

## LAMPIRAN A : LISTING PROGRAM

### 1. Form Utama (Cover)

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace watermark
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void
lowBitCodingToolStripMenuItem_Click(object sender,
EventArgs e)
        {
            this.Hide();
            Form2 fr = new Form2();
            fr.Show();
        }

        private void
leastSignificantBitToolStripMenuItem_Click(object sender,
EventArgs e)
        {
            this.Hide();
            Form3 fr = new Form3();
            fr.Show();
        }

        private void exitToolStripMenuItem_Click(object
sender, EventArgs e)
        {
```

```

        this.Close();
        Application.Exit();
    }

    private void aboutToolStripMenuItem_Click(object
sender, EventArgs e)
    {
        this.Hide();
        Form4 fr = new Form4();
        fr.Show();
    }

    private void helpToolStripMenuItem_Click(object
sender, EventArgs e)
    {
        this.Hide();
        Form5 fr = new Form5();
        fr.Show();
    }
}
}
}

```

## 2. Form Methodh

```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.IO;
using Microsoft.Office.Interop.Word;

using System.Media;
using WMPLib;
using MediaInfoNET;
using System.Diagnostics;

namespace watermark
{
    public partial class Form2 : Form

```

```

{
    public Form2()
    {
        InitializeComponent();
    }

    Stopwatch ss = new Stopwatch();

    private void timer1_Tick(object sender, EventArgs
e)
    {
        //Current time
        label36.Text =
Mplayer.Ctlcontrols.currentPositionString;
        //Remainig time
        double t =
Math.Floor(Mplayer.currentMedia.duration -
Mplayer.Ctlcontrols.currentPosition);
        label37.Text = t.ToString() + " Seconds
Remainig";
    }

    private void timer2_Tick(object sender, EventArgs
e)
    {
        //Current time
        label11.Text =
Mplayer2.Ctlcontrols.currentPositionString;
        //Remainig time
        double t =
Math.Floor(Mplayer2.currentMedia.duration -
Mplayer2.Ctlcontrols.currentPosition);
        label12.Text = t.ToString() + " Seconds
Remainig";
    }

    private void checkBox2_CheckedChanged(object
sender, EventArgs e)
    {
        Mplayer.settings.mute = checkBox2.Checked;
    }

    private void checkBox1_CheckedChanged(object
sender, EventArgs e)
    {

```

```

        Mplayer2.settings.mute = checkBox1.Checked;
    }

    private void timer3_Tick(object sender, EventArgs
e)
    {
        int hrs = ss.Elapsed.Hours, mins =
ss.Elapsed.Minutes, secs = ss.Elapsed.Seconds, milsecs =
ss.Elapsed.Milliseconds;
        label16.Text = hrs + ":";

        if (mins < 10)
            label16.Text += "0" + mins + ":";
        else
            label16.Text += mins + ":";

        if (secs < 10)
            label16.Text += "0" + secs + ":";
        else
            label16.Text += secs + ":";

        label16.Text += milsecs;

    }

    private void btn_play_Click_1(object sender,
EventArgs e)
    {
        Mplayer.close();
        timer2.Enabled = true;
        Mplayer2.URL = tPath2.Text;
        label42.Text = "Playing Now";
    }

    private void btn_stop_Click(object sender,
EventArgs e)
    {
        timer2.Enabled = false;
        Mplayer2.close();
        label42.Text = "Stop";
    }

    private void btn_reset_Click(object sender,
EventArgs e)
    {
        Mplayer2.close();
    }

```

