**SMART WATER MANAGEMENT**

**INTRODUCTION**

Smart water management refers to the application of advanced technologies and data-driven solutions to efficiently monitor, control, and optimize the use of water resources. It encompasses a range of tools and strategies, including IoT sensors, data analytics, and automation, to improve the sustainability and resilience of water systems. By integrating these technologies, smart water management aims to reduce water wastage, enhance water quality, and ensure reliable access to clean water for both urban and rural areas, ultimately contributing to environmental conservation and improved quality of life.

**HARDWARE**

1.Water quality sensor

2.Flow Meter

3.Pump and valves

4.Central server or cloud platform

5.pressure sensor

6.Remote monitoring device

7.power supply

**PROGRAM**

#define PIN\_TRIG 26

#define PIN\_ECHO 25

#define LOWLED 18

#define MIDLED 19

#define HIGHLED 21

#define MOTOR 27

Unsigned int level = 0;

Void setup() {

pinMode(LOWLED, OUTPUT);

pinMode(MIDLED, OUTPUT);

pinMode(HIGHLED, OUTPUT);

pinMode(MOTOR, OUTPUT);

digitalWrite(LOWLED, HIGH);

digitalWrite(MIDLED, HIGH);

digitalWrite(HIGHLED, HIGH);

digitalWrite(MOTOR, LOW);

Serial.begin(115200);

pinMode(PIN\_TRIG, OUTPUT);

pinMode(PIN\_ECHO, INPUT);

}

Void loop() {

// Start a new measurement:

digitalWrite(PIN\_TRIG, HIGH);

delayMicroseconds(10);

digitalWrite(PIN\_TRIG, LOW);

// Read the result:

Int duration = pulseIn(PIN\_ECHO, HIGH);

Serial.print(“Distance in CM: “);

Serial.println(duration / 58);

Serial.print(“Distance in inches: “);

Serial.println(duration / 148);

Level = (duration / 10);

If(level < 100)

{

digitalWrite(LOWLED, LOW);

digitalWrite(MOTOR, HIGH);

digitalWrite(HIGHLED, HIGH);

digitalWrite(MIDLED, HIGH);

}

Else if ((level > 200 ) && (level < 400))

{

digitalWrite(LOWLED, HIGH);

digitalWrite(HIGHLED, HIGH);

digitalWrite(MIDLED, LOW);

}

Else if (level >= 400 )

{

digitalWrite(HIGHLED, LOW);

digitalWrite(MIDLED, HIGH);

digitalWrite(LOWLED, HIGH);

digitalWrite(MOTOR, LOW);

}

Delay(1000);

}

**LINK**

<https://wokwi.com/projects/380203288884062209>

**SIMULATION**

