

# **LAMPIRAN**

## **Listing Program Pada Mikrokontroler**

```
*****
```

This program was produced by the  
CodeWizardAVR V2.05.3 Standard  
Automatic Program Generator  
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Project : Laporan Akhir  
Date : 02-Jul-2016  
Author : Recky Ardiansyah  
Company : Gimbal 017

Chip type : ATmega16  
Program type : Application  
AVR Core Clock frequency : 11.059200 MHz  
Memory model : Small  
External RAM size : 0  
Data Stack size : 128

```
******/
```

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

// Declare your global variables here
#include <stdio.h>
unsigned char a;

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=0xFF;

// 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
// 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=0xA1;  
TCCR1B=0x0D;  
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: 115200  
UCSRA=0x00;  
UCSRB=0x18;  
UCSRC=0x86;
```

```
UBRRH=0x00;
UBRRL=0x05;

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

// ADC initialization
// ADC disabled
ADCSRA=0x00;

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

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

while (1)
{
    a=getchar();
    if (a=='C')
        OCR1A=255;
        OCR1B=255;
        ulang:
    if (PINC.0 == 1)
    {
        PORTA.0=1;
        PORTA.1=0;
        delay_ms(500);
        printf("20");
        delay_ms(100);
        PORTA.0=0;
        PORTA.1=0;
        delay_ms(2000);
        goto ulang;
}
```

```
}

else if (PINC.1 == 1)
{
    PORTA.0=0;
    PORTA.1=1;
    delay_ms(500);
    printf("-20");
    delay_ms(100);
    PORTA.0=0;
    PORTA.1=0;
    delay_ms(2000);
    goto ulang;
}

else if (PINC.2 == 1)
{
    PORTA.2=1;
    PORTA.3=0;
    delay_ms(5000);
    PORTA.2=0;
    PORTA.3=0;
    goto ulang;
}

else if (PINC.3 == 1)
{
    PORTA.2=0;
    PORTA.3=1;
    delay_ms(500);
    PORTA.2=0;
    PORTA.3=0;
    goto ulang;
}

else
{
    goto ulang;
}
```

```
if (a=='S')
{
    OCR1A = 220;
    OCR1B = 220;
    ulang1:

    if (PINC.0 == 1)
    {
        PORTA.0=1;
        PORTA.1=0;
        delay_ms(500);
        printf("10");
        delay_ms(100);
        PORTA.0=0;
        PORTA.1=0;
        delay_ms(2000);
        goto ulang1;

    }
    else if (PINC.1 == 1)
    {
        PORTA.0=0;
        PORTA.1=1;
        delay_ms(500);
        printf("-10");
        delay_ms(100);
        PORTA.0=0;
        PORTA.1=0;
        delay_ms(2000);
        goto ulang1;
    }

    else if (PINC.2 == 1)
    {
        PORTA.2=1;
        PORTA.3=0;
        delay_ms(5000);
        PORTA.2=0;
```

```

PORTA.3=0;
goto ulang1;
}
else if (PIN.C.3 == 1)
{
    PORTA.2=0;
    PORTA.3=1;
    delay_ms(500);
    PORTA.2=0;
    PORTA.3=0;
    goto ulang1;
}

else
{
    goto ulang1;
}
}
if (a=='L')
{
    OCR1A = 180;
    OCR1B = 180;
    ulang2:

if (PIN.C.0 == 1)
{
    PORTA.0=1;
    PORTA.1=0;
    delay_ms(1000);
    printf("5");
    delay_ms(100);
    PORTA.0=0;
    PORTA.1=0;
    delay_ms(2000);
    goto ulang2;

}
else if (PIN.C.1 == 1)
{

```

```
PORTA.0=0;
PORTA.1=1;
delay_ms(2000);
printf("-5");
delay_ms(100);
PORTA.0=0;
PORTA.1=0;
delay_ms(2000);
goto ulang2;
}
```

```
else if (PINC.2 == 1)
{
    PORTA.2=1;
    PORTA.3=0;
    delay_ms(5000);
    PORTA.2=0;
    PORTA.3=0;
    goto ulang2;
}
else if (PINC.3 == 1)
{
    PORTA.2=0;
    PORTA.3=1;
    delay_ms(500);
    PORTA.2=0;
    PORTA.3=0;
    goto ulang2;
}

else
{
    goto ulang2;
}
}
```

## Listing Program Aplikasi Realtime Sudut Putaran

### Form 1