```

        tPath2.Text = "";
        label7.Text = "";
        label8.Text = "";
        label9.Text = "";
        label10.Text = "";
        label11.Text = "";
        label12.Text = "";
        label42.Text = "";
        richTextBox1.Text = "";
    }

    private void brw_audio_Click(object sender,
EventArgs e)
    {
        if (oDg.ShowDialog() == DialogResult.OK)
        {
            tPath2.Text = oDg.FileName;
            Mplayer.close();
            richTextBox1.Text = "";
            FileInfo yourfile = new
FileInfo(oDg.FileName);
            label9.Text = ((float)yourfile.Length /
1024).ToString() + " KB";
            //AudioTag menggunakanMediaInfoNET
            MediaFile audio1 = new
MediaFile(tPath2.Text);
            label7.Text = audio1.Name;
            label8.Text = audio1.General.Format;
            richTextBox1.Text += "File Name\t: " +
audio1.Name + '\n';
            richTextBox1.Text += "Format\t: " +
audio1.General.Format + '\n';
            richTextBox1.Text += "Duration\t: " +
audio1.General.DurationString + '\n';
            richTextBox1.Text += "Bit Rate\t: " +
audio1.General.Bitrate + " Kbps\n";
            if (audio1.Audio.Count > 0)
            {
                richTextBox1.Text += "Channels\t: " +
audio1.Audio[0].Channels.ToString() + '\n';
                richTextBox1.Text += "Sampling\t: " +
audio1.Audio[0].SamplingRate.ToString() + " Hz\n";
                richTextBox1.Text += "-----
-----Tag-----\n";
            }
        }
    }

```

```

        WMPLib.IWMPMedia m =
Mplayer2.newMedia(tPath2.Text);
        if (m != null)
        {
            //Durasi total
            label10.Text = m.durationString;
            //Item atribut dan info
            for (int i = 0; i < m.attributeCount;
i++)
                {
                    richTextBox1.Text +=
m.getAttributeName(i) + " = " +
m.getItemInfo(m.getAttributeName(i)) + '\n';
                }
        }
        else
        {
            tPath2.Text = "";
        }
    }

    private void brw_doc_Click_1(object sender,
EventArgs e)
    {
        OpenFileDialog oDg = new OpenFileDialog();
        oDg.Filter = "Word 1997-2003|*.doc|Word 2007-
2013|*.docx|Rich Text File|*.rtf|Open Document
Text|*.odt|Text File|*.txt|All Files (*.*)|*.*";
        oDg.Title = "";

        if (oDg.ShowDialog() == DialogResult.OK)
        {
            textBox3.Text = oDg.FileName;
            //alamatLabel.Text =
openFileDialog1.FileName;
            //buat directive imports
            Microsoft.Office.Interop.Word.Application
wordApp = new
Microsoft.Office.Interop.Word.Application();
            //buat filename dan drive document yang
akan di buka
            object fileNameO = @oDg.FileName;
            //buat object boolean
            object objFalse = false;
            object objTrue = true;

```

```

        //buat object
        object missing =
System.Reflection.Missing.Value;
        object emptyData = string.Empty;

        //gunakan try untuk code yang akan di
eksekusi
        try
        {
            //buat directive
            Microsoft.Office.Interop.Word.Document
aDoc = wordApp.Documents.Open(ref fileName0, ref
objFalse, ref objTrue,
                ref objFalse, ref missing, ref missing,
ref missing, ref missing, ref missing, ref missing, ref
missing, ref objTrue,
                ref missing, ref missing, ref missing,
ref missing);

            //copy keseluruhan isi doc

aDoc.ActiveWindow.Selection.WholeStory();
            aDoc.ActiveWindow.Selection.Copy();
            //buat IDataObject untuk menyimpan data
IDataObject data =
System.Windows.Forms.Clipboard.GetDataObject();
            String filetext =
data.GetData(System.Windows.Forms.DataFormats.Text).ToStr
ing();

System.Windows.Forms.Clipboard.SetDataObject(string.Empty
);

            //load data ke dalam richtextbox1
            richTextBox2.Text = filetext;
        }
        //untuk handle kesalahan yang ada
catch (Exception err)
        {
            MessageBox.Show(err.Message);
        }
        //bila code sukses maka finally akan di
jalankan
        finally
        {
            MessageBox.Show("Anda telah berhasil
load document", oDg.FileName);

```

