The main objective of this project is to design and build an IoT based water level indicator that will allow the person to measure and monitor the water level inside of a water tank from anywhere in the world. Also, a red led indication will be provided to the system so that whenever the water level going below to a particular level, the led will give indication. The person can monitor the water level inside the water tank over a gauge meter widget created on the Arduino IoT cloud dashboard.

The water level gauge meter is internet connected so that the persons can measure the real time values regarding the water level from anywhere in the world. The working of the project is so simple, we have to create a water level gauge widget on the dashboard of Arduino IoT cloud and write corresponding sketch for the application. Once the program is installed, there is an application available on both play store and app store called “Arduino IoT remote”, people can login to the created dashboard from the application and access the widget. The next step is to monitor the measured values.

We build this project on NodeMCU - is an open-source software and hardware development environment built around an inexpensive System-on-a-Chip (SoC) called the ESP8266. The ESP8266, designed and manufactured by Espressif Systems, contains the crucial elements of a computer: CPU, RAM, networking (Wi-Fi), and even a modern operating system and SDK. That makes it an excellent choice for Internet of Things (IoT) projects of all kinds.

The main component used in this project is:

* **NodeMCU** is a low-cost open source IoT platform. It initially included firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which was based on the ESP-12 module. Later, support for the ESP32 32-bit MCU was added. It's an open-source firmware for which open-source prototyping board designs are available. The name "NodeMCU" combines "node" and "MCU" (micro-controller unit). The term "NodeMCU" strictly speaking refers to the firmware rather than the associated development kits.
* **Water level sensors** are used to detect the level of substances that can flow. Such substances include liquids, slurries, granular material and powders. Such measurements can be used to determine the number of materials within a closed container or the flow of water in open channels.
* **Light-Emitting Diode(s) (LED)** is a semiconductor device that emits light when an electric current is passed through it. Light is produced when the particles that carry the current (known as electrons and holes) combine together within the semiconductor material.