

LAMPIRAN A
PROGRAM PADA PENGONTROL MIKRO AVR
ATMEGA 16


```

DDRD=0xA0;

// 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: 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
// 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=0x98;
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;

// LCD module initialization
lcd_init(16);

// Global enable interrupts
#asm("sei")

while (1)

```

```

    {
idrom[0]=654321;
idrom[1]=754321;
idrom[2]=854321;
idrom[3]=578888;
idrom[4]=565656;
idrom[5]=423457;
secur=0;
ulang:
    if(secur==4)
        {lcd_clear();
        lcd_putsf("PLEASE WAIT.....");
        delay_ms(10000);
        secur=0;
        goto ulang ; }
    else

        lcd_clear();
        lcd_gotoxy(0,0);
        lcd_putsf("====welcome====");
        delay_ms(2000);
        set=0;
        ok=0;
//
Menu=====
=====
menu:
    lcd_clear();
    key=keypad();
    lcd_gotoxy(0,0);
    lcd_putsf(" AVR MODUL 03 ");
    lcd_gotoxy(0,1);
    lcd_putsf("A=IDCARD B=RFID");

        if (key=='A') goto inputcard;
        else if(key=='B') goto inputRFID;

    delay_ms(200);
    goto menu;
// program
inputcard=====
=====

inputcard:

    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("INPUT CARD:");
    delay_ms(500);
    for(j=0;j<=6;j++)
    {
        key=keypad();
        lcd_clear();
            if(j==0)
                {data[0]=key;lcd_gotoxy(0,0);
                sprintf(text,"INPUT CARD1:");}
            else if(j==1)
                {data[1]=key;lcd_gotoxy(0,0);
                lcd_putsf("INPUT CARD2:");
                lcd_gotoxy(0,1);sprintf(text,"%c",data[0]);}
            else if(j==2)
                {data[2]=key;lcd_gotoxy(0,0);lcd_putsf("INPUT
                CARD3:");
                lcd_gotoxy(0,1);sprintf(text,"%c%c",data[0],data
                [1]);}
            else if(j==3)
                {data[3]=key;lcd_gotoxy(0,0);lcd_putsf("INPUT
                CARD4:");lcd_gotoxy(0,1);
                sprintf(text,"%c%c%c",data[0],data[1],data[2]);}
            else if(j==4)
                {data[4]=key;lcd_gotoxy(0,0);lcd_putsf("INPUT
                CARD5:");lcd_gotoxy(0,1);
                sprintf(text,"%c%c%c%c",data[0],data[1],data[2]
                ,data[3]);}
            else if(j==5)
                {data[5]=key;lcd_gotoxy(0,0);lcd_putsf("INPUT
                CARD6:");lcd_gotoxy(0,1);

```

```

sprintf(text,"%c%c%c%c%c",data[0],data[1],data
[2],data[3],data[4]);}
    else if(j==6)
        {tanda=key;lcd_gotoxy(0,0);
lcd_putsf("DOOR
IN(*)/OUT(#)");lcd_gotoxy(0,1);

sprintf(text,"%c%c%c%c%c%c",data[0],data[1],
data[2],data[3],data[4],data[5]);}
    lcd_puts(text);
    delay_ms(200);
    if(key==247){j=j-1;}
        }
    idku=atol(data);
goto scan1;
//program
inputRFID=====
====
inputRFID:
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("INPUT RFID:");
    delay_ms(200);
    lcd_clear();
    j=0;
if(PINB==0xFA)goto isi;
    else goto inputRFID;
isi:
    if(PINB==0xF0){data[j]='0';j++;goto cek;}
    else if(PINB==0xF1){data[j]='1';j++;goto
cek;}
    else if(PINB==0xF2){data[j]='2';j++;goto
cek;}
    else if(PINB==0xF3){data[j]='3';j++;goto
cek;}
    else if(PINB==0xF4){data[j]='4';j++;goto
cek;}
    else if(PINB==0xF5){data[j]='5';j++;goto
cek;}

    else if(PINB==0xF6){data[j]='6';j++;goto
cek;}
    else if(PINB==0xF7){data[j]='7';j++;goto
cek;}
    else if(PINB==0xF8){data[j]='8';j++;goto
cek;}
    else if(PINB==0xF9){data[j]='9';j++;goto
cek;}
    else goto isi;
cek:
if(PINB==0xFA)goto isi;
    else if(j==6){idku=atol(data);goto pintu;}
    else goto cek;

pintu:
    lcd_clear();
    lcd_putsf("DOOR IN(*)/OUT(#)");
    delay_ms(100);
    key=keypad();
    if(key=='*'){tanda=key;goto scan1;}
    else if(key=='#'){tanda=key;goto scan1;}
    else goto pintu;
        goto scan1;

scan1:
    key=keypad();
    lcd_clear();
    lcd_gotoxy(0,1);
    lcd_putsf("A=Yes B=No");
    lcd_gotoxy(0,0);
    sprintf(text,"YOUR ID:%ld
%c",idku,tanda);
    if(key=='A') goto password;
    else if(key=='B') goto ulang;
    else
        lcd_puts(text);
        delay_ms(100);
        goto scan1;

//program input password
=====

