LAMPIRAN A

Pengendali Motor POV

```
/*******************************
**********************
This program was produced by the
CodeWizardAVR V1.25.3
Professional
Automatic Program Generator
© Copyright 1998-2007 Pavel
Haiduc, HP InfoTech s.r.l.
http://www.hpinfotech.com

Project :
Version :
Date    : 11/22/2010
Author  :
Company :
Comments:


Chip type           : ATmega16
Program type        :
Application
Clock frequency     : 11.059200
MHz
Memory model        : Small
External SRAM size  : 0
Data Stack size     : 256
*******************************
********************/

#include <mega16.h>
#include <stdio.h>
#include <delay.h>

char text[16];
char text2[16];
int var;


// Alphanumeric LCD Module
functions
#asm
   .equ __lcd_port=0x15 ;PORTC
#endasm
#include <lcd.h>

#define ADC_VREF_TYPE 0x40

// Read the AD conversion result
unsigned int read_adc(unsigned
char adc_input)
{
ADMUX=adc_input | (ADC_VREF_TYPE
& 0xff);
// Start the AD conversion
ADCSRA|=0x40;
// Wait for the AD conversion to
complete
while ((ADCSRA & 0x10)==0);
ADCSRA|=0x10;
return ADCW;
}

// Declare your global variables
here
```

```
void main(void)
{
// Declare your local variables
here

// Input/Output Ports
initialization
// Port A initialization
// Func7=In Func6=In Func5=In
Func4=In Func3=In Func2=In
Func1=In Func0=In
// State7=T State6=T State5=T
State4=T State3=T State2=T
State1=T State0=T
PORTA=0x00;
DDRA=0x00;

// Port B initialization
// Func7=In Func6=In Func5=In
Func4=In Func3=In Func2=In
Func1=In Func0=In
// State7=T State6=T State5=T
State4=T State3=T State2=T
State1=T State0=T
PORTB=0x00;
DDRB=0x00;

// Port C initialization
// Func7=In Func6=In Func5=In
Func4=In Func3=In Func2=In
Func1=In Func0=In
// State7=T State6=T State5=T
State4=T State3=T State2=T
State1=T State0=T
PORTC=0x00;
DDRC=0x00;

// Port D initialization
// Func7=In Func6=In Func5=Out
Func4=In Func3=In Func2=In
Func1=In Func0=In
// State7=T State6=T State5=0
State4=T State3=T State2=T
State1=T State0=T
PORTD=0x00;
DDRD=0xFF;

// Timer/Counter 0
initialization
// Clock source: System Clock
// Clock value: Timer 0 Stopped
// Mode: Normal top=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=0x00;

// // Timer/Counter 1
initialization
// // Clock source: System Clock
// // Clock value: 10.800 kHz
// // Mode: Ph. & fr. cor. PWM
top=ICR1
// // OC1A output: Non-Inv.
// // OC1B output: Discon.
// // Noise Canceler: Off
// // Input Capture on Falling
Edge
// // Timer 1 Overflow
Interrupt: Off
// // Input Capture Interrupt:
Off
// // Compare A Match Interrupt:
Off
// // Compare B Match Interrupt:
Off
// TCCR1A=0x80;
// TCCR1B=0x15;
// TCNT1H=0x00;
// TCNT1L=0x00;
// ICR1H=0xAF;
// ICR1L=0x80;
// OCR1AH=0x00;
// OCR1AL=0x00;
// OCR1BH=0x00;
// OCR1BL=0x00;

// Timer/Counter 1
initialization
// Clock source: System Clock
// Clock value: 1382.400 kHz
// Mode: Ph. & fr. cor. PWM
top=ICR1
// OC1A output: Non-Inv.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer 1 Overflow Interrupt:
Off
// Input Capture Interrupt: Off
// Compare A Match Interrupt:
Off
// Compare B Match Interrupt:
Off
TCCR1A=0x80;
TCCR1B=0x12;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0xAF;
ICR1L=0x80;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

// Timer/Counter 2
initialization
// Clock source: System Clock
// Clock value: Timer 2 Stopped
// Mode: Normal top=FFh
// OC2 output: Disconnected
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;

// External Interrupt(s)
initialization
// INT0: Off
// INT1: Off
// INT2: Off
MCUCR=0x00;
MCUCSR=0x00;

// Timer(s)/Counter(s)
Interrupt(s) initialization
TIMSK=0x00;

// Analog Comparator
initialization
// Analog Comparator: Off
// Analog Comparator Input
Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

// ADC initialization
// ADC Clock frequency: 691.200
kHz
// ADC Voltage Reference: AVCC
pin
// ADC Auto Trigger Source: Free
Running
ADMUX=ADC_VREF_TYPE & 0xff;
ADCSRA=0xA4;
SFIOR&=0x1F;

// LCD module initialization
lcd_init(16);

read_adc(0);

while (1)
      {
      // Place your code here
      var=ADCW;
      OCR1A=10000+var*35;

      lcd_clear();

sprintf(text,"ocr=%5u",OCR1A);

sprintf(text2,"adc=%4u",var);
      lcd_puts(text);
      lcd_gotoxy(0,1);
      lcd_puts(text2);
      delay_ms(100);

      };
}
```