```
Imports Emgu.CV
Imports Emgu.CV.Util
Imports Emgu.CV.Structure
Imports Emgu.CV.CvEnum
Public Class Form1
    Dim capturez As Capture = New Capture
    Private Sub Timer1_Tick(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Timer1.Tick
        Dim imagez As Image(Of Bgr, Byte) =
capturez.QueryFrame
        Dim imagez2 As Image(Of Bgr, Byte) =
capturez.RetrieveBgrFrame
        Dim imagez3 As Image(Of Bgr, Byte) =
imagez2.Canny(New Bgr(0, 0, 0), New Bgr(0, 0, 0))
        Dim imagez5 As Image(Of Gray, Byte) =
capturez.RetrieveGrayFrame
        Dim imagez7 As Image(Of Gray, Byte) =
imagez5.Canny(New Gray(150), New Gray(60))
        Dim circlez()() As CircleF =
imagez7.HoughCircles(New Gray(50), New
Gray(NumericUpDown1.Value), 1, 60, 3, 300)
        If circlez(0).Length <> 0 Then 'Put not equals here,
youtube doesn't allow the less and greater than symbols in
description.
            For i = 0 To circlez(0).Length - 1
                imagez7.Draw(circlez(0)(i), New Gray(255), 3)
            TextBox1.Text = circlez(0)(i).Center.X.ToString
            TextBox2.Text = circlez(0)(i).Center.Y.ToString
            TextBox3.Text = circlez(0)(i).Radius.ToString
            TextBox4.Text = circlez(0)(i).Area.ToString
            Next
        End If
        PictureBox1.Image = imagez7.ToBitmap
        PictureBox2.Image = imagez.ToBitmap
        PictureBox3.Image = imagez3.ToBitmap
    End Sub
    Private Sub Form1_Load(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles MyBase.Load
    End Sub
End Class
```

## Form 2

```
Imports System.IO.Ports
Public Class Form2
    Dim myPort As Array 'COM Port yang terdeteksi pada
    sistem akan disimpan disini
    Dim TextBox2Result As Object
    Delegate Sub SetTextCallback(ByVal [text] As String)
    Private Sub Form2_Load(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles MyBase.Load
        'Cek semua com port yang memungkinkan
        myPort = IO.Ports.SerialPort.GetPortNames()
        'Nilai Baud Rate yang bisa digunakan
        ComboBox2.Items.Add(9600)
        ComboBox2.Items.Add(19200)
        ComboBox2.Items.Add(38400)
        ComboBox2.Items.Add(57600)
        ComboBox2.Items.Add(115200)
        For i = 0 To UBound(myPort)
            ComboBox1.Items.Add(myPort(i))
        Next
        'Atur Com Port pada Port yang pertama terdeteksi
        ComboBox1.Text = ComboBox1.Items.Item(0)
        'Atur Baud Rate pada Baud yang pertama terdeteksi
        ComboBox2.Text = ComboBox2.Items.Item(0)
        Button1.Enabled = True
    'Inisialisasi tombol
        Button2.Enabled = False
        Button3.Enabled = False
    End Sub
    Private Sub SerialPort1_DataReceived(ByVal
    sender As Object, ByVal e As
    System.IO.Ports.SerialDataReceivedEventArgs) Handles
    SerialPort1.DataReceived
        ReceivedText(SerialPort1.ReadExisting()) 'Automatically
        called every time a data is received at the serialPort
    End Sub
    Private Sub ReceivedText(ByVal [text] As String)
        'compares the ID of the creating Thread to the ID of
        the calling Thread
        If Me.TextBox3.InvokeRequired Then
            Dim x As New SetTextCallback(AddressOf ReceivedText)
            Me.Invoke(x, New Object() {[text]}) Else
            Me.TextBox3.Text &= [text] End If
        End Sub
        Private Sub Button1_Click(ByVal sender As System.Object,
        ByVal e As System.EventArgs) Handles Button1.Click
```

```

        SerialPort1.PortName = ComboBox1.Text
        SerialPort1.BaudRate = ComboBox2.Text
        SerialPort1.Open()
        Button1.Enabled = False
        Button2.Enabled = True
        Button3.Enabled = True
        Form5.Show()
    End Sub