```

```

password:
    {j=j-1;}
    }
    if(set==1)goto ubah1;
    else if(set==2)goto ubah2;
    else
        pwku=atol(data);
    for(i=0;i<6;i++)
        { if(idrom[i]==idku &&
pwrom[i]==pwku){ok=1;goto scan2;}
        if(idrom[i]==idku && pwrom[i]!=pwku)
            { lcd_clear();
            lcd_gotoxy(0,0);
            lcd_putsf("RETYPE ID");
            lcd_gotoxy(0,0);
            lcd_putsf("RETYPE PASSWORD");
            delay_ms(3000);goto ulang;
            }
            secur++;PORTD.5=1;
            lcd_clear();
            lcd_gotoxy(0,0);
            lcd_putsf("INVALID ID !!!!!");
            delay_ms(2000);PORTD.5=0;
            goto kirim;

scan2:
    secur=0;
    key=keypad();
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("A=ENTER D=BACK");
    lcd_gotoxy(0,1);
    lcd_putsf("B=SET PASSWORD");
    if(key=='A')goto kirim;
    else if(key=='B')goto set;
    else if(key=='D') goto ulang;
    else
        delay_ms(200);
        goto scan2;
//program kirim ke
serial=====
kirim:

password:
    {j=j-1;}

lcd_clear();
lcd_gotoxy(0,1);
lcd_putsf("PASSWORD:");
delay_ms(500);
for(j=0;j<6;j++)
{
key=keypad();
data[j]=key;
lcd_gotoxy(0,1);
lcd_clear();
    if(j==0)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD1:");}
    else if(j==1)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD2:##");}
}
    else if(j==2)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD3:###");}
};}
    else if(j==3)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD4:###");}
};}
    else if(j==4)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD5:###");}
};}
    else if(j==5)

{lcd_gotoxy(0,1);sprintf(text,"PASSWORD6:###");}
};}

    lcd_puts(text);
    delay_ms(200);

    if(key==247)