Pengendali LED POV

```
/*******************************
*********************
This program was produced by the
CodeWizardAVR V2.03.7 Evaluation
Automatic Program Generator
© Copyright 1998-2008 Pavel
Haiduc, HP InfoTech s.r.l.
http://www.hpinfotech.com

Project :
Version :
Date    : 12/3/2010
Author  : Freeware, for
evaluation and non-commercial
use only
Company :
Comments:


Chip type           : ATmega8
Program type        :
Application
Clock frequency     : 16.000000
MHz
Memory model        : Small
```

```
External RAM size   : 0
Data Stack size     : 256
********************************
********************/

#include <mega8.h>
#include <delay.h>
// Declare your global variables
here
int hit;
void main(void)
{
// Declare your local variables
here

// Input/Output Ports
initialization
// Port B initialization
// Func7=In Func6=In Func5=In
Func4=In Func3=In Func2=In
Func1=In Func0=Out
// State7=T State6=T State5=T
State4=T State3=T State2=T
State1=T State0=0
PORTB=0x01;
DDRB=0x01;

// Port C initialization
// Func6=In Func5=Out Func4=In
Func3=Out Func2=In Func1=In
Func0=In
// State6=T State5=0 State4=T
State3=0 State2=T State1=T
State0=T
PORTC=0x78;
DDRC=0x28;

// Port D initialization
// Func7=Out Func6=Out Func5=Out
Func4=Out Func3=Out Func2=Out
Func1=Out Func0=Out
// State7=0 State6=0 State5=0
State4=0 State3=0 State2=0
State1=0 State0=0
PORTD=0x00;
DDRD=0xFF;

// Timer/Counter 0
initialization
// Clock source: System Clock
// Clock value: Timer 0 Stopped
TCCR0=0x00;
TCNT0=0x00;

// Timer/Counter 1
initialization
// Clock source: System Clock
// Clock value: Timer 1 Stopped
// Mode: Normal top=FFFFh
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer 1 Overflow Interrupt:
Off
// Input Capture Interrupt: Off
// Compare A Match Interrupt:
Off
// Compare B Match Interrupt:
Off
```

```
TCCR1A=0x00;
TCCR1B=0x00;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

// Timer/Counter 2
initialization
// Clock source: System Clock
// Clock value: Timer 2 Stopped
// Mode: Normal top=FFh
// OC2 output: Disconnected
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;

// External Interrupt(s)
initialization
// INT0: Off
// INT1: Off
MCUCR=0x00;

// Timer(s)/Counter(s)
Interrupt(s) initialization
TIMSK=0x00;

// Analog Comparator
initialization
// Analog Comparator: Off
// Analog Comparator Input
Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

while (1)
      {
      if (PINC.3==1 &&
PINC.5==1)
       {
      if (PINB.0==0)
      {
      PORTD=0x7c;
      delay_ms(1);      //A
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x09;
      delay_ms(1);
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x7c;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x7f;
      delay_ms(1);      //H
      PORTD=0x08;
      delay_ms(1);
      PORTD=0x08;
      delay_ms(1);
      PORTD=0x08;
      delay_ms(1);
      PORTD=0x7f;
      delay_ms(1);
```

```
PORTD=0x00;
delay_ms(2);

PORTD=0x01;
delay_ms(1);      //T
PORTD=0x01;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x01;
delay_ms(1);
PORTD=0x01;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x7c;
delay_ms(1);      //A
PORTD=0x0a;
delay_ms(1);
PORTD=0x09;
delay_ms(1);
PORTD=0x0a;
delay_ms(1);
PORTD=0x7c;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x7f;
delay_ms(1);      //N
PORTD=0x10;
delay_ms(1);
PORTD=0x08;
delay_ms(1);
PORTD=0x04;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x7c;
delay_ms(1);      //A
PORTD=0x0a;
delay_ms(1);
PORTD=0x09;
delay_ms(1);
PORTD=0x0a;
delay_ms(1);
PORTD=0x7c;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x46;
delay_ms(1);       //R
PORTD=0x29;
delay_ms(1);
PORTD=0x19;
delay_ms(1);
PORTD=0x09;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x7c;
delay_ms(1);      //A
```

```
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x09;
      delay_ms(1);
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x7c;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x7f;
      delay_ms(1);      //M
      PORTD=0x02;
      delay_ms(1);
      PORTD=0x0c;
      delay_ms(1);
      PORTD=0x02;
      delay_ms(1);
      PORTD=0x7f;
      delay_us(500);
      PORTD=0x00;
      delay_ms(4);hit=1;
      }
       else
      {PORTD=0x00 ;
        }
      }



      if (PINC.3==0 &&
PINC.5==0)
      {