```

        wordApp.Quit();
    }
}

private void btn_watermark_Click_1(object sender,
EventArgs e)
{
    if (textBox2.Text != "ilkom")
    {
        MessageBox.Show("Password Salah");
    }
    else
    {
        //hitung waktulbc
        DateTime awal = DateTime.Now;

        //Ubah audio ke bytes
        byte[] bytes =
System.IO.File.ReadAllBytes(tPath2.Text);

        //Ubah pesan ke binary
        string binpesan = "";
        string hex = richTextBox2.Text;
        int panjangPesan = 0;
        foreach (byte b in hex)
        {
            binpesan +=
Convert.ToString(hex[panjangPesan], 2).PadLeft(8, '0');
            panjangPesan++;
        }
        panjangPesan *= 8;
        //Pola LBC
        textBox1.Text = "";
        var rng = new Random();
        var values = Enumerable.Range(1,
4).OrderBy(x => rng.Next()).ToArray();
        int first = values[0];
        int second = values[1];
        int third = values[2];
        int fourth = values[3];
        textBox1.Text = first.ToString() +
second.ToString() + third.ToString() + fourth.ToString();
        string pola = textBox1.Text;
    }
}

```



```

//LBC
int i = 0, j = 0;
try
{
    string pesan = binpesan;

    foreach (byte b in bytes)
    {
        if (j < 2112) // header
        {
            j++;
            continue;
        }

        if (pesan[i] == '1')
        {
            if (pola[i % 4] == '1')
                bytes[j] = (byte)(b | 1);
            else if (pola[i % 4] == '2')
                bytes[j] = (byte)(b | 2);
            else if (pola[i % 4] == '3')
                bytes[j] = (byte)(b | 4);
            else
                bytes[j] = (byte)(b | 8);
        }
        else
        {
            if (pola[i % 4] == '1')
                bytes[j] = (byte)(b & 254);
            else if (pola[i % 4] == '2')
                bytes[j] = (byte)(b & 253);
            else if (pola[i % 4] == '3')
                bytes[j] = (byte)(b & 251);
            else
                bytes[j] = (byte)(b & 247);
        }
        i++; j++;
        if (i >= panjangPesan)
            break;
    }
}
catch (Exception q)
{
    //MessageBox.Show(q.Message.ToString());
}

```

```

        finally
        {
            //akhir proses
            DateTime akhir = DateTime.Now;
            TimeSpan elapsed =
akhir.Subtract(awal);
            labell16.Text =
elapsed.Hours.ToString("00") + ":" +
                elapsed.Minutes.ToString("00") +
":" + elapsed.Seconds.ToString("00") + "." +
elapsed.Milliseconds.ToString("000");

            //Save file hasil watermark
            sDg.Filter = "Windows Media
Audio|*.wma|All Files (*.*)|*.*";
            sDg.Title = "";
            if (sDg.ShowDialog() ==
DialogResult.OK)
            {

System.IO.File.WriteAllBytes(sDg.FileName, bytes);
                MessageBox.Show("Save File
success", sDg.FileName);

                SoundPlayer myPlayer = new
SoundPlayer(oDg.FileName);
                myPlayer.Stream = new
MemoryStream();

                //myPlayer.Play();
            }
            //Save Pola LBC
            sDg.Filter = "Text File|*.txt|All Files
(*.*)|*.*";
            sDg.Title = "";
            if (sDg.ShowDialog() ==
DialogResult.OK)
            {
                try
                {

System.IO.File.WriteAllText(sDg.FileName, textBox1.Text);
                }
                catch (IOException err)

```

