Assignment 4

Develop a Smart water pump controller using ESP32.

The tasks to be covered are:

use an ultrasonic sensor for monitoring tank water level and send the values to the mobile app using Bluetooth communication

Integrate buttons in the mobile app for controlling the water pump

when the buttons are clicked send the data to ESP32 using Bluetooth communication

receive the data from the mobile app using ESP32 and control the pump accordingly.

PROGRAM

#include "BluetoothSerial.h"

BluetoothSerial SerialBT;

int trigpin=4;

int echopin=5;

void setup() {

pinMode(trigpin,OUTPUT);

pinMode(echopin,INPUT);

// connecting the bulb instead of pump.

pinMode(2,OUTPUT);

Serial.begin(115200);

delay(3000);

SerialBT.begin("ESP32test"); //Bluetooth device name

}

void loop(){

digitalWrite(trigpin,LOW);

digitalWrite(trigpin,HIGH);

delay(10);

digitalWrite(trigpin,LOW);

int duration=pulseIn(echopin,HIGH);

int distance=(duration\*0.034)/2;

SerialBT.write(distance);

delay(1000);

Serial.println(distance);

if (SerialBT.available()) {

char a = SerialBT.read();

if(a == '0'){

digitalWrite(2,LOW);

}

else if(a == '1'){

digitalWrite(2,HIGH);

}

delay(500);

}

}