      if (PINB.0==0)
      {PORTD=0x41;
      delay_ms(1);      // K
      PORTD=0x22;
      delay_ms(1);
      PORTD=0x14;
      delay_ms(1);
      PORTD=0x08;
      delay_ms(1);
      PORTD=0x7f;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x7c;
      delay_ms(1);      //A
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x09;
      delay_ms(1);
      PORTD=0x0a;
      delay_ms(1);
      PORTD=0x7c;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x31;
      delay_ms(1);       //S
      PORTD=0x49;
      delay_ms(1);
      PORTD=0x49;
      delay_ms(1);
      PORTD=0x49;
      delay_ms(1);
      PORTD=0x46;
```

```
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x3f;
delay_ms(1);       //U
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x3f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x07;
delay_ms(1);       //Y
PORTD=0x04;
delay_ms(1);
PORTD=0x7c;
delay_ms(1);
PORTD=0x04;
delay_ms(1);
PORTD=0x07;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);       //...
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);        //...
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);       //..
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
```

```
      delay_ms(1);       //..
      PORTD=0x00;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(1);
      PORTD=0x00;
      delay_us(500);
      PORTD=0x00;
      delay_ms(4);
      }
        else
      {PORTD=0x00 ;
        }
      }


      if (PINC.3==1 &&
PINC.5==0)
      {
      if (PINB.0==0)
      {PORTD=0x3e;
      delay_ms(1);       // O
      PORTD=0x41;
      delay_ms(1);
      PORTD=0x41;
      delay_ms(1);
      PORTD=0x41;
      delay_ms(1);
      PORTD=0x3e;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x46;
      delay_ms(1);       // R
      PORTD=0x29;
      delay_ms(1);
      PORTD=0x19;
      delay_ms(1);
      PORTD=0x09;
      delay_ms(1);
      PORTD=0x7f;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x01;
      delay_ms(1);       // T
      PORTD=0x01;
      delay_ms(1);
      PORTD=0x7f;
      delay_ms(1);
      PORTD=0x01;
      delay_ms(1);
      PORTD=0x01;
      delay_ms(1);
      PORTD=0x00;
      delay_ms(2);

      PORTD=0x41;
      delay_ms(1);       //K
      PORTD=0x22;
      delay_ms(1);
      PORTD=0x14;
      delay_ms(1);
      PORTD=0x08;
      delay_ms(1);
      PORTD=0x7f;
```

```
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x41;
delay_ms(1);        //E
PORTD=0x49;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x40;
delay_ms(1);       //L
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x41;
delay_ms(1);       //E
PORTD=0x49;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);       //...
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);       //..
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_us(500);
PORTD=0x00;
delay_ms(4);
}
 else
```

```
{PORTD=0x00 ;
  }
}

 if (PINC.3==0 &&
PINC.5==1)
{
if (PINB.0==0)
{PORTD=0x3e;
delay_ms(1);      // 0
PORTD=0x45;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x51;
delay_ms(1);
PORTD=0x3e;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x40;
delay_ms(1);     // 1
PORTD=0x7f;
delay_ms(1);
PORTD=0x42;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x3e;
delay_ms(1);      // 0
PORTD=0x45;
delay_ms(1);
PORTD=0x49;
delay_ms(1);
PORTD=0x51;
delay_ms(1);
PORTD=0x3e;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x46;
delay_ms(1);      //2
PORTD=0x49;
delay_ms(1);
PORTD=0x51;
delay_ms(1);
PORTD=0x61;
delay_ms(1);
PORTD=0x42;
delay_ms(1);
PORTD=0x00;
delay_ms(4);

PORTD=0x7f;
delay_ms(1);       //M
PORTD=0x02;
delay_ms(1);
PORTD=0x0c;
delay_ms(1);
PORTD=0x02;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x41;
delay_ms(1);      //K
PORTD=0x22;
delay_ms(1);
PORTD=0x14;
delay_ms(1);
PORTD=0x08;
delay_ms(1);
PORTD=0x7f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x3f;
delay_ms(1);      //U
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x40;
delay_ms(1);
PORTD=0x3f;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);      //...
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(2);

PORTD=0x00;
delay_ms(1);      //..
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_ms(1);
PORTD=0x00;
delay_us(500);
PORTD=0x00;
delay_ms(4);
}
 else
{PORTD=0x00 ;
  }
}
};
    }
```

