

//Talking Thermometer - Gymnasio Vamou 2019 New Version

#include <dht.h>

#include <DHT.h>

#include <SPI.h>

#include <TMRpcm.h>

#include <SD.h>

#include <Wire.h>

#include <LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(0x27,20,4); // set the LCD address to 0x3F for a 16 chars and 2 line display

const int chipselect = 4;

#define SD_ChipSelectPin 4

#define DHT11_PIN 7

dht DHT;

TMRpcm tmrpcm;

int echoPin = 5; // Echo Pin

int trigPin = 6; // Trigger Pin

int maximumRange = 300; // Maximum range needed

int minimumRange = 0; // Minimum range needed

long duration, distance; // Duration used to calculate distance

void setup()

{

 lcd.init(); // initialize the lcd

 lcd.backlight();

 lcd.setCursor(0,0);

 lcd.print("Talking Thermometer");

 lcd.setCursor(0,1);

 lcd.print(" Gymnasio Vamou");

 tmrpcm.speakerPin = 9;

 pinMode(9,OUTPUT);

```

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

Serial.begin(9600);

Serial.println("Talking Thermometer - Gymnasio Vamou");

if(!SD.begin(SD_ChipSelectPin))
{
  Serial.println("SD fail");
  return;}
}

void loop() {

  digitalWrite(trigPin, LOW);

  delayMicroseconds(2);

  digitalWrite(trigPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH);

  distance = duration/58.2; //Υπολογισμός απόστασης (σε cm) βασιζόμενοι στην ταχύτητα του ήχου.

  delay(50); //Καθυστέρηση 50ms πριν την επόμενη ανάγνωση

  int chk = DHT.read11(DHT11_PIN);

  Serial.print(" Distance: ");

  Serial.print(distance);

  Serial.println(" cm ");

  lcd.setCursor(0,0);

  lcd.print("Talking Thermometer");

  lcd.setCursor(0,1);

  lcd.print(" Gymnasio Vamou");

  lcd.setCursor(0,2);

  lcd.print("Temperature: ");

  lcd.print(DHT.temperature);

```

```
lcd.print((char)223);
```

```
lcd.print("C");
```

```
lcd.setCursor(3,3);
```

```
lcd.print("Humidity: ");
```

```
lcd.print(DHT.humidity);
```

```
lcd.print(" %");
```

```
delay(600);
```

```
if (distance < 40) {
```

```
    tmrpcm.speakerPin = (HIGH);
```

```
    if ((DHT.temperature) == 15) {
```

```
        tmrpcm.setVolume(5);
```

```
        tmrpcm.play("15.wav");
```

```
        lcd.setCursor(0,1);
```

```
        lcd.print(" Hello It's Cool ");
```

```
    }
```

```
    if ((DHT.temperature) == 16) {
```

```
        tmrpcm.setVolume(5);
```

```
        tmrpcm.play("16.wav");
```

```
        lcd.setCursor(0,1);
```

```
        lcd.print(" Hello It's Cool ");
```

```
    }
```

```
    if ((DHT.temperature) == 17) {
```

```
        tmrpcm.setVolume(5);
```

```
        tmrpcm.play("17.wav");
```

```
        lcd.setCursor(0,1);
```

```
        lcd.print(" Hello It's Cool ");
```

```
    }
```

```
    if ((DHT.temperature) == 18) {
```

```
        tmrpcm.setVolume(5);
```

```
tmrpcm.play("18.wav");

lcd.setCursor(0,1);

lcd.print(" Hello It's Cool ");

}

if ((DHT.temperature) == 19) {

    tmrpcm.setVolume(5);

    tmrpcm.play("19.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 20) {

    tmrpcm.setVolume(5);

    tmrpcm.play("20.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 21) {

    tmrpcm.setVolume(5);

    tmrpcm.play("21.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 22) {

    tmrpcm.setVolume(5);

    tmrpcm.play("22.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 23) {

    tmrpcm.setVolume(5);
```

```
tmrpcm.play("23.wav");

lcd.setCursor(0,1);

lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 24) {

    tmrpcm.setVolume(5);

    tmrpcm.play("24.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Nice ");

}

if ((DHT.temperature) == 25) {

    tmrpcm.setVolume(5);

    tmrpcm.play("25.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Warm! ");

}

if ((DHT.temperature) == 26) {

    tmrpcm.setVolume(5);

    tmrpcm.play("26.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Warm! ");

}

if ((DHT.temperature) == 27) {

    tmrpcm.setVolume(5);

    tmrpcm.play("27.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Warm! ");

}

if ((DHT.temperature) == 28) {

    tmrpcm.setVolume(5);
```

```
tmrpcm.play("28.wav");

lcd.setCursor(0,1);

lcd.print(" Hello It's Warm! ");

}

if ((DHT.temperature) == 29) {

    tmrpcm.setVolume(5);

    tmrpcm.play("29.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello It's Warm! ");

}

if ((DHT.temperature) == 30) {

    tmrpcm.setVolume(5);

    tmrpcm.play("30.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 31) {

    tmrpcm.setVolume(5);

    tmrpcm.play("31.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 32) {

    tmrpcm.setVolume(5);

    tmrpcm.play("32.wav");

    lcd.setCursor(0,1);

    lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 33) {

    tmrpcm.setVolume(5);
```

```
tmrpcm.play("33.wav");

lcd.setCursor(0,1);

  lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 34) {

  tmrpcm.setVolume(5);

tmrpcm.play("34.wav");

lcd.setCursor(0,1);

  lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 35) {

  tmrpcm.setVolume(5);

tmrpcm.play("35.wav");

lcd.setCursor(0,1);

  lcd.print(" Hello Very Hot!  ");

}

if ((DHT.temperature) == 36) {

  tmrpcm.setVolume(5);

tmrpcm.play("36.wav");

lcd.setCursor(0,1);

  lcd.print(" Hello Very Hot!  ");

}

delay(3000);

tmrpcm.stopPlayback();

}

if (distance > 40) {

tmrpcm.speakerPin = (LOW);}

}
```