    Private Sub Button2_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button2.Click
        SerialPort1.Close()
        Button1.Enabled = True
        Button2.Enabled = False
        Button3.Enabled = False
    End Sub
    Private Sub Button3_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Button3.Click
        SerialPort1.Write(TextBox1.Text)
    End Sub
    Private Sub TextBox1_TextChanged(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
TextBox1.TextChanged
        If TextBox1.Text = "C" Then
            SerialPort1.Write(TextBox1.Text)
            MsgBox("Terkirim Port Serial Cepat")
        ElseIf TextBox1.Text = "S" Then
            SerialPort1.Write(TextBox1.Text)
            MsgBox("Terkirim Port Serial Sedang")
        ElseIf TextBox1.Text = "L" Then
            SerialPort1.Write(TextBox1.Text)
            MsgBox("Terkirim Port Serial Lambat")
        ElseIf TextBox1.Text = "x" Then
            SerialPort1.Write(TextBox1.Text)
            MsgBox("Terkirim Motor Bawah")
        ElseIf TextBox1.Text = "y" Then
            SerialPort1.Write(TextBox1.Text)
            MsgBox("Terkirim Motor Atas")
        ElseIf TextBox1.Text = "" Then
            'MsgBox("Port Refresh")
        End If
    End Sub

    Private Sub keluar()
    End

```

```

End Sub

Private Function Buffer() As Byte()
    Throw New NotImplementedException
End Function

Private Function count() As Integer
    Throw New NotImplementedException
End Function

Private Sub TextBox3_TextChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles TextBox3.TextChanged
    If TextBox3.TextLength >= 2 Then
        ListBox1.Items.Add(TextBox3.Text)
        Dim sum As Double
        For x As Double = 0 To ListBox1.Items.Count - 1
            sum += CDbl(ListBox1.Items(x))
        Next
        TextBox2.Text = sum.ToString
        ListBox1.ClearSelected()
    ElseIf TextBox2.Text = Val(Me.TextBox2.Text) - 10
    Then
        'If TextBox3.TextLength = 3 Then
        'ListBox2.Items.Add(TextBox3.Text)
        'Dim sum As Double
        'For x As Double = 0 To ListBox1.Items.Count - 1
        'sum -= CDbl(ListBox1.Items(x))
        'Next
        'TextBox3.Text = sum.ToString
        'ListBox1.ClearSelected()
        'TextBox3.Text = ""
    End If
End Sub

Private Sub TextBox2_TextChanged(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles TextBox2.TextChanged
    Form5.TextBoxvalue.Text = TextBox2.Text
    If TextBox3.TextLength >= 2 Then
        TextBox3.Text = ""
    End If
End Sub

End Class

```

### Form 3

```
Imports Emgu.CV
Imports Emgu.CV.Util
Imports Emgu.CV.Structure
Public Class Form3
    Dim capturez8 As Capture = New Capture
    Private Sub Timer1_Tick(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Timer1.Tick
        Dim imagez0 As Image(Of Gray, Byte) =
capturez8.RetrieveGrayFrame
        Dim imagez1 As Image(Of Bgr, Byte) =
capturez8.RetrieveBgrFrame
        Dim imagez2 As Image(Of Gray, Byte) =
imagez0.Canny(New Gray(150), New Gray(60))
        Dim RhoRes As Double = 2
        Dim Threshold As Double = 100
        Dim MinLineWidth As Double = 3
        Dim linegap As Integer = 3
        Dim ThetaRes As Double = Math.PI / 180
        Dim Linez()() As LineSegment2D =
imagez2.HoughLinesBinary(RhoRes, ThetaRes, Threshold,
MinLineWidth, linegap)
        If Linez(0).Length >= 0 Then 'Greater than or equal to
            For i = 0 To Linez(0).Length - 1
                If Linez(0)(i).Length >= 10 And
Linez(0)(i).Length <= 30 Then 'Greater than and less than or
equal to
                    imagez1.Draw(Linez(0)(i), New Bgr(0, 255, 0), 3)
                End If
                If Linez(0)(i).Length >= 30 And
Linez(0)(i).Length <= 60 Then 'Greater than and less than or
equal to
                    imagez1.Draw(Linez(0)(i), New Bgr(255, 0, 0), 3)
                End If
                If Linez(0)(i).Length >= 60 Then
                    imagez1.Draw(Linez(0)(i), New Bgr(0, 0, 255), 3)
                End If
            Next
        End If
        PictureBox1.Image = imagez1.ToBitmap
    End Sub
    Private Sub Form3_Load(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles MyBase.Load
    End Sub
End Class
```

## Form 4