```

        {
            MessageBox.Show(err.Message);
        }
        finally
        {
            MessageBox.Show("Anda telah
berhasil mem-publish pola LBC", sDg.FileName);
        }
    }
}

private void btn_reset2_Click_1(object sender,
EventArgs e)
{
    tPath2.Text = "";
    textBox3.Text = "";
    richTextBox2.Text = "";
    textBox2.Text = "";
    textBox1.Text = "";
    //label17.Text = "";
    label16.Text = "";
}

private void btn_close_Click_1(object sender,
EventArgs e)
{
    this.Dispose();
    Form fr = new Form1();
    fr.ShowDialog();
}

private void brw_audio2_Click(object sender,
EventArgs e)
{
    if (oDg.ShowDialog() == DialogResult.OK)
    {
        tPath.Text = oDg.FileName;
        Mplayer2.close();
        richTextBox4.Text = "";
        FileInfo yourfile = new
FileInfo(oDg.FileName);
        label34.Text = ((float)yourfile.Length /
1024).ToString() + " KB";
    }
}

```

```

        //AudioTag menggunakanMediaInfoNET
        MediaFile audio2 = new
MediaFile(tPath.Text);
        label33.Text = audio2.Name;
        label40.Text = audio2.General.Format;
        richTextBox4.Text += "File Name\t: " +
audio2.Name + '\n';
        richTextBox4.Text += "Format\t: " +
audio2.General.Format + '\n';
        richTextBox4.Text += "Duration\t: " +
audio2.General.DurationString + '\n';
        richTextBox4.Text += "Bit Rate\t: " +
audio2.General.Bitrate + " Kbps\n";
        if (audio2.Audio.Count > 0)
        {
            richTextBox4.Text += "Channels\t: " +
audio2.Audio[0].Channels.ToString() + '\n';
            richTextBox4.Text += "Sampling\t: " +
audio2.Audio[0].SamplingRate.ToString() + " Hz\n";
            richTextBox4.Text += "-----
-----Tag-----\n";
        }

        WMPLib.IWMPMedia m =
Mplayer.newMedia(tPath.Text);
        if (m != null)
        {
            //Durasi total
            label35.Text = m.durationString;
            //Item atribut dan info
            for (int i = 0; i < m.attributeCount;
i++)
            {
                richTextBox4.Text +=
m.getAttributeName(i) + " = " +
m.getItemInfo(m.getAttributeName(i)) + '\n';
            }
        }
        else
        {
            tPath.Text = "";
        }
    }
}

```

```

        private void brw_doc2_Click_1(object sender,
EventArgs e)
        {
            OpenFileDialog oDg = new OpenFileDialog();
            oDg.Filter = "Word 1997-2003|*.doc|Word 2007-
2013|*.docx|Rich Text File|*.rtf|Open Document
Text|*.odt|Text File|*.txt|All Files (*.*)|*.*";
            oDg.Title = "";

            if (oDg.ShowDialog() == DialogResult.OK)
            {
                textBox4.Text = oDg.FileName;
                //alamatLabel.Text =
openFileDialog1.FileName;
                //buat directive imports
                Microsoft.Office.Interop.Word.Application
wordApp = new
Microsoft.Office.Interop.Word.Application();
                //buat filename dan drive document yang
akan di buka
                object fileNameO = @oDg.FileName;
                //buat object boolean
                object objFalse = false;
                object objTrue = true;
                //buat object
                object missing =
System.Reflection.Missing.Value;
                object emptyData = string.Empty;

                //gunakan try untuk code yang akan di
eksekusi
                try
                {
                    //buat directive
                    Microsoft.Office.Interop.Word.Document
aDoc = wordApp.Documents.Open(ref fileNameO, ref
objFalse, ref objTrue,
                    ref objFalse, ref missing, ref missing,
ref missing, ref missing, ref missing, ref missing, ref
missing, ref objTrue,
                    ref missing, ref missing, ref missing,
ref missing);

