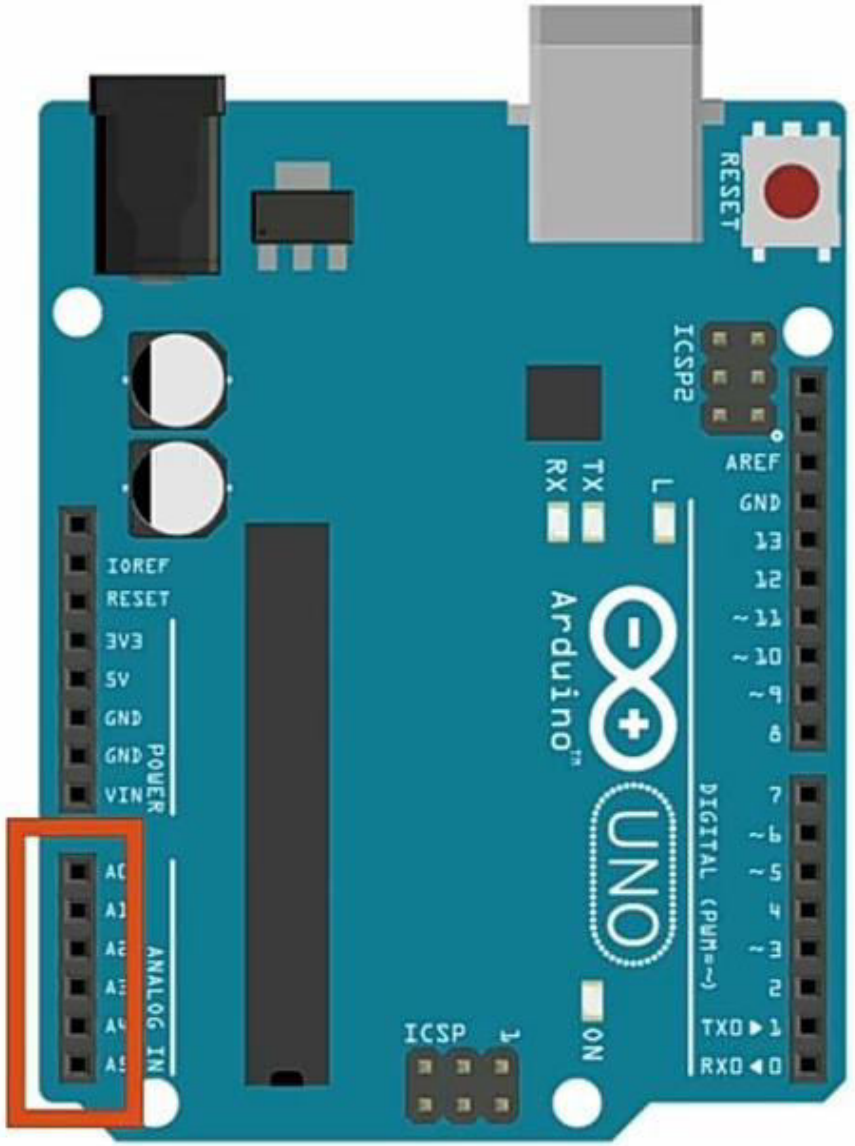
DIGITAL OUTPUT

DIGITAL INPUT

ANALOG PINS

ANALOG INPUT



HIGH

LOW

5V ⟺ 0V

1V, 2V, 3V

ANALOG I/O FUNCTIONS IN ARDUINO PRGRAMMING

- analogRead()

Reads the value from the specified analog pin. Arduino boards contain a multichannel, 10-bit analog to digital converter. This means that it will map input voltages between 0 and 5V into integer values between 0 and 1023.

- Syntax

analogRead(pin);

pin: Arduino pin

- Ex: analogRead(A0);

ANALOG I/O FUNCTIONS IN ARDUINO PRGRAMMING

- analogWrite()

Writes an analog value (PWM wave) to a pin. Can be used to light a LED at varying brightness or drive a motor at various speeds.