```
Imports Emgu.CV
Imports Emgu.CV.Util
Imports Emgu.CV.Structure
Imports Emgu.CV.CvEnum
Imports Emgu.CV.UI
Imports System.Windows.Forms.DataVisualization.Charting
```

```
Public Class Form5
```

```
    Private Sub Form5_Load(sender As System.Object, e As System.EventArgs) Handles MyBase.Load
        Timerchart.Interval = 2000
        Timerchart.Start()

        Chart1.Series(0).Name = "Sudut Putaran"
        Chart1.Series(0).BorderWidth = 4

        Chart1.ChartAreas(0).AxisX.LabelStyle.Format =
        "mm:ss"
        Chart1.ChartAreas(0).AxisX.Interval = 1
        Chart1.ChartAreas(0).AxisX.IsStartedFromZero = True

        For Each cs As Series In Chart1.Series
            cs.ChartType = SeriesChartType.FastLine
            cs.XValueType = ChartValueType.Time
            cs.IsXValueIndexed = True
        Next

    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles Buttonkanan.Click
        Form2.TextBox1.Text = "C"
        'Form2.SerialPort1.Write = "C"
    End Sub
```

```

    Private Sub Buttonkiri_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Buttonkiri.Click
    Form2.TextBox1.Text = "S"
    'Form2.SerialPort1.Write = "S"
End Sub

    Private Sub Buttonmati_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Buttonmati.Click
    Form2.TextBox1.Text = "L"
    'Form2.SerialPort1.Write = "L"
End Sub

    Private Sub Timerchart_Tick(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Timerchart.Tick
    If Chart1.Series(0).Points.Count = 100 Then
        Chart1.Series(0).Points.RemoveAt(0)
    End If
    Dim xTime As Double = Now.ToOADate
    Chart1.Series("Sudut
Putaran").Points.AddXY(DateTime.FromOADate(xTime),
TextBoxvalue.Text)

End Sub

    Private Sub Button1_Click_1(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Button1.Click
    End
    Form2.Close()
End Sub

    Private Sub Button2_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Button2.Click
    Form2.TextBox1.Text = ""
    Form2.TextBox2.Text = ""
    TextBoxvalue.Text = ""
End Sub

```

```
    Private Sub Button3_Click(ByVal sender As System.Object,
ByVal e As System.EventArgs)
    Form2.TextBox1.Text = "y"
End Sub

    Private Sub Buttonmotorbawah_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs)
    Form2.TextBox1.Text = "x"
End Sub

    Private Sub TextBoxvalue_TextChanged(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
TextBoxvalue.TextChanged

