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//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);
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 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);
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 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);
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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);
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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);
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  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);
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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.setVolume(1);
//tmrpcm.play("37.wav");
tmrpcm.speakerPin = (LOW);}
}
```