```

```

for(j=0;j<2;j++)
{scanf("%c",&idkirim[j]);}

    lcd_clear();
    if(idkirim[0]=='1'&& idkirim[1]=='2')
    {
if(ok==1){PORTD.7=1;delay_ms(2000);PORTD
.7=0;}
    lcd_gotoxy(0,1);
    lcd_putsf("LOADING...");
    delay_ms(2000);
    printf("%c%c%ld%c",idkirim[0],idkirim[1],
idku,tanda);
        goto ulang;
    }
    else

lcd_clear();lcd_gotoxy(0,1);lcd_putsf("LOADIN
G...");
    delay_ms(200);goto kirim;

//program set
password=====
==
set:
    set=1;
    lcd_clear();lcd_gotoxy(0,1);
    lcd_putsf("NOW SET PASSWORD");
    delay_ms(2000);
    goto password;
ubah1:
    set=2;
    pwku1=atol(data);
    lcd_clear();lcd_gotoxy(0,1);
    lcd_putsf("CONFIRM PASSWORD");
    delay_ms(2000);
    goto password;
ubah2:

    pwku2=atol(data);
    if(pwku1==pwku2)
    {
        pwrom[i]=atol(data);
        lcd_clear();lcd_gotoxy(0,1);
        lcd_putsf("PASSWORD CHANGE");
        PIND.7=1;
        delay_ms(2000);
        goto ulang;}
    else if(pwku1!=pwku2){
        set=1;
        lcd_clear();
        lcd_putsf("RETYPE PASSWORD");
        delay_ms(2000);
        goto password; }
//=====
=====
    };
}

unsigned char keypad()
{
    PORTA=0b11111110;
    if(PINA.4==0)return('1');
    if(PINA.5==0)return('2');
    if(PINA.6==0)return('3');
    if(PINA.7==0)return('A');
//=====
    PORTA=0b11111101;
    if(PINA.4==0)return('4');
    if(PINA.5==0)return('5');
    if(PINA.6==0)return('6');
    if(PINA.7==0)return('B');
//=====
    PORTA=0b11111011;
    if(PINA.4==0)return('7');
    if(PINA.5==0)return('8');
    if(PINA.6==0)return('9');
    if(PINA.7==0)return('C');
//=====
    PORTA=0b11110111;

```

```
if(PINA.4==0)return('*');
if(PINA.5==0)return('0');
if(PINA.6==0)return('#');
if(PINA.7==0)return('D');
//=====
}
```


PROGRAM SCAN RFID
PENGONTROL MIKRO ATMEGA16

/*

 *****/

This program was produced by the
 CodeWizardAVR V1.25.3 Standard
 Automatic Program Generator
 © Copyright 1998-2007 Pavel Haiduc, HP
 InfoTech s.r.l.
 http://www.hpinfotech.com
 Project :
 Version :
 Date : 9/12/2009
 Author : F4CG
 Company : F4CG
 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>

// Alphanumeric LCD Module functions
#asm
.equ __lcd_port=0x15 ;PORTC
#endasm
#include <lcd.h>
#include <delay.h>
#include <stdio.h>
unsigned int j;
char rf[6];
#define RXB8 1
#define TXB8 0
#define UPE 2
```

```
#define OVR 3
#define FE 4
#define UDRE 5
#define RXC 7
// 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=Out Func6=Out Func5=Out Func4=Out
Func3=Out Func2=Out Func1=Out Func0=Out
// State7=1 State6=1 State5=1 State4=1 State3=1
State2=1 State1=1 State0=1
PORTB=0xFF;
DDRB=0xFF;

// 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=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=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=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
// 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=0x98;
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;

// LCD module initialization
lcd_init(16);

// Global enable interrupts
#asm("sei")

while (1)
{
    // Place your code here

```

```

scan:
    PORTB=0xFF;
for(j=0;j<14;j++)
{scanf("%c",&rf[j]); }
    for(j=0;j<6;j++)
    {lcd_clear();
    PORTB=0xFA;
    delay_ms(300);
if(rf[j]==48)
    { PORTB=0xF0; delay_ms(300); }
if(rf[j]==49)
    { PORTB=0xF1; delay_ms(300); }
if(rf[j]==50)
    { PORTB=0xF2; delay_ms(300); }
if(rf[j]==51)
    {PORTB=0xF3; delay_ms(300); }
if(rf[j]==52)
    {PORTB=0xF4; delay_ms(300); }
if(rf[j]==53)
    {PORTB=0xF5;delay_ms(300); }
if(rf[j]==54)
    {PORTB=0xF6; delay_ms(300); }
if(rf[j]==55)
    { PORTB=0xF7; delay_ms(300); }
if(rf[j]==56)
    { PORTB=0xF8; delay_ms(300); }
if(rf[j]==57)
    { PORTB=0xF9;delay_ms(300); }
} goto scan;

```

PROGRAM VISUAL BASIC