    End Sub
End Class
```



KEMENTERIAN RISET, TEKNOLOGI DAN PERGURUAN TINGGI

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Pada hari ini ..... Rabu tanggal 29/6/2016 telah sepakat untuk melakukan konsultasi bimbingan Laporan Akhir.

Konsultasi bimbingan sekurang-kurangnya 1 (satu) kali dalam satu minggu. Pelaksanaan bimbingan pada setiap hari ..... Rabu..... Pukul ..... 8.30 tempat di Politeknik Negeri Sriwijaya

Demikianlah kesepakatan ini dibuat dengan penuh kesadaran guna kelancaran penyelesaian Laporan Akhir.

Palembang, 29 Jun 2016

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Pada hari ini Rabu tanggal 20/6/2016 telah sepakat untuk melakukan konsultasi bimbingan Laporan Akhir.

Konsultasi bimbingan sekurang-kurangnya 1 (satu) kali dalam satu minggu. Pelaksanaan bimbingan pada setiap hari Senin, Pukul 10.30 tempat di Politeknik Negeri Sriwijaya

Demikianlah kesepakatan ini dibuat dengan penuh kesadaran guna kelancaran penyelesaian Laporan Akhir.

Palembang, 23 Jun 2016.

Pihak Pertama,

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### LEMBAR KONSULTASI BIMBINGAN LAPORAN AKHIR

Nama Mahasiswa : Recky Ardiansyah

NIM : 0613 3070 1280

Jurusan : Teknik Komputer

Judul Laporan : Rancang Bangun Light Stand Boom Arm Pada lighting  
Studio Menggunakan Remote Control Berbasis  
Mikrokontroller Atmega16 Dengan Metode PID

Pembimbing I : Azwardi Samaulah, S.T., M.T.

No	Tanggal Konsultasi	Keterangan	Paraf Pembimbing
①	29/6/2016	Perbaiki yg sumir Ayat ke yg berdua	
②	17/7/2016		
③	12/7/2016	Ranci Bab II	
④	19/7/2016	Lanjut Bab III	
⑤	21/7/2016	Ranci Bab 3, 4	
⑥	9/8/2016	Ranci Bab 4	
⑦	10/8/2016	Acc Bab IV	

Mengetahui,  
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Judul Laporan : Rancang Bangun Sistem Kontrol Pada Light Stand Boom  
                  Arm Menggunakan Remote Control Berbasis  
                  Mikrokontroler Atmega16  
Pembimbing II : Meiyi Darlies, S.Kom., M.Kom.

No	Tanggal Konsultasi	Keterangan	Paraf Pembimbing
①	15/6/2016	Perbaiki latar Belakang	R
②	17/6/2016	Perbaiki tajuk, Acc Bab I	R
③	23/6/2016		R
④	27/6/2016	Revise Bab 2	R
⑤	11/7/2016	Acc Bab 2, Langut Bab 3	R
⑥	14/7/2016		R
⑦	19/7/2016	Perbaiki Flowchart, gambar Penjabaran, keterangan gambar.	R
⑧	26/7/2016	Acc Bab 3, Perbaiki Penjabaran Acc Bab 4	R

No	Tanggal Konsultasi	Keterangan	Paraf Pembimbing
9.	27/7/2016	Parbaiki Bab V	
10.	29/7/2016	Parbaiki Saran	
11.	9/8/2016	Acc Bab V	

Mengetahui,  
Ketua Jurusan Teknik Komputer



**Ir. Ahmad Bahri Joni Malyan., M.Kom**  
NIP. 196007101991031001



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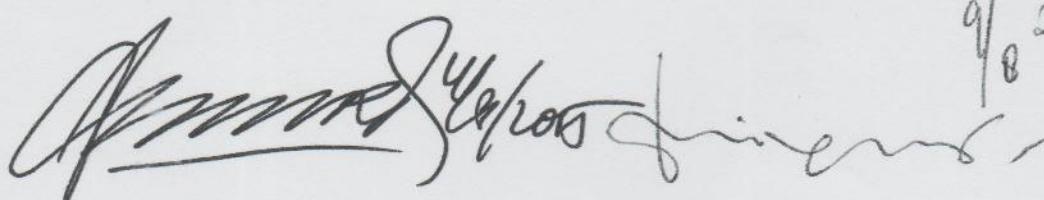
**REKOMENDASI UJIAN LAPORAN AKHIR (LA)**

Pembimbing Laporan Akhir memberikan rekomendasi kepada,

Nama : Recky Ardiansyah  
NIM : 0613 3070 1280  
Jurusan/Program Studi : TEKNIK KOMPUTER/DIII  
Judul Laporan : Rancang Bangun Light Stand Boom Arm  
Pada Lighting Studio Menggunakan Remote  
Control Berbasis Mikrokontroller Atmega 16

Mahasiswa tersebut telah memenuhi persyaratan dan dapat mengikuti Ujian Laporan Akhir (LA) pada Tahun Akademik 2016.

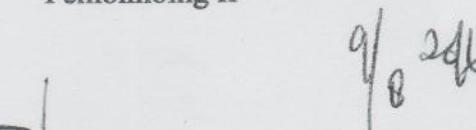
Pembimbing I



Azwardi Samaulah, ST., MT  
NIP.197005232005011004

Palembang, 9 Agustus 2016

Pembimbing II



9/8/2016

Meiyi Darlies, S.Kom., M.Kom  
NIP. 197805152006041003

No. Dok. : F-PBM-22

Tgl. Berlaku : 13 Desember 2010

No. Rev. : 00



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REVISI UJIAN LAPORAN AKHIR (LA)

Ruang : 03  
Dosen Pengaji : Ahyar Supani, S.T., M.T.  
