//Gymnasio Vamou, Deaf Blind Communication

//Panellinios Diagonismos Ekpaideytikis Robotikis 2019

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

LiquidCrystal\_I2C lcd(0x27,20 ,4); // set the LCD address to 0x27, set 16 chars and 2 line display

#define CUSTOM\_SETTINGS

#define INCLUDE\_VOICE\_RECOGNIZER\_SHIELD

#define INCLUDE\_TEXT\_TO\_SPEECH\_SHIELD

#define INCLUDE\_KEYBOARD\_SHIELD

#define INCLUDE\_SMS\_SHIELD

#define INCLUDE\_TERMINAL\_SHIELD

#define INCLUDE\_VIBRATION\_SHIELD

#include <OneSheeld.h>

String msg;

int sent = 0;

int i = 0;

String phoneNum = "+3069xxxxxxxx"; //write phone number here

int patternOne[6] = {1000, 2000, 1000, 2000, 1000, 2000};

int patternOneSize = 6;

void setup()

{

lcd.init(); // initialize the lcd

// Print a message to the LCD.

lcd.backlight();

lcd.setCursor(2,0);

lcd.print(" Gymnasio Vamou ");

lcd.setCursor(0,1);

lcd.print("Deaf - Blind Project");

OneSheeld.begin();

VoiceRecognition.start();

}

void loop() {

//Blind to Deaf

if (VoiceRecognition.isNewCommandReceived()) {

String msg1 = VoiceRecognition.getLastCommand();

//far contact if user said "sms" first

if (msg1.substring(0, 3) == "sms") {

String msg1f = msg1.substring(3);

SMS.send (phoneNum, msg1f);

TextToSpeech.say("sms sent");

delay(4000);

}

//close contact

else {

if (msg1.length() > 20) {

lcd.clear();

lcd.setCursor(0, 0);

for (int i = 0; i <= 20; i++) {

lcd.print(msg1[i]);

}

lcd.setCursor(0, 1);

for (int j = 20 ; j <= msg1.length() - 1 ; j++) {

lcd.print(msg1[j]);

}

}

else {

lcd.clear();

lcd.print(msg1);

lcd.setCursor(2,2);

lcd.print(" Gymnasio Vamou ");

lcd.setCursor(0,3);

lcd.print("Deaf - Blind Project");

}

}

}

//sms recieved

SMS.setOnSmsReceive(GotSms);

//Deaf to blind

AsciiKeyboard.setOnButtonChange(&MsgBuild);

}

void GotSms(char \* phoneNumber , char \* messageBody)

{

//for deaf

Vibration.start(patternOneSize, patternOne);

delay(6000);

Vibration.stop();

lcd.clear();

lcd.print("you got an sms ");

lcd.setCursor(0, 0);

lcd.print(String(phoneNumber));

delay(4000);

String msg2 = String(messageBody);

if (msg2.length() > 20) {

lcd.clear();

lcd.setCursor(0, 0);

for (int i = 0; i <= 20; i++) {

lcd.print(msg2[i]);

}

lcd.setCursor(0, 1);

for (int j = 20 ; j <= msg2.length() - 1 ; j++) {

lcd.print(msg2[j]);

}

}

else {

lcd.clear();

lcd.print(msg2);

lcd.setCursor(2,2);

lcd.print(" Gymnasio Vamou ");

lcd.setCursor(0,3);

lcd.print("Deaf - Blind Project");

}

//for blind

TextToSpeech.say("you got an sms from" + String(phoneNumber));

delay(7000);

TextToSpeech.say(messageBody);

delay(300 \* String(messageBody).length());

}

void MsgBuild (char pC)

{

i++;

if (sent < 2) {

if (pC == 'S') {

sent += 1;

msg += pC;

}

else {

sent = 0;

msg += pC;

}

}

else if (sent = 3) {

i = i - 3;

msg.remove(i);

msg.toLowerCase();

if (msg.substring(0, 3) == "sms") {

String msgf = msg.substring(3);

SMS.send (phoneNum, msgf);

lcd.clear();

lcd.print("sms sent");

TextToSpeech.say("sms sent");

delay(3000);

sent = 0;

msg = "";

i = 0;

}

//close contact

else {

delay(2000);

TextToSpeech.say(msg);

if (msg.length() > 20) {

lcd.clear();

lcd.setCursor(0, 0);

for (int i = 0; i <= 20; i++) {

lcd.print(msg[i]);

}

lcd.setCursor(0, 1);

for (int j = 20 ; j <= msg.length() - 1 ; j++) {

lcd.print(msg[j]);

}

}

else {

lcd.clear();

lcd.print(msg);

}

delay(300 \* msg.length());

sent = 0;

msg = "";

i = 0;

}

}

}