// \*\*\**PROGRAM STEP MOTOR*\*\*\*

#include <Keypad.h> // *Arduino library*

#include <Wire.h> // *Arduino library*

#include <LiquidCrystal\_I2C.h>

#include <math.h>

LiquidCrystal\_I2C lcd(0x27, 2, 1, 0, 4, 5, 6, 7, 3, POSITIVE); // *set the LCD I2C address*

#define LED1 8 // *digital pin 8*

#define LED2 9 // *digital pin 9*

#define LED3 10 // *digital pin 10*

#define LED4 11 // *digital pin 11*

#define pin2 12 // *digital pin 12 to activate the camera focus*

#define pin3 13 // *digital pin 13 to activate the shoot*

int ritardo = 60;

long first = 0; // *STEPS of the four coils*

long second = 0;

char customKey;

int shoot1 = 0; // *number shoots max*

int shoot2 = 0; // *shoots performed*

int I;

const byte ROWS = 4;

const byte COLS = 4;

char keys[ROWS][COLS] = {

{'1','2','3','+'},

{'4','5','6','-'},

{'7','8','9','\*'},

{'C','0','=','/'}

};

byte rowPins[ROWS] = {3,2,1,0}; // *pin set up numerical keyboard rows*

byte colPins[COLS] = {4,5,6,7}; // *pin set up numerical keyboard columns*

//initializza Keypad

Keypad customKeypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS);

void setup() {

lcd.begin(16,2);

lcd.clear ();

pinMode(pin2, OUTPUT); // *focus*

pinMode(pin3, OUTPUT); // *shoot*

pinMode(LED1, OUTPUT); // *declare in or out functionality of LED1 variable (out in this case)*

pinMode(LED2, OUTPUT); // *declare in or out functionality of LED2 variable (out in this case)*

pinMode(LED3, OUTPUT); // *declare in or out functionality of LED3 variable (out in this case)*

pinMode(LED4, OUTPUT); // *declare in or out functionality of LED4 variable (out in this case)*

// pinMode(13, OUTPUT); // *beep signaling the end of the session*

}

void loop() {

lcd.clear ();

digitalWrite(LED1, HIGH); // *set in sleep mode LED1 (0 signal)*

digitalWrite(LED2, HIGH); // *set in sleep mode LED2 (0 signal)*

digitalWrite(LED3, HIGH); // *set in sleep mode LED3 (0 signal)*

digitalWrite(LED4, HIGH); // *set in sleep mode LED4 (0 signal)*

digitalWrite(pin2, HIGH); //

digitalWrite(pin3, HIGH); //

// \*\*\**INPUT START PARAMETERS*\*\*\*

customKey = customKeypad.getKey();

switch(customKey)

{

case '0' ... '9': // \*\*\*\* *input t1*

first = first \* 10 + (customKey - '0');

lcd.setCursor(0,0);

lcd.print("STEPS=");

lcd.setCursor(6,0);

lcd.print(first); // \*\*\* *steps 4 coils*

break;

case '+': // \*\*\*\* *input shoots*

second = SecondNumber();

shoot1 = second;

lcd.setCursor(0,1);

lcd.print("SHOOTS=");

lcd.setCursor(7,1);

lcd.print(shoot1);

break;

case 'C': // *reset data*

lcd.clear();

first = 0; second = 0; shoot1=0; shoot2=0 ;// *reset values back to zero for next*

*break;*

}

lcd.setCursor(0,0);

lcd.print("STEPS:");

lcd.setCursor(6,0);

lcd.print(first);

lcd.setCursor(0,1);

lcd.print("STEPS=");

lcd.setCursor(7,1);

lcd.print(shoot1);

if (second == 0)

{

goto poi;

}

lcd.clear (); // *data acquired start rotation*

lcd.setCursor(0,1);

lcd.print ("START");

delay();

// \*\*\* *START SEQUENCE REPEATED MOVEMENTS* \*\*\*

lcd.clear();

lcd.setCursor(0,0);

lcd.print("shoots:");

lcd.setCursor(7,0);

lcd.print(shoot2);

lcd.setCursor(10,0);

lcd.print("su:");

lcd.setCursor(13,0);

lcd.print(shoot1);

for (I=0;I<first;I=I+1) {

digitalWrite(LED1, LOW); // *step 1 Set in signaling mode LED1 (1 signal motor step on)*

delay();

digitalWrite(LED1,HIGH); // *step 1* *Set in sleep mode LED1 (0 signal motor step off)*

digitalWrite(LED2, LOW); // *step 2* *Set in signaling mode LED2 (1 signal motor step on)*

delay();

digitalWrite(LED2,HIGH); // *step 2* *Set in sleep mode LED2 (0 signal motor step off)*

digitalWrite(LED3, LOW); // *step 3 Set in signaling mode LED3 (1 signal motor step on)*

delay();

digitalWrite(LED3,HIGH); // *step 3 Set in sleep mode LED3 (0 signal motor step off)*

digitalWrite(LED4, LOW); // *step 4 Set in signaling mode LED4 (1 signal motor step on)*

delay();

digitalWrite(LED4,HIGH); // *step 4 Set in sleep mode LED4 (0 signal motor step off)*

lcd.setCursor(0,1);

lcd.print("Steps: ");

lcd.setCursor(6,1);

lcd.print(I+1);

lcd.setCursor(10,1);

lcd.print("su:");

lcd.setCursor(13,1);

lcd.print(first);

delay();

} // *end sequence single movement shoots*

lcd.clear();

delay (1000);

digitalWrite (pin2, LOW);

lcd.setCursor(0,1);

lcd.print ("Focus ");

delay (2000);

digitalWrite (pin3, LOW);

lcd.setCursor(0,1);

lcd.print ("Shoot ");

delay (1000);

digitalWrite (pin3, HIGH);

shoot2= shoot2 + 1;

lcd.setCursor(13,1);

lcd.print (shoot2);

digitalWrite (pin2,HIGH);

delay (1000);

lcd.setCursor(13,1);

lcd.print (shoot2);

if (shoot2 > shoot1){

first=0 ; second=0 ; shoot1 =0 ; shoot2=0 ; // *reset parameters*

lcd.clear ();

goto ;

}

}

// \*\*\* *ROUTINE INPUT Shoots*\*\*\*

long SecondNumber()

{

while( 1 )

{

customKey = customKeypad.getKey();

if(customKey >= '0' && customKey <= '9')

{

second = second \* 10 + (customKey - '0');

lcd.setCursor(7,1);

lcd.print(second);

}

if(customKey == '=') break; //\*\*\* start program \*\*\*;

}

return second;

}