```
Sub proses(nomesin)
hasil = Label7.Caption
today = Now
    Label15.Caption = today
    Label13.Caption = Left(hasil, 2)
    Label10.Caption = Mid(hasil, 3, 6)
    tanda = Right(hasil, 1)
Open "d:\idrom.ABC" For Input As #1
ada = 0
    Input #1, datanya
Do While (Not EOF(1))
    If datanya = Label13.Caption +
Label10.Caption Then
        Label8.Caption = "terdaftar "
        ada = 1
    End If
Loop
Close #1
    If ada = 0 Then
        Label8.Caption = "tidak dikenal"
    End If
    masuk = "*"
    If masuk = tanda Then
        Label18.Caption = "masuk "
    End If
    keluar = "#"
    If keluar = tanda Then
        Label18.Caption = "keluar"
    End If
    hsl = (Label13.Caption + " " +
Label10.Caption + " " + Label15.Caption
+ " " + Label8.Caption + " " +
Label18.Caption)
    Open "d:\id.ABC" For Append As #2
    Print #2, hsl
    Close #2
List1.AddItem (hsl)
End Sub
```

```
Private Sub Command1_Click()
    Open "d:\id.ABC" For Input As #1
    List1.Clear
Do While (Not EOF(1))
    Line Input #1, idnya
    List1.AddItem (idnya)
Loop
Close #1
End Sub
```

```
Private Sub Command2_Click()
List1.Clear
End Sub
```

```
Private Sub Command3_Click()
End
End Sub
```

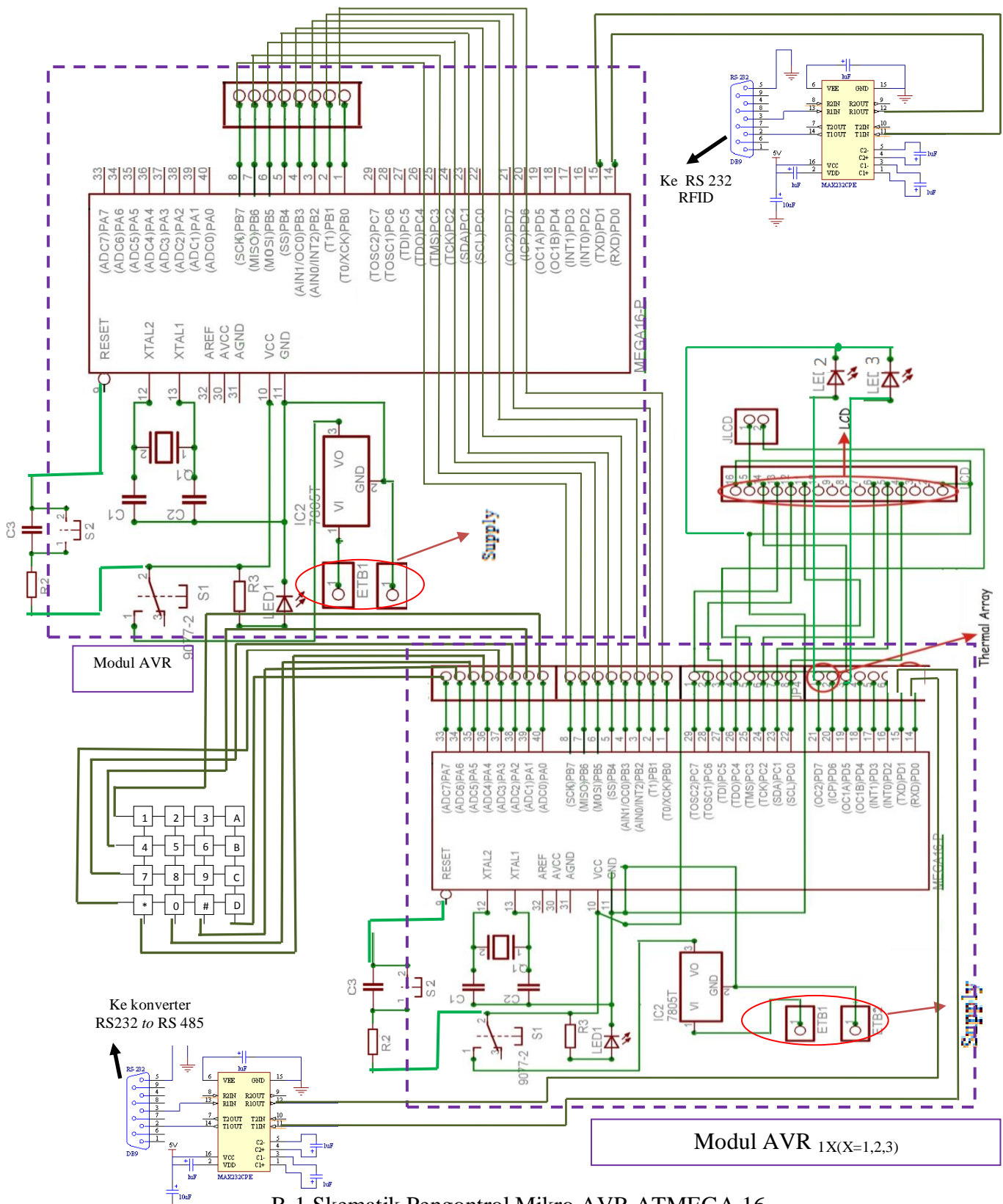
```
Private Sub Form_Load()
MSComm1.CommPort = 1
MSComm1.Settings = "9600,N,8,1"
MSComm1.InputLen = 0
MSComm1.PortOpen = True
End Sub
```