LAMPIRAN B

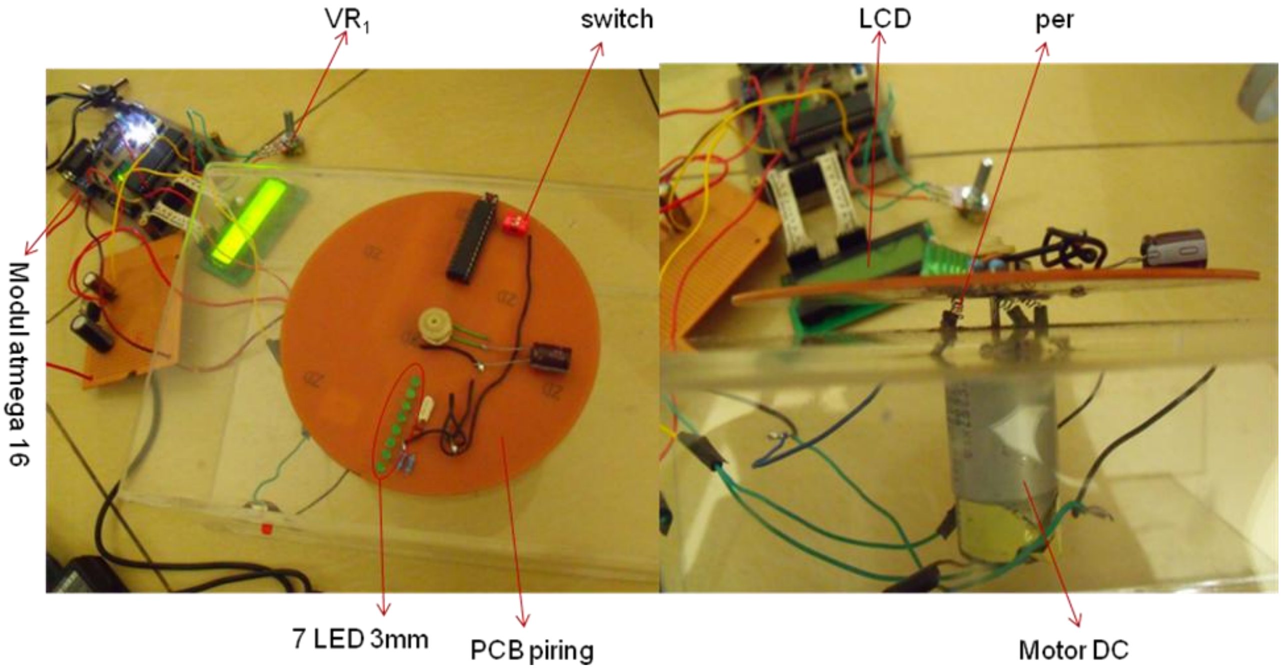


Foto Alat POV

LAMPIRAN C

Kombinasi karakter yang ditampilkan dengan menggunakan 7 buah LED

○○●○○	●●●●○	○●●●○	●●●●○	●●●●●	●●●●●
○●○●○	●○○○●	●○○○●	●○○○●	●○○○○	●○○○○
●○○○●	●○○○●	●○○○○	●○○○●	●○○○○	●○○○○
●●●●●	●●●●○	●○○○○	●○○○●	●●●●●	●●●●○
●○○○●	●○○○●	●○○○○	●○○○●	●○○○○	●○○○○
●○○○●	●○○○●	●○○○●	●○○○●	●○○○○	●○○○○
●○○○●	●●●●○	○●●●○	●●●●○	●●●●●	●○○○○

○●●●○	●○○○●	○●●●○	○○○●●	●○○○●	●○○○○
●○○○●	●○○○●	○○●○○	○○○○●	●○○●○	●○○○○
●○○○○	●○○○●	○○●○○	○○○○●	●○●○○	●○○○○
●○●●●	●●●●●	○○●○○	○○○○●	●●○○○	●○○○○
●○○○●	●○○○●	○○●○○	○○○○●	●●●○○	●○○○○
●○○○●	●○○○●	○○●○○	●○○○●	●○○●○	●○○○○
○●●●●	●○○○●	○●●●○	○●●●○	●○○○●	●●●●●

●○○○●	●○○○●	○●●●○	●●●●○	○●●●○	●●●●○
●●○●●	●○○○●	●○○○●	●○○○●	●○○○●	●○○○●
●○●○●	●●○○●	●○○○●	●○○○●	●○○○●	●○○○●
●○●○●	●○●○●	●○○○●	●●●●○	●○○○●	●●●●○
●○○○●	●○○●●	●○○○●	●○○○○	●○●○●	●○●○○
●○○○●	●○○○●	●○○○●	●○○○○	●○○●●	●○○●○
●○○○●	●○○○●	○●●●○	●○○○○	○●●●○	●○○○●

