Bahan Ajar

Modul
PEMROGRAMAN

Kode Matakuliah: SKO20411

C For Arduino

Penyusun:
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PROGRAM STUDI SISTEM KOMPUTER

FAKULTAS ILMU KOMPUTER

INSTITUT INFORMATIKA DAN BISNIS DARMAJAYA

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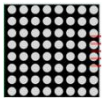
DAFTAR ISI

JOBSHEET 14
Matrix (8x8)

KOMPONEN

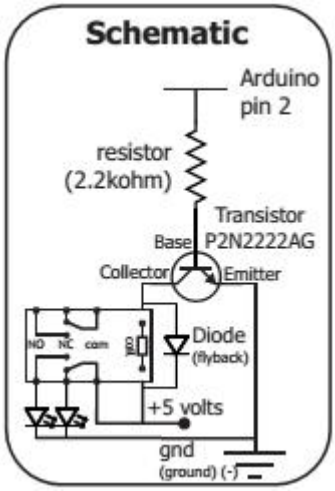
Breadboar

Kabel Jumper



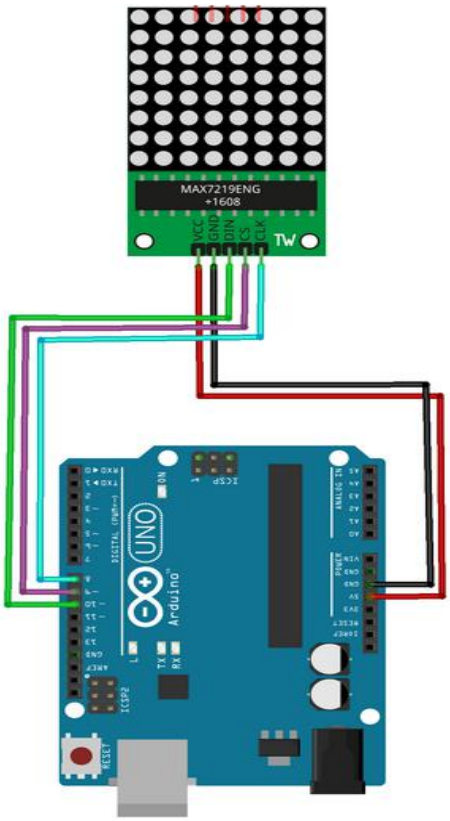
LED Matrix

SKEMA



PERAKITAN

Hubungkan LED Matrix Ke Arduino pada pin papan breadboard dan pin ground seperti pada gambar.



KODE PROGRAM

```
#include <LedControl.h>

int DIN = 10;
int CS =  9;
int CLK = 8;

//Main
byte Design1[8]= {0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,};
byte Design2[8]= {0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x01,};
byte Design3[8]= {0x00,0x00,0x00,0x00,0x00,0x00,0x01,0x03,};
byte Design4[8]= {0x00,0x00,0x00,0x00,0x00,0x01,0x03,0x07,};
byte Design5[8]= {0x00,0x00,0x00,0x00,0x01,0x03,0x07,0x0F,};
byte Design6[8]= {0x00,0x00,0x00,0x01,0x03,0x07,0x0F,0x1F,};
byte Design7[8]= {0x00,0x00,0x01,0x03,0x07,0x0F,0x1F,0x3F,};
byte Design8[8]= {0x00,0x01,0x03,0x07,0x0F,0x1F,0x3F,0x7F,};
byte Design9[8]= {0x01,0x03,0x07,0x0F,0x1F,0x3F,0x7F,0xFF,};
byte Design10[8]= {0x03,0x07,0x0F,0x1F,0x3F,0x7F,0xFF,0xFF,};
byte Design11[8]= {0x07,0x0F,0x1F,0x3F,0x7F,0xFF,0xFF,0xFF,};
byte Design12[8]= {0x0F,0x1F,0x3F,0x7F,0xFF,0xFF,0xFF,0xFF,};
byte Design13[8]= {0x1F,0x3F,0x7F,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte Design14[8]= {0x3F,0x7F,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte Design15[8]= {0x7F,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte Design16[8]= {0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte Design17[8]= {0xBF,0x7F,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte Design18[8]= {0xAF,0x5F,0xBF,0x7F,0xFF,0xFF,0xFF,0xFF,};
byte Design19[8]= {0xAB,0x57,0xAF,0x5F,0xBF,0x7F,0xFF,0xFF,};
byte Design20[8]= {0xAA,0x55,0xAB,0x57,0xAF,0x5F,0xBF,0x7F,};
byte Design21[8]= {0xAA,0x55,0xAA,0x55,0xAB,0x57,0xAF,0x5F,};
byte Design22[8]= {0xAA,0x55,0xAA,0x55,0xAA,0x55,0xAB,0x57,};
byte Design23[8]= {0xAA,0x55,0xAA,0x55,0xAA,0x55,0xAA,0x55,};


//Blink
byte BlinkOn1[8]= {0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,0xFF,};
byte BlinkOff1[8]= {0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,};
byte BlinkOn2[8]= {0xAA,0x55,0xAA,0x55,0xAA,0x55,0xAA,0x55,};
byte BlinkOff2[8]= {0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00,};



LedControl lc=LedControl(DIN,CLK,CS,0);

void setup(){
 lc.shutdown(0,false);       //The MAX72XX is in power-saving mode
on startup
 lc.setIntensity(0,15);      // Set the brightness to maximum
value
 lc.clearDisplay(0);         // and clear the display
}

void loop(){

    printByte(Design1);

    delay(100);
```

```
printByte(Design2);
    delay(100);
printByte(Design3);
    delay(100);
printByte(Design4);
    delay(100);
printByte(Design5);
    delay(100);
printByte(Design6);
    delay(100);
printByte(Design7);
    delay(100);
printByte(Design8);
    delay(100);
printByte(Design9);
    delay(100);
printByte(Design10);
    delay(100);
printByte(Design11);
    delay(100);
printByte(Design12);
    delay(100);
printByte(Design13);
    delay(100);
printByte(Design14);
    delay(100);
printByte(Design15);
    delay(100);
printByte(Design16);
```

```
    delay(100);
//Blink1
printByte(BlinkOn1);
delay(750);
printByte(BlinkOff1);
delay(750);
printByte(BlinkOn1);
delay(750);
printByte(BlinkOff1);
delay(750);
printByte(BlinkOn1);
delay(750);
//Design2
printByte(Design17);
delay(100);
printByte(Design18);
delay(100);
printByte(Design19);
delay(100);
printByte(Design20);
delay(100);
printByte(Design21);
delay(100);
printByte(Design22);
delay(100);
printByte(Design23);
delay(100);
//Blink2
printByte(BlinkOn2);
delay(750);
```

```
printByte(BlinkOff2);

delay(750);

printByte(BlinkOn2);

delay(750);

printByte(BlinkOff2);

delay(750);

}

void printByte(byte character [])
{
  int i = 0;
  for(i=0;i<8;i++)
  {
    lc.setRow(0,i,character[i]);
  }
}
```

LATIHAN

Lakukan memprogram nyala LED matrix menggunakan fungsi ARRAY dalam bahasa C for Arduino.

LAPORAN HASIL PERCOBAAN: