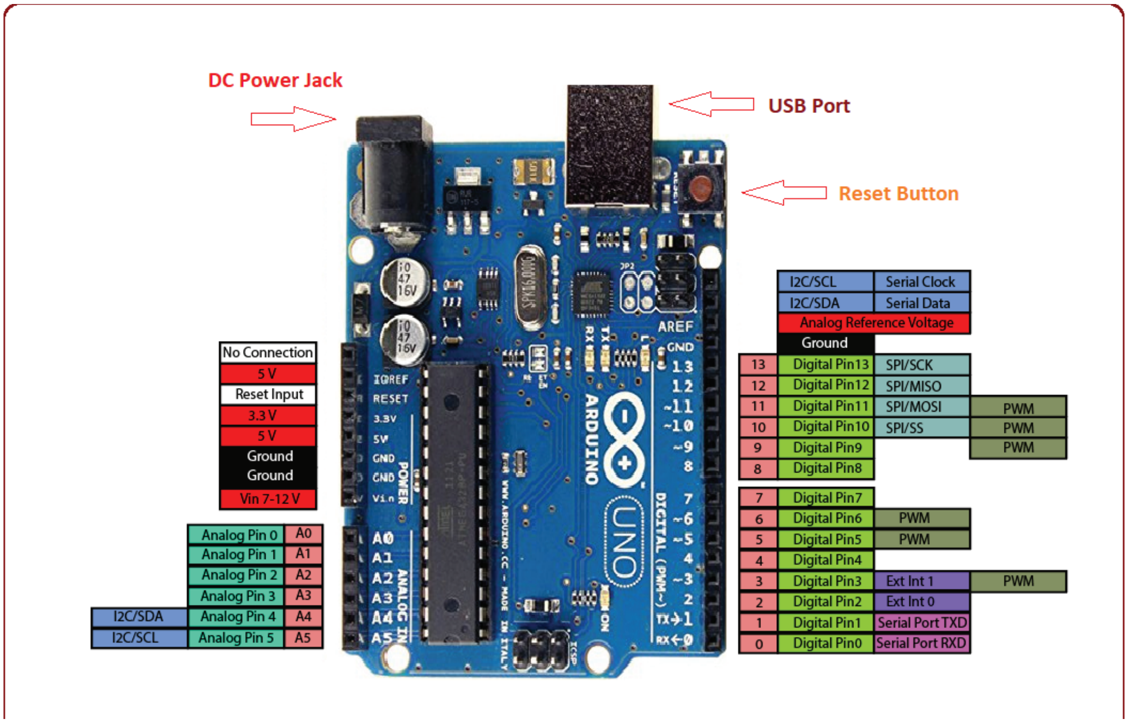
```
==     // boolean equal to
!=     // not equal to
<      // less than
>      // greater than
<=     // less than or equal to
>=     // greater than or equal to
&&     // Boolean AND
||     // Boolean OR
!      // Boolean NOT
```

Mathematical Operators

```
=       // assignment
+       // addition
-       // subtraction
*       // multiplication
/       // division
%       // modulus
```

Constants

```
HIGH \ LOW
INPUT \ OUTPUT
true \ false
```



Arduino Uno Pinout