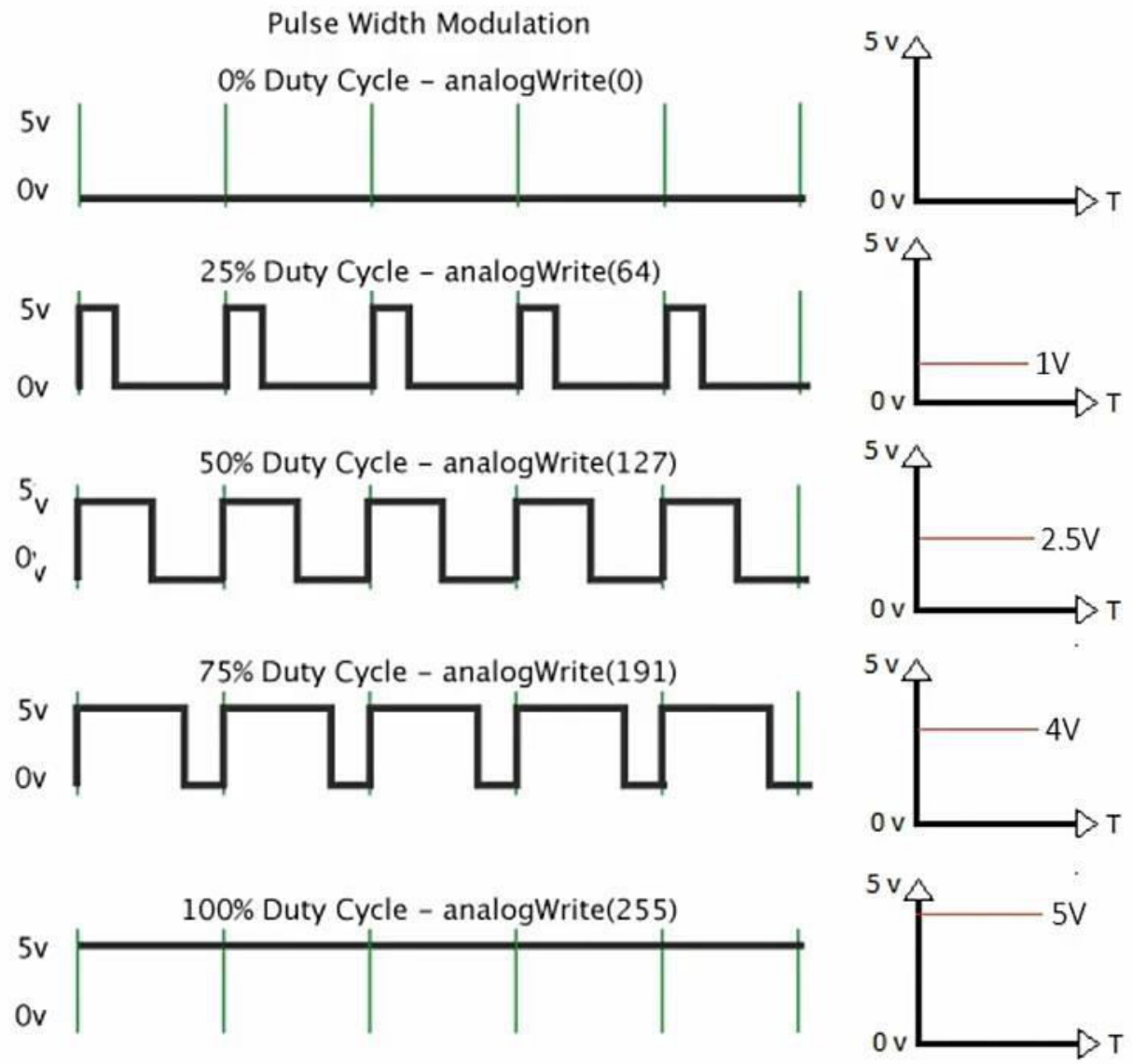
- Syntax

analogWrite(pin, value);

pin: Arduino pin

value: the duty cycle: between 0 (always off) and 255 (always on).

- Ex: analogWrite(6, 200);


Pulse Width Modulation
0% Duty Cycle – analogWrite(0)
5v
0v
5 v
0 v
T
25% Duty Cycle – analogWrite(64)
5v
0v
1V
50% Duty Cycle – analogWrite(127)
2.5V
75% Duty Cycle – analogWrite(191)
4V
100% Duty Cycle – analogWrite(255)
5V