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//*****//
// Name      : shiftOutCode, to drive LED bar           //
//           with STP08CL596                           //
// Author    : mike carter                             //
// Date      : NOV 11, 2015                             //
// Version   : 1.0                                       //
// Notes     : Code for using led bar with built in Shift Register //
//           : to count turn on LED's in a pattern      //
//           6 chips in the bar. 5 with 8 LED's each and one with 4 LED's //
//*****//

// Here is how we will wire up the led bar to the arduino
// Attach OE pin (output enable pin) to ground
// attach power and ground
// LE will attach to pin 4
// CLK will attach to pin 3
// SDI will attach to pin 2

//These are the pins that will talk to the shift register through SPI
//Pin connected to /LE of led bar
int latchPin = 4;
//Pin connected to CLK of led bar
int clockPin = 3;
////Pin connected to SDI of led bar
int dataPin = 2;

void setup() {
  // put your setup code here, to run once:
  //Set SPI pins to output
  pinMode(dataPin, OUTPUT);
  pinMode(clockPin, OUTPUT);
  pinMode(latchPin,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
  // count from 0 to 255 and display the number
  // on the LEDs
  for (int numberToDisplay = 0; numberToDisplay < 256; numberToDisplay++) {
    // take the latchPin low so
    // the LEDs don't change while you're sending in bits:
    digitalWrite(latchPin, LOW);
    //send the last chip first which has 4 LEDS. 15 will turn them all on
    shiftOut(dataPin, clockPin,MSBFIRST, 15);
    // send the second to last chip and turn on first and last LED
    shiftOut(dataPin, clockPin, MSBFIRST, 129);
    // send the third to last chip and turn on first and last LED
    shiftOut(dataPin, clockPin, MSBFIRST, 129);
    // send the fourth to last chip and turn on first and last LED
    shiftOut(dataPin, clockPin, MSBFIRST, 129);
    //send to the second chip
    shiftOut(dataPin, clockPin, MSBFIRST, 129);
    // shift out the bits:
    shiftOut(dataPin, clockPin, MSBFIRST, numberToDisplay);

    //take the latch pin high so the LEDs will light up:
    digitalWrite(latchPin, HIGH);
    // pause before next value:
    delay(100);
  }
}

```