○●●●○	●●●●●	●○○○●	●○○○●	●○○○●	●○○○●
●○○○●	○○●○○	●○○○●	●○○○●	●○○○●	○●○●○
●○○○○	○○●○○	●○○○●	●○○○●	●○○○●	○●○●○
○●●●○	○○●○○	●○○○●	●○○○●	●○○○●	○○●○○
○○○○●	○○●○○	●○○○●	○●○●○	●○●○●	○●○●○
●○○○●	○○●○○	●○○○●	○●○●○	●○●○●	○●○●○
○●●●○	○○●○○	○●●●○	○○●○○	○●○●○	●○○○●

```
●○○○●   ●●●●●   ○●●●○   ○○●○○   ○●●●○   ○●●●○
●○○○●   ○○○○●   ●○○○●   ○●●○○   ●○○○●   ●○○○●
●●●●●   ○○○●○   ●●○○●   ○○●○○   ○○○○●   ○○○○●
○○●○○   ○○●○○   ●○●○●   ○○●○○   ○○○●○   ○●●●○
○○●○○   ○●○○○   ●○○●●   ○○●○○   ○○●○○   ○○○○●
○○●○○   ●○○○○   ●○○○●   ○○●○○   ○●○○○   ●○○○●
○○●○○   ●●●●●   ○●●●○   ○●●●○   ●●●●●   ○●●●○

○○○○●   ●●●●●   ○●●●○   ●●●●●   ○●●●○   ○●●●○
○○○●●   ●○○○○   ●○○○●   ○○○○●   ●○○○●   ●○○○●
○○●○●   ●○○○○   ●○○○○   ○○○●○   ●○○○●   ●○○○●
○●○○●   ○●●●○   ●●●●○   ○○●○○   ○●●●○   ○●●●●
●●●●●   ○○○○●   ●○○○●   ○●○○○   ●○○○●   ○○○○●
○○○○●   ●○○○●   ●○○○●   ○●○○○   ●○○○●   ●○○○●
○○○○●   ○●●●○   ○●●●○   ○●○○○   ○●●●○   ○●●●○
```

