Phase 3: Submission

Tittle: Smart Public Restroom

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Compounents used :

* Aurdino
* Aurdino IDE Software
* Ultrasonic sensor
* DC Motor
* LCD
* Potentiometer
* Breadboard
* Led
* Resistor

Code:

#include <LiquidCrystal.h>

// Define the pins for Ultrasonic Sensor

const int trigPin = 9;

const int echoPin = 10;

// Define the pins for DC Motor

const int motorPin = 5;

// Initialize the LCD

LiquidCrystal lcd(12, 11, 6, 7, 8);

void setup() {

// Initialize the LCD

lcd.begin(16, 2);

// Set up Ultrasonic Sensor pins

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

// Set up DC Motor pin

pinMode(motorPin, OUTPUT);

}

void loop() {

// Clear the LCD

lcd.clear();

// Trigger the Ultrasonic Sensor

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

// Measure the distance

long duration = pulseIn(echoPin, HIGH);

int distance = duration / 58.2; // Convert the time into distance (cm)

// Display the distance on the LCD

lcd.setCursor(0, 0);

lcd.print("Distance: ");

lcd.print(distance);

lcd.print(" cm");

// Check if someone is near the toilet

if (distance < 10) {

lcd.setCursor(0, 1);

lcd.print("Flushing...");

flushToilet();

} else {

lcd.setCursor(0, 1);

lcd.print("Ready");

delay(1000); // Wait for a moment before rechecking

}

}

void flushToilet() {

// Activate the DC Motor to flush

digitalWrite(motorPin, HIGH);

delay(3000); // Flush for 3 seconds

digitalWrite(motorPin, LOW);

}