Nama Mahasiswa : Recky Ardiansyah  
NIM : 0613 3070 1280  
Jurusan/Program Studi : Teknik Komputer  
Judul Laporan Akhir : Rancang Bangun Sistem Kontrol Pada Light Stand Boom Arm Menggunakan Remote Control Berbasis Mikrokontroler Atmega16

No	Uraian Revisi	Paraf
1.	Kalimat Judul	
2.	Rumusan Masalah	
3.	Tujuan	
4.	Data Bab 4 : Sudut, Pilihan Sudut, Putar	
5.	Kesimpulan	

Palembang, 12 Agustus 2016

Dosen Pengaji,

( Ahyar Supani, S.T., M.T. )



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## REVISI UJIAN LAPORAN AKHIR (LA)

Ruang : 3  
 Dosen Penguji : Meiyi Darlies, S.Kom., M.Kom.  
 Nama Mahasiswa : Becky Ardiansyah  
 NIM : 0613 3070 1280  
 Jurusan/Program Studi : Teknik Komputer  
 Judul Laporan Akhir : Rancang Bangun Light Stand Boom Arm Pada Lighting Studio  
 Menggunakan Remote Control Berbasis Mikrokontroler Atmega16

No	Uraian Revisi	Paraf

Palembang, 12 Agustus 2016

Dosen Penguji,

( Meiyi Darlies, S.kom, M.kom )

No. Dok. : F-PBM-22

Tgl. Berlaku : 13 Desember 2010

No. Rev. : 00



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### REVISI UJIAN LAPORAN AKHIR (LA)

Ruang : 03  
Dosen Penguji : M. Miftakul Amin, S.Kom., M.Eng.  
Nama Mahasiswa : Becky Ardiansyah  
NIM : 0613 3070 1280  
Jurusan/Program Studi : Teknik Komputer  
Judul Laporan Akhir : Rancang Bangun Sistem Kontrol Pada Light Stand Boom Arm  
Menggunakan Remote Control Berbasis Mikrokontroler Atmega16

No	Uraian Revisi	Paraf
1.	Perbaiki Flowchart	
2.		

Palembang, 12 Agustus 2016  
Dosen Penguji,

( M. Miftakul Amin, S.Kom., M.Eng. )



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PELAKSANAAN REVISI LAPORAN AKHIR

Mahasiswa berikut,

Ruang : 03  
Nama : Recky Ardiansyah  
NIM : 0613 3070 1280  
Jurusan/Program Studi : Teknik Komputer / D3 Teknik Komputer  
Judul Laporan Akhir : Rancang Bangun Sistem Kontrol Pada Light Stand Boom Arm Menggunakan Remote Control Berbasis Mikrokontroler Atmega16

No	Nama Pengaji	Revisi	Ket	Paraf Yang Mengesahkan	
				Pembimbing I	Pembimbing II
1	Ahyar Supani, S.T., M.T	Kalimat Judul, Rumusan Masalah, Tujuan, Data Bab 4, Kesimpulan	Acc		
2	Meiyi Darlies, S.Kom.,M.Kom	-	Acc		
3	M. Miftakhul Amin.,S.Kom., M.Eng	Perbaiki Flowchart	Acc		

Palembang, Agustus 2016

Ketua Jurusan,

Ir. Ahmad Bahri Joni Malyan, M.Kom  
NIP 196007101991031001

No. Dok. : F-PBM-24

Tgl. Berlaku : 13 Desember 2010

No. Rev. : 00



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BUKTI PENYERAHAN HASIL KARYA/RANCANG BANGUN

Pada hari ini ... Senin .... tanggal 15.... bulan ..... Agustus.... tahun ..2016.. telah diserahkan seperangkat karya/rancang bangun kepada Jurusan .... Teknik Komputer .... Program Studi .... Teknik Komputer .... di Politeknik Negeri Sriwijaya,

Nama Perangkat	Spesifikasi
Rancang Bangun Sistem Kontrol Pada Light Stand Boom Arm Menggunakan Remote Control Berbasis Mikrokontroler Atmega6	Light stand , Remote Control, Receiver, Sismik , Power L298N, Switch, Power Supply, motor Power window.

Hasil karya/rancang bangun dari,

Nama	NIM	Nama Pembimbing
Recky Ardiansyah	0613 3070 1280	Azwardi Samaulah ST, M.T Meiji Darties, S.Kom, M.Kom.

Yang menerima \*),

(M. Wahyudi, S.Kom  
NIP. 19600915201012001)

Palembang, 15 Agustus 2016

Yang menyerahkan \*\*),

(Recky Ardiansyah )  
NIM . 0613 3070 1280

Mengetahui,  
Ketua Jurusan/KPS,

(H.A. Syahri Joni Mardiyah, M.Kom  
NIP. 196009101991031001)

\*) pejabat Jurusan/PS yang ditunjuk (Kepala Lab./Bengkel atau Kepala Seksi)  
\*\*) perwakilan mahasiswa dari pembuat karya/rancang bangun.