LAMPIRAN

Foto Alat

Coding CodeVision Untuk Pemograman Mikrokontroler

```
/*****************************************************
This program was produced by the
CodeWizardAVR V2.05.3 Standard
Automatic Program Generator
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http://www.hpinfotech.com
```

Project :

Version :

Date : 7/26/2015

Author : Sh.mukti

Company : Jangan gunakan software bajakan!

Comments:

Chip type : ATmega8535

Program type : Application

AVR Core Clock frequency: 11.059200 MHz

Memory model : Small

External RAM size : 0

Data Stack size : 256

**********/

#include <mega16a.h>

#include <delay.h>

// Standard Input/Output functions

```
#include <stdio.h>

int a;


#define ADC_VREF_TYPE 0x60


// Read the 8 most significant bits

// of the AD conversion result

unsigned char read_adc(unsigned char adc_input)

{

ADMUX=adc_input | (ADC_VREF_TYPE & 0xff);

// Delay needed for the stabilization of the ADC input voltage

delay_us(10);

// Start the AD conversion

ADCSRA|=0x40;

// Wait for the AD conversion to complete

while ((ADCSRA & 0x10)==0);

ADCSRA|=0x10;

return ADCH;

}


// 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=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

PORTC=0x00;

DDRC=0xFF;


// Port D 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

PORTD=0x00;

DDRD=0x00;


// Timer/Counter 0 initialization

// Clock source: System Clock

// Clock value: Timer 0 Stopped

// Mode: Normal top=0xFF

// OC0 output: Disconnected

TCCR0=0x00;

TCNT0=0x00;

OCR0=0x00;
```

```
// Timer/Counter 1 initialization
// Clock source: System Clock
// Clock value: Timer1 Stopped
// Mode: Normal top=0xFFFF
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer1 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: Timer2 Stopped
// Mode: Normal top=0xFF
// 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;
```

```
// USART initialization
// Communication Parameters: 8 Data, 1 Stop, No Parity
// USART Receiver: On
// USART Transmitter: On
// USART Mode: Asynchronous
// USART Baud Rate: 9600
UCSRA=0x00;
UCSRB=0x18;
UCSRC=0x86;
UBRRH=0x00;
UBRRL=0x47;

// 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
// Only the 8 most significant bits of
// the AD conversion result are used
ADMUX=ADC_VREF_TYPE & 0xff;
ADCSRA=0xA4;
SFIOR&=0x1F;

// SPI initialization
// SPI disabled
SPCR=0x00;

// TWI initialization
// TWI disabled
TWCR=0x00;

while (1)
      {
      a=read_adc(0);
      delay_ms(100);
```

```
if((a>=0)&&(a<=73))
 {
 printf("%d",0);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
 }

 if((a>=75)&&(a<=79))
 {
 printf("%d",1);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
 }

 if((a>=81)&&(a<=85))
 {
 printf("%d",2);
 delay_ms(100);
 PORTC=0b11111111;
```

```
 delay_ms(100);
}

if((a>=87)&&(a<=91))
{
 printf("%d",3);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}

if((a>=93)&&(a<=97))
{
 printf("%d",4);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}

if((a>=99)&&(a<=104))
{
```

```
 printf("%d",5);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}

if((a>=106)&&(a<=110))
{
 printf("%d",6);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}

if((a>=112)&&(a<=116))
{
 printf("%d",7);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}
```

```
if((a>=118)&&(a<=122))
{
 printf("%d",8);
 delay_ms(100);
 PORTC=0b11111111;
 delay_ms(100);
}

if((a>=124)&&(a<=128))
{
 printf("%d",9);
 delay_ms(100);
 PORTC=0b00000000;
 delay_ms(100);
}

if((a>=129)&&(a<=134))
{
 printf("A");
 delay_ms(100);
```

```
        PORTC=0b00000000;
        delay_ms(100);
       }
       if((a>=135)&&(a<=255))
       {
        printf("B");
        delay_ms(100);
        PORTC=0b11111111;
        delay_ms(100);
       }



      }
}
```

