

Code for Real Time River Water Quality Monitoring and Control System

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```
#include <LiquidCrystal.h> // includes the LiquidCrystal Library

LiquidCrystal lcd(1, 2, 4, 5, 6, 7); // Creates an LCD object. Parameters: (rs, enable, d4, d5, d6, d7)

const int trigPin = 9;

const int echoPin = 10;

long duration;

int distanceCm, distanceInch;

int PowerPin = 3;

void setup()
{
    lcd.begin(16,2); // Initializes the interface to the LCD screen, and specifies the dimensions (width
and height) of the display

    pinMode(trigPin, OUTPUT);

    pinMode(echoPin, INPUT);

    pinMode(PowerPin, OUTPUT);
}

void loop()
{
    digitalWrite(trigPin, LOW);

    delayMicroseconds(2);

    digitalWrite(trigPin, HIGH);

    delayMicroseconds(10);

    digitalWrite(trigPin, LOW);
```

```

duration = pulseIn(echoPin, HIGH);
distanceCm= duration*0.034/2;

String tankValFull = "Full";
String tankValEmpty = "Empty";
String tankValLow = "Low";

if(distanceCm < 70)
{
    digitalWrite(PowerPin, HIGH);
}
else{
    digitalWrite(PowerPin, LOW);
}

lcd.setCursor(0,0); // Sets the location at which subsequent text written to the LCD will be
displayed
lcd.print("Distance: "); // Prints string "Distance" on the LCD
lcd.print(distanceCm); // Prints the distance value from the sensor
lcd.print(" cm");
delay(10);

lcd.setCursor(0,1);
lcd.print("River Level: ");
if(distanceCm < 100)
{
    lcd.print(tankValFull);
}

else if(distanceCm >= 100 && distanceCm < 200)

```

```
    {  
    lcd.print(tankValLow);  
    }  
    else if(distanceCm > 200)  
    {  
    lcd.print(tankValEmpty);  
    }  
    delay(10);  
}
```