                    //copy keseluruhan isi doc

aDoc.ActiveWindow.Selection.WholeStory();

```

```

        aDoc.ActiveWindow.Selection.Copy();
        //buat IDataObject untuk menyimpan data
        IDataObject data =
System.Windows.Forms.Clipboard.GetDataObject();
        String filetext =
data.GetData(System.Windows.Forms.DataFormats.Text).ToString();

System.Windows.Forms.Clipboard.SetDataObject(string.Empty
);
        //load data ke dalam richtextbox1
        richTextBox6.Text = filetext;
    }
    //untuk handle kesalahan yang ada
    catch (Exception err)
    {
        MessageBox.Show(err.Message);
    }
    //bila code sukses maka finally akan di
jalankan
    finally
    {
        MessageBox.Show("Anda telah berhasil
load document", oDg.FileName);
        wordApp.Quit();
    }
}

private void btn_watermark2_Click_1(object sender,
EventArgs e)
{
    if (textBox5.Text != "ilkom")
    {
        MessageBox.Show("Salah Password");
    }
    else
    {
        //hitung waktulsb
        DateTime awal = DateTime.Now;

        //Ubah audio ke bytes
        byte[] bytes =
System.IO.File.ReadAllBytes(tPath.Text);

        //Ubah pesan ke binary

```

```

string binpesan = "";
string hex = richTextBox6.Text;
int panjangPesan = 0;
foreach (byte b in hex)
{
    binpesan +=
Convert.ToString(hex[panjangPesan], 2).PadLeft(8, '0');
    panjangPesan++;
}
panjangPesan *= 8;
//LSB
int i = 0, j = 0;
try
{
    string pesan = binpesan;
    foreach (byte b in bytes)
    {
        if (j < 2112) // header
        {
            j++;
            continue;
        }
        if (pesan[i] == '1')
            bytes[j] = (byte)(b | 1);
        else
            bytes[j] = (byte)(b & 254);
        i++; j++;
        if (i >= panjangPesan)
            break;
    }
}
catch (Exception q)
{
    //MessageBox.Show(q.Message.ToString());
}

finally
{
    //akhir proses
    DateTime akhir = DateTime.Now;
    TimeSpan elapsed =
akhir.Subtract(awal);
    label17.Text =
elapsed.Hours.ToString("00") + ":" +

```

```

        elapsed.Minutes.ToString("00") +
        ":" + elapsed.Seconds.ToString("00") + "." +
        elapsed.Milliseconds.ToString("000");

        //Save file hasil watermark
        sDg.Filter = "Windows Media
Audio|*.wma|All Files (*.*)|*.*";
        sDg.Title = "";
        if (sDg.ShowDialog() ==
DialogResult.OK)
        {

System.IO.File.WriteAllBytes(sDg.FileName, bytes);
        MessageBox.Show("Save File
success", sDg.FileName);

        SoundPlayer myPlayer = new
SoundPlayer(oDg.FileName);
        myPlayer.Stream = new
MemoryStream();
        //myPlayer.Play();
        }
    }
}

private void btn_reset3_Click(object sender,
EventArgs e)
{
    tPath.Text = "";
    textBox4.Text = "";
    richTextBox6.Text = "";
    textBox5.Text = "";
    label17.Text = "";
}

private void btn_close2_Click_1(object sender,
EventArgs e)
{
    this.Dispose();
    Form fr = new Form1();
    fr.ShowDialog();
}

```



```

        private void btn_play2_Click_1(object sender,
EventArgs e)
        {
            Mplayer2.close();
            timer1.Enabled = true;
            Mplayer.URL = tPath.Text;
            label38.Text = "Playing Now";
        }

        private void btn_stop2_Click_1(object sender,
EventArgs e)
        {
            timer1.Enabled = false;
            Mplayer.close();
            label38.Text = "Stop";
        }

        private void btn_reset4_Click_1(object sender,
EventArgs e)
        {
            Mplayer.close();
            tPath.Text = "";
            label33.Text = "";
            label34.Text = "";
            label35.Text = "";
            label36.Text = "";
            label37.Text = "";
            label38.Text = "";
            label40.Text = "";
            richTextBox4.Text = "";
        }
    }
}

```

### 3. Form Extract