```
Private Sub Timer1_Timer()
today = Now
Label9.Caption = today
MSComm1.Output = "11"
hasil1 = MSComm1.Input
If Len(hasil1) > 0 Then
    Label7.Caption = hasil1
    nomor = Left(Label7.Caption, 2)
If Len(hasil1) > 0 And nomor = "11" Then
    Call proses("11")
End If
If Len(hasil1) > 0 And nomor = "12" Then
    Call proses("12")
End If
If Len(hasil1) > 0 And nomor = "13" Then
```

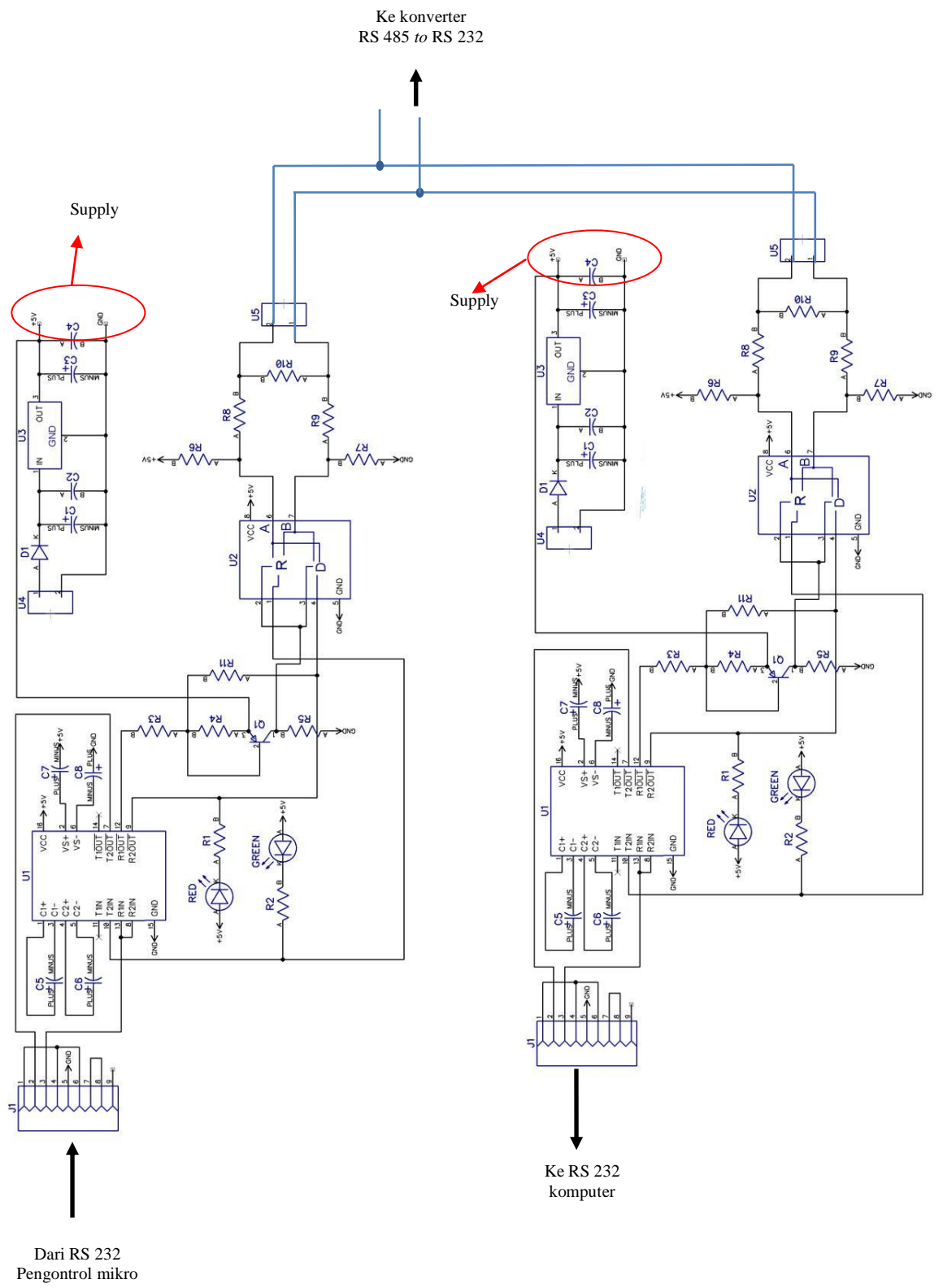
```
    Call proses("13")
  End If
End If
MSComm1.Output = "12"
hasil1 = MSComm1.Input

