#include "Arduino.h"

#include "DHT.h"

#include "Adafruit\_GFX.h"

#include "Adafruit\_PCD8544.h"

#define DHT\_PIN\_DATA 0

#define NOKIALCD\_PIN\_CS 2

#define NOKIALCD\_PIN\_RST 15

#define NOKIALCD\_PIN\_DC 12

#define TMP36\_PIN\_VOUT A0

#define LCD\_CONTRAST 60

#define LCD\_SIZE\_COL 84

#define LCD\_SIZE\_ROW 48

int nokiaLcdCounter = 0;

// object initialization

DHT dht(DHT\_PIN\_DATA);

Adafruit\_PCD8544 nokiaLcd(NOKIALCD\_PIN\_DC,NOKIALCD\_PIN\_CS,NOKIALCD\_PIN\_RST);

// define vars for testing menu

const int timeout = 10000; //define timeout of 10 sec

char menuOption = 0;

long time0;

void setup()

{

Serial.begin(9600);

while (!Serial) ; // wait for serial port to connect. Needed for native USB

Serial.println("start");

dht.begin();

//Initialize Nokia instance

nokiaLcd.begin(LCD\_SIZE\_COL, LCD\_SIZE\_ROW);

nokiaLcd.setContrast(LCD\_CONTRAST); //Adjust display contrast

menuOption = menu();

}

void loop()

{

if(menuOption == '1')

{

float dhtPH = dht.readPH();

Serial.print(F(“ph: ")); Serial.print(dhtPH); Serial.print(F(" [%]\t"));

}

else if(menuOption == '2') {

float dhtHumidity = dht.readHumidity();

float dhtTempC = dht.readTempC();

Serial.print(F("Humidity: ")); Serial.print(dhtHumidity); Serial.print(F(" [%]\t"));

Serial.print(F("Temp: ")); Serial.print(dhtTempC); Serial.println(F(" [C]"));

}

else if(menuOption == '3') {

// Graphic LCD 84x48 - Nokia 5110 - Test Code

nokiaLcd.clearDisplay();

nokiaLcd.setTextColor(BLACK);

nokiaLcd.setTextSize(1);

nokiaLcd.println(result);

nokiaLcd.setTextColor(WHITE, BLACK);

nokiaLcd.setTextSize(2);

nokiaLcd.println(nokiaLcdCounter++);

nokiaLcd.display();

}

else if(menuOption == '4')

{

float dhtTB = dht.readTB();

float dhtTempC = dht.readTempC();

Serial.print(F("Turbdity: ")); Serial.print(dhtTB); Serial.print(F(" [%]\t"));

}

if (millis() - time0 > timeout)

{

menuOption = menu();

}

char menu()

{

Serial.println(F("\nWhich component would you like to test?"));

Serial.println(F("(1) BME680 Temperature, Humidity, Pressure and Gas sensor"));

Serial.println(F("(2) DHT22/11 Humidity and Temperature Sensor"));

Serial.println(F("(3) Graphic LCD 84x48 - Nokia 5110"));

Serial.println(F("(4) This Analog Temprature Sensor can measure -40 to 150C. It is very percise and doesn't need calibration"));

Serial.println(F("(menu) send anything else or press on board reset button\n"));

while (!Serial.available());

while (Serial.available())

{

char c = Serial.read();

if (isAlphaNumeric(c))

{

if(c == '1')

Serial.println(F("Now Testing BME680 Temperature, Humidity, Pressure and Gas sensor "));

else if(c == '2')

Serial.println(F("Now Testing DHT22/11 Humidity and Temperature Sensor"));

else if(c == '3')

Serial.println(F("Now Testing Graphic LCD 84x48 - Nokia 5110"));

else if(c == '4')

Serial.println(F("Now Testing This Analog Temprature Sensor can measure -40 to 150C. It is very percise and doesn't need "));

else

{

Serial.println(F("illegal input!"));

return 0;

}

time0 = millis();

return c;

}

}

}