Coding Aplikasi Monitoring Pada Borland Delphi 7

```
unit Unit1;


interface


uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
```

```
  Dialogs, StdCtrls, ExtCtrls, TeeProcs, TeEngine, Chart, CPort;


type
  TForm1 = class(TForm)
    connect: TButton;
    Label1: TLabel;
    setting: TButton;
    exit: TButton;
    Label2: TLabel;
    Label3: TLabel;
    Label4: TLabel;
    Keterangan: TGroupBox;
    Proses: TGroupBox;
    status: TLabeledEdit;
    volume: TLabeledEdit;
    Label5: TLabel;
    Button4: TButton;
    ComPort1: TComPort;
    disconnect: TButton;
    Memo1: TMemo;
    Chart1: TChart;
```

```
Shape1: TShape;
Shape2: TShape;
Shape3: TShape;
Shape4: TShape;
Shape5: TShape;
Shape6: TShape;
Shape7: TShape;
Shape8: TShape;
Shape9: TShape;
Shape10: TShape;
Label6: TLabel;
Label7: TLabel;
Label8: TLabel;
Label9: TLabel;
Label10: TLabel;
Label11: TLabel;
Label12: TLabel;
Label13: TLabel;
Label14: TLabel;
Label15: TLabel;
Label16: TLabel;
```

```
    Label17: TLabel;
    level: TLabeledEdit;
    Shape11: TShape;
    Label18: TLabel;
    Label19: TLabel;
    Label20: TLabel;
    Label21: TLabel;
    Label22: TLabel;
    procedure settingClick(Sender: TObject);
    procedure connectClick(Sender: TObject);
    procedure disconnectClick(Sender: TObject);
    procedure ComPort1RxChar(Sender: TObject; Count: Integer);
    procedure exitClick(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;

var
  Form1: TForm1;
```

```
implementation

{$R *.dfm}

procedure TForm1.settingClick(Sender: TObject);
begin
ComPort1.ShowSetupDialog;
end;

procedure TForm1.connectClick(Sender: TObject);
begin
comport1.Open;
end;

procedure TForm1.disconnectClick(Sender: TObject);
begin
comport1.close;
end;

procedure TForm1.ComPort1RxChar(Sender: TObject; Count: Integer);
```

```
var
data:string;
begin
  comport1.ReadStr(data,count);
  memo1.lines.text:=data;

  if data='0'  then
  begin
    shape1.Brush.Color:=clsilver;
    shape2.Brush.Color:=clsilver;
    shape3.Brush.Color:=clsilver;
    shape4.Brush.Color:=clsilver;
    shape5.Brush.Color:=clsilver;
    shape6.Brush.Color:=clsilver;
    shape7.Brush.Color:=clsilver;
    shape8.Brush.Color:=clsilver;
    shape9.Brush.Color:=clsilver;
    shape10.Brush.Color:=clsilver;
    shape11.Brush.Color:=clsilver;
    level.Text:='LEVEL 0';
    status.Text:='BOCOR';
```

```
  volume.Text:='0 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

end;
if data='1'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clsilver;
  shape3.Brush.Color:=clsilver;
  shape4.Brush.Color:=clsilver;
  shape5.Brush.Color:=clsilver;
  shape6.Brush.Color:=clsilver;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 1';
  status.Text:='BOCOR';
  volume.Text:='1 LITER';
```

```
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

end;

if data='2'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clsilver;
  shape4.Brush.Color:=clsilver;
  shape5.Brush.Color:=clsilver;
  shape6.Brush.Color:=clsilver;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 2';
  status.Text:='BOCOR';
  volume.Text:='2 LITER';
```

```
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

end;
 if data='3'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clsilver;
  shape5.Brush.Color:=clsilver;
  shape6.Brush.Color:=clsilver;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 3';
  status.Text:='BOCOR';
  volume.Text:='3 LITER';
  label21.Caption:='MOTOR POMPA OFF';
```

```
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';


end;
if data='4'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clred;
  shape5.Brush.Color:=clsilver;
  shape6.Brush.Color:=clsilver;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 4';
  status.Text:='BOCOR';
  volume.Text:='4 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';
```

```
end;
 if data='5'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clred;
  shape5.Brush.Color:=clred;
  shape6.Brush.Color:=clsilver;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 5';
  status.Text:='BOCOR';
  volume.Text:='5 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';
```

```
end;
 if data='6'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clred;
  shape5.Brush.Color:=clred;
  shape6.Brush.Color:=clred;
  shape7.Brush.Color:=clsilver;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 6';
  status.Text:='BOCOR';
  volume.Text:='6 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

end;
```

```
if data='7'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clred;
  shape5.Brush.Color:=clred;
  shape6.Brush.Color:=clred;
  shape7.Brush.Color:=clred;
  shape8.Brush.Color:=clsilver;
  shape9.Brush.Color:=clsilver;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 7';
  status.Text:='BOCOR';
  volume.Text:='7 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

end;
if data='8'  then
```

```
  begin
    shape1.Brush.Color:=clred;
    shape2.Brush.Color:=clred;
    shape3.Brush.Color:=clred;
    shape4.Brush.Color:=clred;
    shape5.Brush.Color:=clred;
    shape6.Brush.Color:=clred;
    shape7.Brush.Color:=clred;
    shape8.Brush.Color:=clred;
    shape9.Brush.Color:=clsilver;
    shape10.Brush.Color:=clsilver;
    shape11.Brush.Color:=clsilver;
    level.Text:='LEVEL 8';
    status.Text:='BOCOR';
    volume.Text:='8 LITER';
    label21.Caption:='MOTOR POMPA OFF';
    label22.Caption:='TERJADI KEBOCORAN PADA TANGKI OLI';

  end;
if data='9'  then
  begin
```

```
  shape1.Brush.Color:=clblue;
  shape2.Brush.Color:=clblue;
  shape3.Brush.Color:=clblue;
  shape4.Brush.Color:=clblue;
  shape5.Brush.Color:=clblue;
  shape6.Brush.Color:=clblue;
  shape7.Brush.Color:=clblue;
  shape8.Brush.Color:=clblue;
  shape9.Brush.Color:=clblue;
  shape10.Brush.Color:=clsilver;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 9';
  status.Text:='NORMAL';
  volume.Text:='9 LITER';
  label21.Caption:='MOTOR POMPA ON';
  label22.Caption:='PROSES BERJALAN DENGAN BAIK';

end;
if data='A'  then
begin
  shape1.Brush.Color:=clblue;
```

```
  shape2.Brush.Color:=clblue;
  shape3.Brush.Color:=clblue;
  shape4.Brush.Color:=clblue;
  shape5.Brush.Color:=clblue;
  shape6.Brush.Color:=clblue;
  shape7.Brush.Color:=clblue;
  shape8.Brush.Color:=clblue;
  shape9.Brush.Color:=clblue;
  shape10.Brush.Color:=clblue;
  shape11.Brush.Color:=clsilver;
  level.Text:='LEVEL 10';
  status.Text:='NORMAL';
  volume.Text:='10 LITER';
  label21.Caption:='MOTOR POMPA ON';
  label22.Caption:='PROSES BERJALAN DENGAN BAIK';

end;
if data='B'  then
begin
  shape1.Brush.Color:=clred;
  shape2.Brush.Color:=clred;
```

```
  shape3.Brush.Color:=clred;
  shape4.Brush.Color:=clred;
  shape5.Brush.Color:=clred;
  shape6.Brush.Color:=clred;
  shape7.Brush.Color:=clred;
  shape8.Brush.Color:=clred;
  shape9.Brush.Color:=clred;
  shape10.Brush.Color:=clred;
  shape11.Brush.Color:=clred;

  level.Text:='LEVEL 11';
  status.Text:='OVERFLOW';
  volume.Text:='11 LITER';
  label21.Caption:='MOTOR POMPA OFF';
  label22.Caption:='OVERFLOW PADA TANGKI OLI!!!';

end;
```

```
end;


procedure TForm1.exitClick(Sender: TObject);
begin
Form1.Close
end;


end.
```

