# Requirements

To implement this project we need following compents:

Atmega328:

The ATmega328 is a single-chip microcontroller created by Atmel inthe mega AVR family (later Microchip Technology acquired Atmel in 2016). It has a modified Harvard architecture 8-bit RISC processor core. The Atmel 8 bit AVR RISC-based microcontroller combines 32 KB ISP flash memory with read-while-write capabilities, 1 KB EEPROM, 2 KB SRAM, 23 general-purpose I/O lines, 32 general-purpose working registers, 3 flexible timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI serial port, 6-channel 10-bit A/D converter (8 channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal oscillator, and 5 software-selectable power-saving modes. The device operates between 1.8 and 5.5 volts. The device achieves throughput.

A common alternative to the ATmega328 is the "pico Power" ATmega328P. A comprehensive list of all other members of the mega AVR series can be found on the Atmel website.

- ATmega328
- ATmega328P and ATmega328P-AUTOMOTIVE
- ATmega328PB and ATmega328PB-AUTOMOTIVE (superset of ATmega328P) - has more UART, I2C, and SPI peripherals than ATmega328P
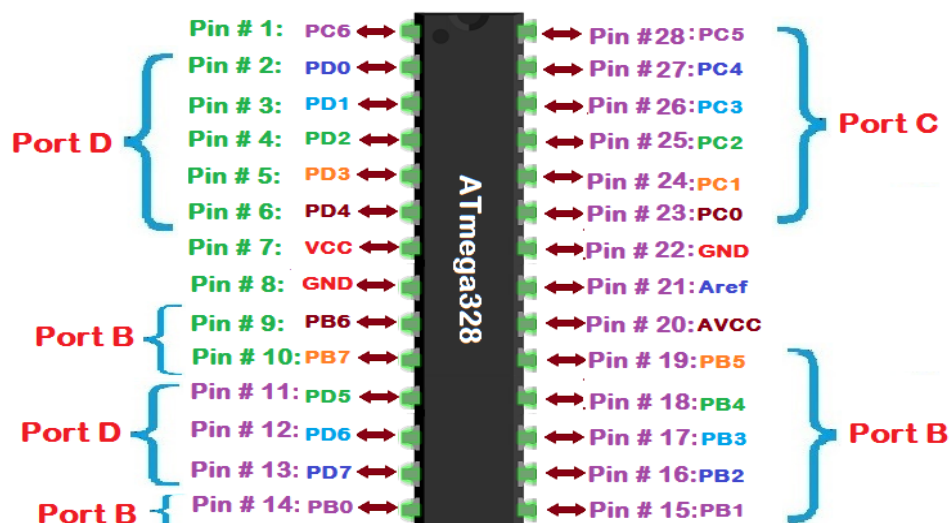
Ultrasonic Sensor-HC_SR04:

HC-SR04 ultrasonic distance sensor. This economical sensor provides 2cm to 400cm of non-contact measurement functionality with a ranging accuracy that can reach up to 3mm. Each HC-SR04 module includes an ultrasonic transmitter, a receiver and a control circuit.

There are only four pins that you need to worry about on the HC-SR04: VCC (Power), Trig (Trigger), Echo (Receive), and GND (Ground). You will find this sensor very easy to set up and use for your next range-finding project!This sensor has additional control circuitry that can prevent inconsistent "bouncy" data depending on the application.

Wi-fi Module:

The ESP8266 ESP-01 is a Wi-Fi module that allows microcontrollers access to a Wi-Fi network. This module is a self-contained SOC (System On a Chip) that doesn't necessarily need a microcontroller to manipulate inputs and outputs as you would normally do with an Arduino.

for example, because the ESP-01 acts as a small computer. Depending on the version of the ESP8266, it is possible to have up to 9 GPIOs(General Purpose Input Output). Thus, we can give a microcontroller internet access like the Wi-Fi shield does to the Arduino.

we can simply program the ESP8266 to not only have access to a Wi-Fi network, but to act as a microcontroller as well. This makes the ESP8266 very versatile, and it can save you some money and space in your projects.

LED:

The LED's are used to show, if the led' s are turn on it means the water tank is over flow with water. If led' s are turn off when the water tank is not overflow.