MSComm1.Output = "13"
hasil1 = MSComm1.Input
End Sub
```

LAMPIRAN B
SKEMATIK

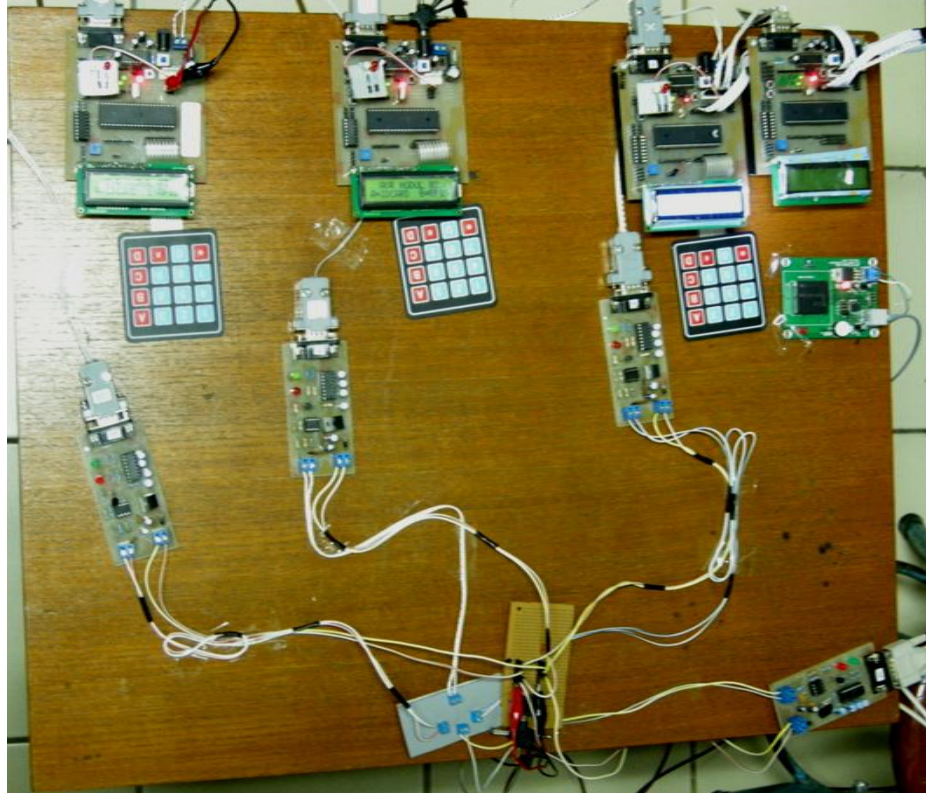


B-1 Skematik Pengontrol Mikro AVR ATMEGA 16

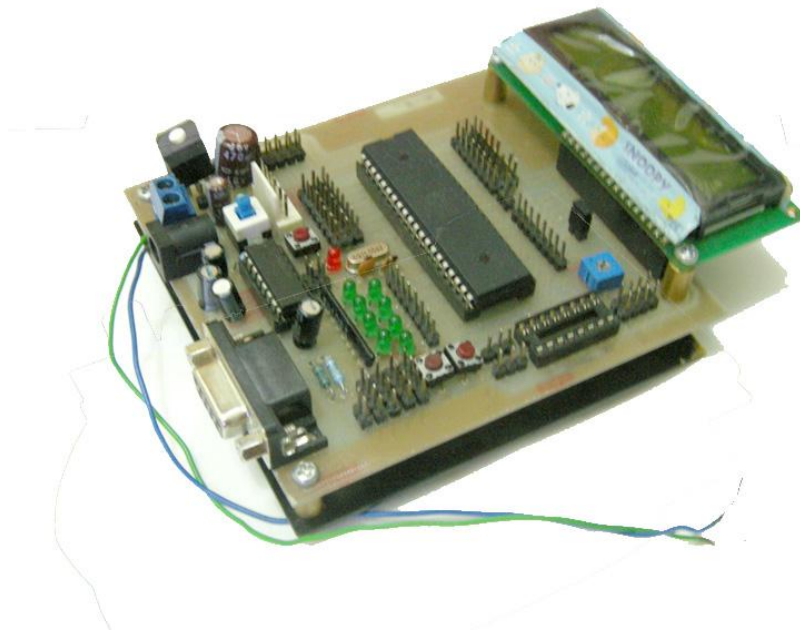


B-2 Skematik Konverter RS 232 ke RS 485 dan Sebaliknya

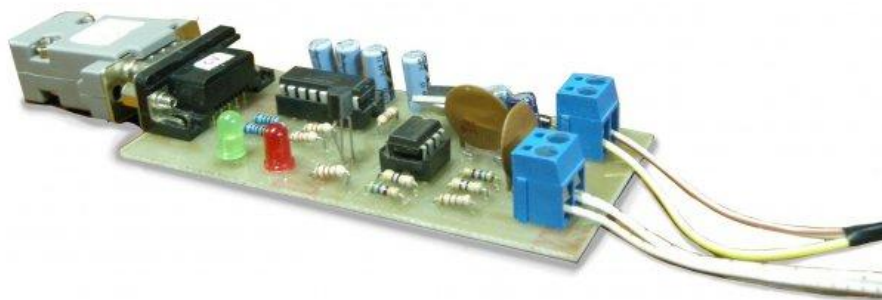
LAMPIRAN C
FOTO ALAT



C-1 Foto Sistem Akuisisi Data



C-2 Foto Pengontrol Mikro AVR ATMEGA16



C-3 Foto Konverter RS 232 ke RS 485 dan Sebaliknya

LAMPIRAN D
DATA SHEET