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Dosen Pembimbing : Sugondo, M.Kom

NO	Tanggal	Uraian	Paraf Pembimbing
1	24-06-2015	Bimbingan Bab 1	
2	25-06-2015	Revisi Bab 1	
3	26-06-2015	Bimbingan Bab II	
4	29-06-2015	Revisi Bab II	
5	3-07-2015	Bimbingan Bab II dan III	
6	7-07-2015	Revisi Bab III	
7	10-07-2015	Bimbingan Bab IV dan V	
8	14-08-2015	Revisi Bab IV	
9	20-08-2015	Revisi Bab IV	
10	24-08-2015	Bimbingan Bab I, II, III, IV, V	

Pangkalpinang, 24 Agustus 2015
Dosen Pembimbing Teori

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Dosen Pembimbing : SUJONO, M.Kom

NO	Tanggal	Uraian	Paraf Pembimbing
1	06-07-2015	Bimbingan Rancangan Aplikasi I	
2	08-07-2015	Bimbingan Rancangan Aplikasi II	
3	09-07-2015	Bimbingan Coding	
4	13-07-2015	Revisi Rancangan Aplikasi	
5	3-08-2015	Revisi Coding	
6	5-08-2015	Revisi Coding	
7	6-08-2015	Revisi Coding	
8	12-08-2015	Tes Program	
9	13-08-2015	Testing Program dan Revisi	
10	14-08-2015	Testing Program Finishing	

Pangkalpinang, 24 Agustus 2015
Dosen Pembimbing Program

(SUJONO)