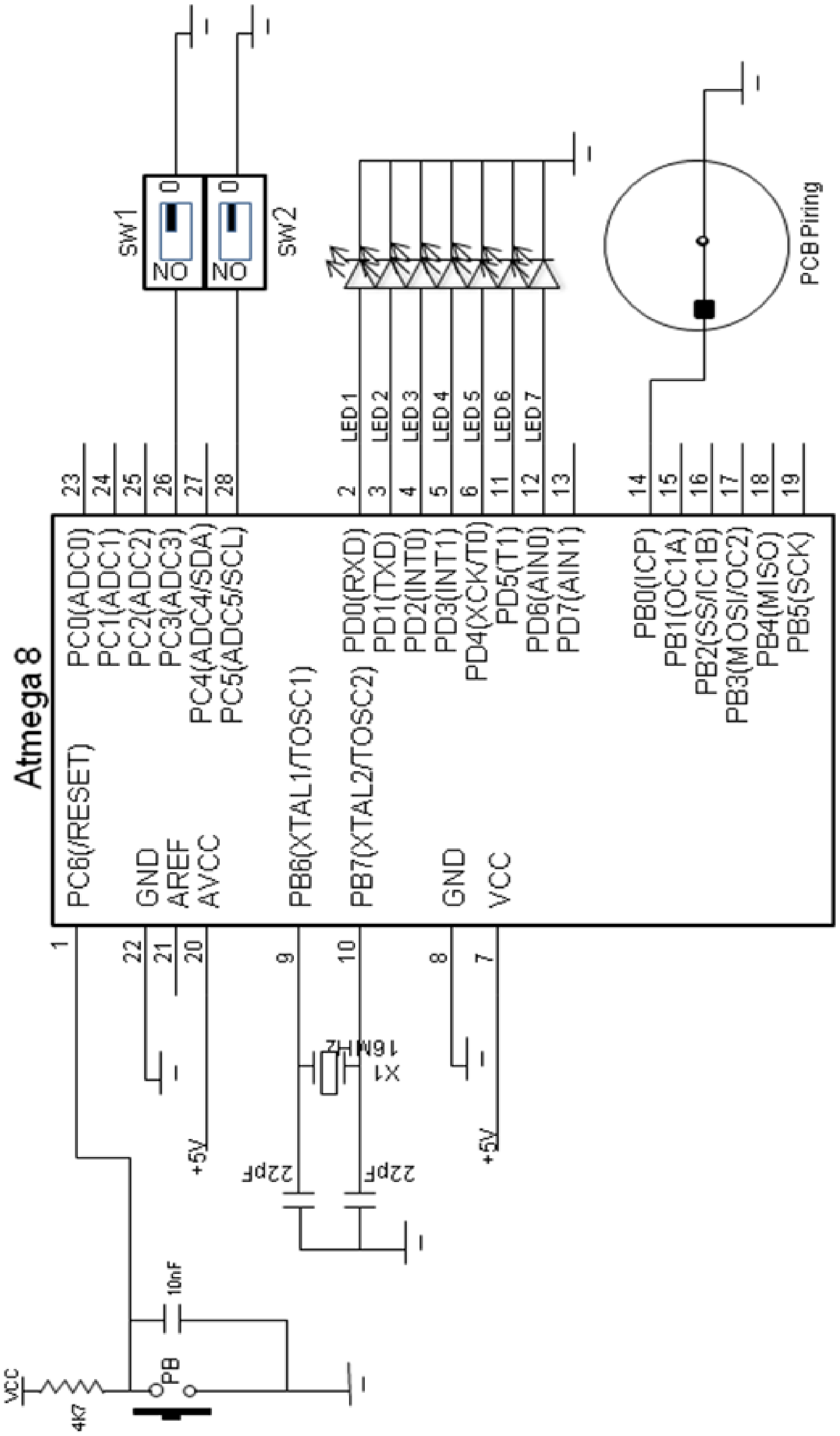
LAMPIRAN A
KODE PROGRAM

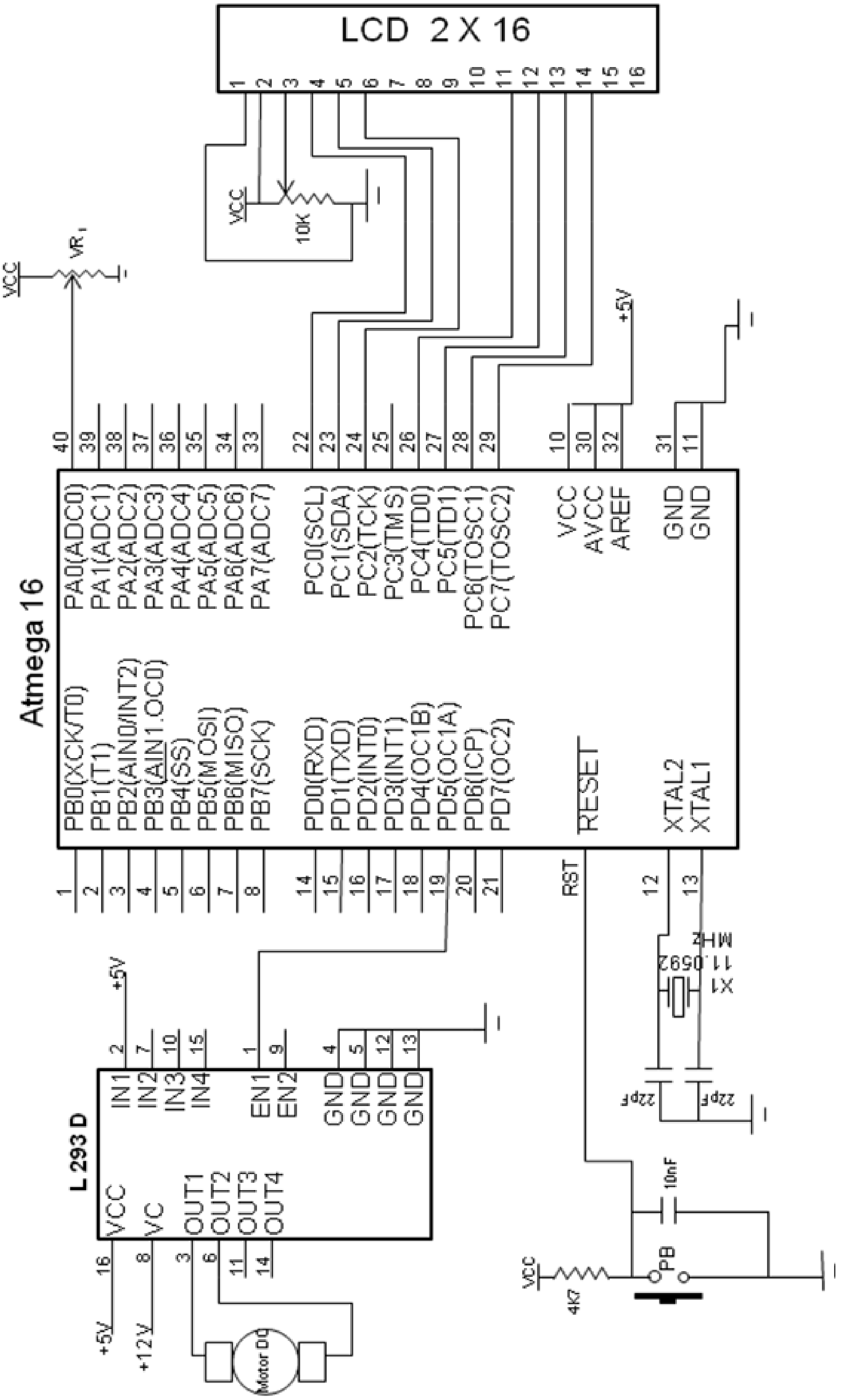
LAMPIRAN B
FOTO ALAT

LAMPIRAN C
KOMBINASI KARAKTER

LAMPIRAN E
DATASHEET

LAMPIRAN D
SKEMATIK RANGKAIAN


Atmega 8
PC6(/RESET)
GND
AREF
AVCC
PB6(XTAL1/TOSC1)
PB7(XTAL2/TOSC2)
GND
VCC
PC0(ADC0)
PC1(ADC1)
PC2(ADC2)
PC3(ADC3)
PC4(ADC4/SDA)
PC5(ADC5/SCL)
PD0(RXD)
PD1(TXD)
PD2(INT0)
PD3(INT1)
PD4(XCK/T0)
PD5(T1)
PD6(AIN0)
PD7(AIN1)
PB0(ICP)
PB1(OC1A)
PB2(SS/IC1B)
PB3(MOSI/OC2)
