MATRIX LED 8X8

#include <FrequencyTimer2.h>

#define A { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0} \

}

#define B { \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0} \

}

#define C { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define D { \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0} \

}

#define E { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define F { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0} \

}

#define G { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define H { \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0} \

}

#define I { \

    {1, 1, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 1, 0, 0, 0} \

}

#define J { \

    {1, 1, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0} \

}

#define K { \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 1, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0} \

}

#define L { \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define M { \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 1, 0, 1, 1, 0, 0, 0}, \

    {1, 1, 0, 1, 1, 0, 0, 0}, \

    {1, 0, 1, 0, 1, 0, 0, 0}, \

    {1, 0, 1, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0} \

}

#define N { \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0} \

}

#define O { \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 0, 0, 0, 0} \

}

#define P { \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0} \

}

#define Q { \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 1, 0, 0, 0} \

}

#define R { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 1, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0} \

}

#define S { \

    {0, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0} \

}

#define T { \

    {1, 1, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0} \

}

#define U { \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 0, 0, 0, 0} \

}

#define V { \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0} \

}

#define X { \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 1, 0, 1, 1, 0, 0, 0}, \

    {0, 1, 1, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0} \

}

#define Y { \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {1, 0, 0, 0, 1, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {0, 1, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0} \

}

#define Z { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 1, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define SPACE { \

    {0, 0, 0, 0, 0, 0, 0, 0},  \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 0, 0, 0, 0, 0} \

}

#define CORAZON { \

    {0, 1, 0, 0, 0, 1, 0, 0}, \

    {1, 1, 1, 0, 1, 1, 1, 0}, \

    {1, 1, 1, 1, 1, 1, 1, 0}, \

    {0, 1, 1, 1, 1, 1, 0, 0}, \

    {0, 1, 1, 1, 1, 1, 0, 0}, \

    {0, 0, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0} \

}

#define SIGNO { \

    {0, 0, 1, 1, 1, 0, 0, 0}, \

    {1, 0, 1, 1, 1, 0, 1, 0}, \

    {0, 1, 0, 1, 0, 1, 0, 0}, \

    {0, 0, 1, 1, 1, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 1, 1, 0, 0, 0}, \

    {0, 1, 0, 0, 0, 1, 0, 0}, \

    {0, 1, 0, 0, 0, 1, 0, 0} \

}

#define DOS{ \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 1, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 0, 0, 0, 0} \

}

#define UNO{ \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 1, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 1, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 1, 1, 0, 0, 0} \

}

#define CINCO { \

    {1, 1, 1, 1, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 0, 0, 0, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {0, 0, 0, 1, 0, 0, 0, 0}, \

    {1, 1, 1, 0, 0, 0, 0, 0} \

}

byte col = 0;

byte leds[8][8];

// pin[xx] de la pamtrix conectados a la placa arduino (-1 es para no usar la posición 0 y empezar en la 1)

int pins[17]= {-1, 5, 4, 3, 2, 14, 15, 16, 17, 13, 12, 11, 10, 9, 8, 7, 6};

// col[xx] de leds = pin yy de la matriz

int cols[8] = {pins[13], pins[3], pins[4], pins[10], pins[06], pins[11], pins[15], pins[16]};

// row[xx] de leds = pin yy de la matriz

int rows[8] = {pins[9], pins[14], pins[8], pins[12], pins[1], pins[7], pins[2], pins[5]};

const int numPatterns =9;//nuero de caracteres

/\*

byte patterns[numPatterns][8][8] = {

  A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,X,Y,Z,CORAZON,CORAZON,CORAZON

};

\*/

byte patterns[numPatterns][8][8] = {//coloque texto aquí

 CORAZON,SPACE,Y,O,M,A,R

};

/\*byte patterns[numPatterns][8][8] = {

 C,I,E,N,C,I,A,SPACE,Y,SPACE,T,E,C,N,O,L,O,G,I,A,SPACE,DOS,O,UNO,CINCO,SPACE

};\*/

int pattern = 0;

void setup() {

  // Configuramos los pinso como salida

  for (int i = 1; i <= 16; i++) {

    pinMode(pins[i], OUTPUT);

  }

  // inicializamos filas y columnas

  for (int i = 1; i <= 8; i++) {

    digitalWrite(cols[i - 1], LOW);

  }

  for (int i = 1; i <= 8; i++) {

    digitalWrite(rows[i - 1], LOW);

  }

  clearLeds();

  // Apagamos la conmutación del pin 11

  FrequencyTimer2::disable();

  // ratio de refresco en microsegundos

  FrequencyTimer2::setPeriod(2000);

  // Función de desbordamiento, se llama cada ciclo.

  FrequencyTimer2::setOnOverflow(display);

  setPattern(pattern);

}

void loop() {

    pattern = ++pattern % numPatterns;

    slidePattern(pattern, 100);

}

void clearLeds() {

  // Limpia el array

  for (int i = 0; i < 8; i++) {

    for (int j = 0; j < 8; j++) {

      leds[i][j] = 0;

    }

  }

}

void setPattern(int pattern) {

  for (int i = 0; i < 8; i++) {

    for (int j = 0; j < 8; j++) {

      leds[i][j] = patterns[pattern][i][j];

    }

  }

}

void slidePattern(int pattern, int del) {

  for (int l = 0; l < 8; l++) {

    for (int i = 0; i < 7; i++) {

      for (int j = 0; j < 8; j++) {

        leds[j][i] = leds[j][i+1];

      }

    }

    for (int j = 0; j < 8; j++) {

      leds[j][7] = patterns[pattern][j][0 + l];

    }

    delay(del);

  }

}

// Interrupt routine

void display() {

  digitalWrite(cols[col], LOW);  // Apagamos la columna previa

  col++;

  if (col == 8) {

    col = 0;

  }

  for (int row = 0; row < 8; row++) {

    if (leds[col][7 - row] == 1) {

      digitalWrite(rows[row], LOW);  // Apagamos este led

    }

    else {

      digitalWrite(rows[row], HIGH); // Apagamos este led

    }

  }

  digitalWrite(cols[col], HIGH); // Encendemos toda la columna

}

Video: <https://www.youtube.com/watch?v=eMTjrQj3LNs>

