Arduino Automatic Water Conservation System Sketch.

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// Automated Water Conservation System
// Based on water level sensor + Arduino Uno
// Components: water pump, 2 LEDs, buzzer

const int sensorPin = A0;    // Water level sensor
const int pumpPin   = 7;     // Water pump control
const int led1Pin   = 6;     // LED1 (Tank low / pump ON)
const int led2Pin   = 5;     // LED2 (Tank full)
const int buzzerPin = 4;     // Buzzer (Tank full)

int sensorValue = 0;

void setup() {
  pinMode(pumpPin, OUTPUT);
  pinMode(led1Pin, OUTPUT);
  pinMode(led2Pin, OUTPUT);
  pinMode(buzzerPin, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  sensorValue = analogRead(sensorPin);
  Serial.println(sensorValue);   // For debugging in Serial Monitor
```

```
// Threshold values (adjust based on your testing)
int lowLevel  = 300;  // Below this = pump ON
int highLevel = 680;  // Above this = pump OFF, tank full


if (sensorValue < lowLevel) {
  // Tank low → pump ON
  digitalWrite(pumpPin, HIGH);
  digitalWrite(led1Pin, HIGH);   // Show pumping
  digitalWrite(led2Pin, LOW);
  digitalWrite(buzzerPin, LOW);
}
else if (sensorValue >= highLevel) {
  // Tank full → pump OFF + buzzer/LED alert
  digitalWrite(pumpPin, LOW);
  digitalWrite(led1Pin, LOW);
  digitalWrite(led2Pin, HIGH);
  digitalWrite(buzzerPin, HIGH);
}
else {
  // Middle level → pump OFF, no alert
  digitalWrite(pumpPin, LOW);
  digitalWrite(led1Pin, LOW);
  digitalWrite(led2Pin, LOW);
  digitalWrite(buzzerPin, LOW);
}
```

```
  delay(500);  // Small delay for stability
}
```