Department of CSE

Lab-1 : Water Sensor with Arduino

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Introduction

Water is one of the most vital resources, and its efficient use is essential. This project aims to create a simple water level monitoring system using an Arduino and a water level sensor. The system detects the level of water and displays the current level through serial communication. It can be used in households, agriculture, or industries for effective water management.

Components Used

- Arduino Uno
- Water Level Sensor
- Jumper Wires
- USB Cable

Circuit Connection

Arduino Pin	Connected To	Description
D7	Sensor Power (VCC)	Powers water leve l sensor
A0	Sensor Output Signal	Reads sensor analog output
GND	Common Ground	Ground connection

Arduino Code

```
// Sensor pins
#define sensorPower 7
#define sensorPin A0

// Value for storing water level
int val = 0;

/* Change these values based on your calibration values */
int lowerThreshold = 200;
int upperThreshold = 400;

void setup() {
  Serial.begin(9600);
  pinMode(sensorPower, OUTPUT);
  digitalWrite(sensorPower, LOW);
}

void loop() {
  int level = readSensor();

  if (level == 0) {
    Serial.println("Water Level: Empty");
  } else if (level > 0 && level <= lowerThreshold) {
```

```
      Serial.println("Water Level: Low");
    } else if (level > lowerThreshold && level <= upperThreshold) {
      Serial.println("Water Level: Medium");
    } else if (level > upperThreshold) {
      Serial.println("Water Level: High");
    }

  delay(1000);
}

int readSensor() {
  digitalWrite(sensorPower, HIGH);
  delay(10);
  val = analogRead(sensorPin);
  digitalWrite(sensorPower, LOW);
  return val;
}
```
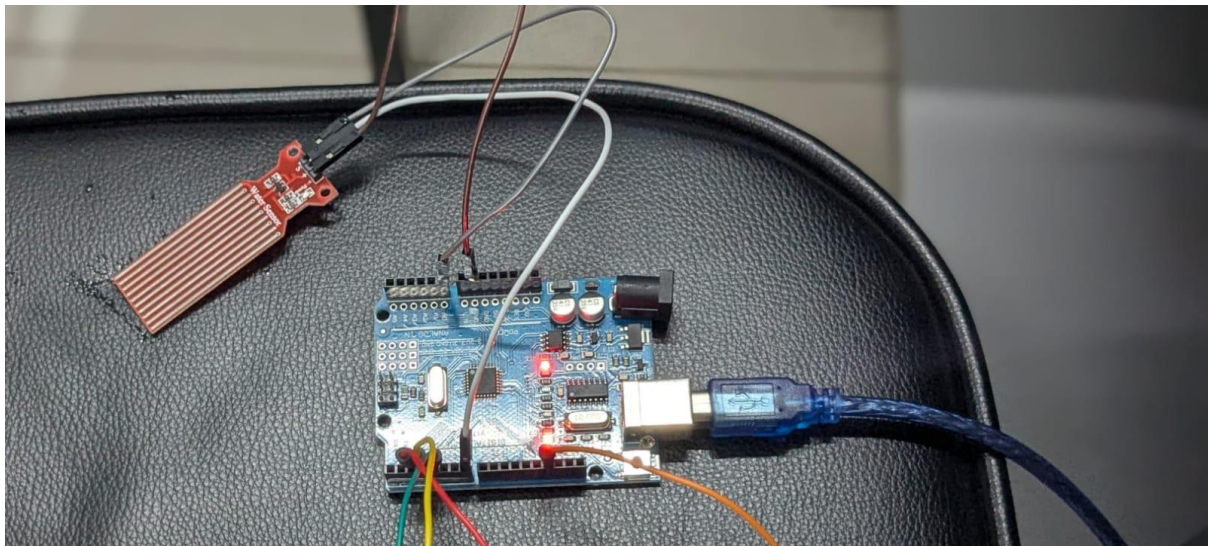
Water Level Sensor Value Range

Water Level	Sensor Value Range
Empty	0
Low	1 to 200
Medium	201 to 400
High	Above 400

Circuit Overview Through Images

Conclusion

This project provides an easy and effective way to keep track of water levels using basic electronics. By carefully managing when the sensor gets power, the system helps the sensor stay functional for longer. Overall, it's an affordable and useful solution that can be easily improved with features like notifications or remote monitoring down the line.

GitHub Repository: https://github.com/Zihad107/CSE406/tree/master/Lab-01