#include <dht.h>

#include <LiquidCrystal\_I2C.h>

#include <Wire.h>

LiquidCrystal\_I2C lcd\_1(0x3F, 16, 2);

dht DHT;

int counter = 0;

int red\_light\_pin= 9;

int blue\_light\_pin = 10;

int green\_light\_pin = 11;

char key;

unsigned int readResults;

const String password = "1234";

String input\_password;

int RECV\_PIN = 12; // the pin where you connect the output pin of IR sensor

//decode\_results results;

int temp\_C = 0;

int tracking = 0;

int enterPin = 0;

int tilt = 0;

int force = 0;

int level\_1 = 0;

int level\_2 = 0;

int level\_3 = 0;

const int tiltpin = 8;

const int forcepin = A4;

const int temppin = A5;

const int buzzer = 3;

void setup()

{

lcd\_1.init();

lcd\_1.backlight();

// lcd\_1.begin(16, 2);

lcd\_1.setCursor(0, 0);

lcd\_1.print(" BIKE TRACKING!");

lcd\_1.setCursor(0, 1);

lcd\_1.print("HAVE A SAFE RIDE");

Serial.begin(9600);

pinMode(tiltpin, INPUT);

pinMode(forcepin, INPUT);

pinMode(temppin, INPUT);

pinMode(buzzer, OUTPUT);

pinMode(red\_light\_pin, OUTPUT);

pinMode(green\_light\_pin, OUTPUT);

pinMode(blue\_light\_pin, OUTPUT);

}

void loop() {

if(counter == 0)

{

delay(1000);

clearLCDLine(0); clearLCDLine(1);

counter++;

lcd\_1.setCursor(0, 1);

lcd\_1.print("Press \* to Track");

}

if(!tracking)

{

DHT.read11(temppin);

temp\_C = int(DHT.temperature);

lcd\_1.setCursor(1, 0); lcd\_1.print("Temp : ");

lcd\_1.setCursor(8, 0); lcd\_1.print(temp\_C);

lcd\_1.setCursor(11, 0); lcd\_1.print(" C");

delay(250);

if((temp\_C > 99) || (temp\_C < 0))

clearLCDLine(0);

}

if(tracking){

if(level\_3 != 1){

Serial.print("\nTracking Enabled - ");

tilt = getTilt(tiltpin);

force = getForce(forcepin);

Serial.print("Tilt: "); Serial.print(tilt);

Serial.print(" Force: "); Serial.println(force);

}

if(tilt == 1 && level\_3 != 1) {

level\_1 = 1;

Serial.println(" \*\*\*Tilt Sensor Security Breached\*\*\*");

}

if(force >= 400 && level\_3 != 1) {

level\_2 = 1;

Serial.println(" \*\*\*Force Sensor Security Breached\*\*\*");

}

if(level\_1 == 1 && level\_2 == 1)

{

level\_3 = 1;

lcd\_1.setCursor(0,0);

lcd\_1.print(" BICYCLE STOLEN ");

Serial.println("!!!---Bicycle Stolen---!!!");

// digitalWrite(buzzer,HIGH); delay(500);

// digitalWrite(buzzer,LOW); delay(500);

tone(buzzer, 220, 100); delay(500);

tone(buzzer, 180, 100); delay(500);

tilt = 0; force = 0; //level\_1= 0;level\_2= 0;

RGB\_color(255, 0, 0); delay(100); // Red

RGB\_color(0, 0, 0); delay(100);// off

RGB\_color(0, 0, 255); delay(100); // Blue

RGB\_color(0, 0, 0); delay(100);// off

}

}

if(Serial.available() > 0)

{

readResults = Serial.read();

key = readResults;

Serial.println(key);

if (key =='\*') {

enterPin=1;

clearLCDLine(1);

lcd\_1.setCursor(0,1);

lcd\_1.print("Enter Pin : ");

}

else

{

if(enterPin){

if(key == '#')

{ input\_password = ' ';

clearLCDLine(1);

lcd\_1.setCursor(0,1);

lcd\_1.print("Enter Pin : ");

}

else if (key == '-')

{

if(password == input\_password)

{

Serial.println("Password matched");

RGB\_color(0, 255, 0); delay(100); // Green

RGB\_color(0, 0, 0); delay(100);// off

tilt = 0; force = 0; level\_1 = 0; level\_2 = 0;

tracking = ~tracking;

clearLCDLine(0); clearLCDLine(1);

lcd\_1.setCursor(0,0);

lcd\_1.print("PIN MATCHED");

delay(1000);

if (tracking){

enterPin = 0;

lcd\_1.setCursor(0,0);

lcd\_1.print("TRACKING ENABLED");

lcd\_1.setCursor(0,1);

lcd\_1.print("Press \* to Stop");

//delay(2000);

}

else{

enterPin = 0;

lcd\_1.setCursor(0,0);

lcd\_1.print("TRACKING STOPPED");

delay(1000);

clearLCDLine(0);

lcd\_1.setCursor(0,1);

lcd\_1.print("Press \* to Track");

level\_3 = 0;

}

}

else if(password != input\_password)

{

Serial.println("Wrong Password");

clearLCDLine(0); clearLCDLine(1);

lcd\_1.setCursor(0,0);

lcd\_1.print("WRONG PIN");

delay(500);

clearLCDLine(0);

lcd\_1.setCursor(0,1);

lcd\_1.print("Enter Pin : ");

RGB\_color(255, 0, 0); delay(100);// Red

RGB\_color(0, 0, 0); delay(100);// off

}

input\_password = "";

}

else if (key != ' ')

{

input\_password += key;

lcd\_1.setCursor(0,1);

String text = "Enter Pin : " + input\_password;

lcd\_1.print(text);

RGB\_color(0, 0, 255); delay(50); // Blue

RGB\_color(0, 0, 0); delay(50);// off

}

}

Serial.print("Password: ");

Serial.println(input\_password); //prints the value a a button press

}

delay(100);

}

}

void clearLCDLine(int line)

{

lcd\_1.setCursor(0,line);

for(int n = 0; n < 20; n++) // 20 indicates symbols in line. For 2x16 LCD write - 16

{

lcd\_1.print(" ");

}

}

int getTilt(int tiltpin){ return (digitalRead(tiltpin));}

int getForce(int forcepin){ return analogRead(forcepin);}

void RGB\_color(int red\_light\_value, int green\_light\_value, int blue\_light\_value)

{

analogWrite(red\_light\_pin, red\_light\_value);

analogWrite(green\_light\_pin, green\_light\_value);

analogWrite(blue\_light\_pin, blue\_light\_value);

}