WATER MEASUREMENT SYSTEM USING ULTRASONIC

IOT

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Water Measurement Using Ultrasonic Sensor

Description:

- In this project we will use the ultrasonic sensor to detect the water level.
- You can also create this project using water sensor

Software:

- Arduino IDE

Components Required:

- Ultrasonic sensor

- Arduino UNO

Wiring Schematics:

Ultrasonic sensor	Arduino UNO
Trig	4
Echo	2
VCC	5V
GND	GND

Code:

```
long duration, cm, inches;
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);



long duration, cm, inches;


void setup() {
  //Serial Port begin
  Serial.begin (9600);
  //Define inputs and outputs
  pinMode(4, OUTPUT);
  pinMode(2, INPUT);
}


void loop()
{


  // The sensor is triggered by a HIGH pulse of 10 or more microseconds.
  // Give a short LOW pulse beforehand to ensure a clean HIGH pulse:
  digitalWrite(4, LOW);
  delayMicroseconds(5);
  digitalWrite(4, HIGH);
  delayMicroseconds(10);
  digitalWrite(4, LOW);


  // Read the signal from the sensor: a HIGH pulse whose
  // duration is the time (in microseconds) from the sending
  // of the ping to the reception of its echo off of an object.
  pinMode(2, INPUT);
```

```
  duration = pulseIn(2, HIGH);


  // convert the time into a distance
  cm = (duration/2) / 29.1;
  inches = (duration/2) / 74;
  Serial.print("Distance: ");
  Serial.print(inches);
  Serial.print("in, ");
  Serial.print(cm);
  Serial.print("cm");
  Serial.println();


  delay(250);
}
```

Procedure:

1. First thing first after setting up the hardware according to the above schematics open Arduino IDE.

2. Create three long variables for the conversion of ultrasonic sensors reading into inches and cm originally it is seconds or m.seconds.

3. In the setup () initialize the pinMode trig which is 4 to output and echo which is 2 to input.

```
long duration, cm, inches;
void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);

  pinMode(4, OUTPUT);
  pinMode(2, INPUT);
}
```

4. Now in loop () copy the code which sends the ultrasonic waves from one side and as soon as the waves hit an object or surface it reflects back to the receiver in this way the time is noted by the sensor

5. Now convert this time into distance using the following formula

```
duration = pulseIn(2,HIGH);

cm = (duration/2)/29.1;
inches = (duration/2) /74;
```

6. Now upload the code to Arduino and open the serial monitor. Result will be displayed in such a way.