PB4(MISO)
PB5(SCK)
1
22
21
20
9
10
8
7
23
24
25
26
27
28
2
3
4
5
6
11
12
13
14
15
16
17
18
19
LED 1
LED 2
LED 3
LED 4
LED 5
LED 6
LED 7
SW1
SW2
ON
0
ON
0
PCB Piring
X1
16MHz
22pF
22pF
+5V
+5V
10nF
PB
4K7
VCC


LCD 2 X 16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
VCC
10K
VCC
VR1
+5V
Atmega 16
PA0(ADC0)
PA1(ADC1)
PA2(ADC2)
PA3(ADC3)
PA4(ADC4)
PA5(ADC5)
PA6(ADC6)
PA7(ADC7)
PC0(SCL)
PC1(SDA)
PC2(TCK)
PC3(TMS)
PC4(TD0)
PC5(TD1)
PC6(TOSC1)
PC7(TOSC2)
VCC
AVCC
AREF
GND
GND
40 39 38 37 36 35 34 33
22 23 24 25 26 27 28 29
10 30 32
31 11
PB0(XCK/T0)
PB1(T1)
PB2(AIN0/INT2)
PB3(AIN1.OC0)
PB4(SS)
PB5(MOSI)
PB6(MISO)
PB7(SCK)
PD0(RXD)
PD1(TXD)
PD2(INT0)
PD3(INT1)
PD4(OC1B)
PD5(OC1A)
PD6(ICP)
PD7(OC2)
RESET
XTAL2
XTAL1
1 2 3 4 5 6 7 8
14 15 16 17 18 19 20 21
RST
12 13
X1
11.0592
MHz
22pF
22pF
10nF
VCC
4K7
PB
L 293 D
VCC
VC
OUT1
OUT2
OUT3
OUT4
IN1
IN2
IN3
IN4
EN1
EN2
GND
GND
GND
GND
+5V
2 7 10 15
1 9
4 5 12 13
16 8 3 6 11 14
+5V
+12V
Motor DC