```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;

```

```

using System.Windows.Forms;
using System.Media;
using MediaInfoNET;
using System.Diagnostics;
using System.IO;

namespace watermark
{
    public partial class Form3 : Form
    {
        public Form3()
        {
            InitializeComponent();

        }

        Stopwatch ss = new Stopwatch();

        private void checkBox2_CheckedChanged(object
sender, EventArgs e)
        {
            Mplayer.settings.mute = checkBox2.Checked;
        }

        private void timer1_Tick(object sender, EventArgs
e)
        {
            //Current time
            label36.Text =
Mplayer3.Ctlcontrols.currentPositionString;
            //Remainig time
            double t =
Math.Floor(Mplayer3.currentMedia.duration -
Mplayer3.Ctlcontrols.currentPosition);
            label35.Text = t.ToString() + " Seconds
Remainig";
        }

        private void timer2_Tick(object sender, EventArgs
e)
        {
            //Current time
            label29.Text =
Mplayer.Ctlcontrols.currentPositionString;

```

```

        //Remainig time
        double t =
Math.Floor(Mplayer.currentMedia.duration -
Mplayer.Ctlcontrols.currentPosition);
        label30.Text = t.ToString() + " Seconds
Remainig";
    }

    private void checkBox1_CheckedChanged(object
sender, EventArgs e)
    {
        Mplayer3.settings.mute = checkBox1.Checked;
    }

    private void brw_audio_Click_1(object sender,
EventArgs e)
    {
        if (oDg.ShowDialog() == DialogResult.OK)
        {
            textBox1.Text = oDg.FileName;
            Mplayer.close();
            richTextBox4.Text = "";
            FileInfo yourfile = new
FileInfo(oDg.FileName);
            label27.Text = ((float)yourfile.Length /
1024).ToString() + " KB";
            //AudioTag menggunakanMediaInfoNET
            MediaFile audio1 = new
MediaFile(textBox1.Text);
            label15.Text = audio1.Name;
            label26.Text = audio1.General.Format;
            richTextBox4.Text += "File Name\t: " +
audio1.Name + '\n';
            richTextBox4.Text += "Format\t: " +
audio1.General.Format + '\n';
            richTextBox4.Text += "Duration\t: " +
audio1.General.DurationString + '\n';
            richTextBox4.Text += "Bit Rate\t: " +
audio1.General.Bitrate + " Kbps\n";
            if (audio1.Audio.Count > 0)
            {
                richTextBox4.Text += "Channels\t: " +
audio1.Audio[0].Channels.ToString() + '\n';
                richTextBox4.Text += "Sampling\t: " +
audio1.Audio[0].SamplingRate.ToString() + " Hz\n";
            }
        }
    }

```

```

richTextBox4.Text += "-----
-----Tag-----\n";
    }

    WMPLib.IWMPMedia m =
Mplayer.newMedia(textBox1.Text);
    if (m != null)
    {
        //Durasi total
        label28.Text = m.durationString;
        //Item atribut dan info
        for (int i = 0; i < m.attributeCount;
i++)
        {
            richTextBox3.Text +=
m.getAttributeName(i) + " = " +
m.getItemInfo(m.getAttributeName(i)) + '\n';
        }
    }
    else
    {
        textBox1.Text = "";
    }
}

private void btn_play_Click_1(object sender,
EventArgs e)
{
    Mplayer3.close();
    timer2.Enabled = true;
    Mplayer.URL = textBox1.Text;
    label33.Text = "Playing Now";
}

private void btn_stop_Click_1(object sender,
EventArgs e)
{
    timer2.Enabled = false;
    Mplayer.close();
    label33.Text = "Stop";
}

private void btn_reset_Click_1(object sender,
EventArgs e)
{

```

```

        Mplayer.close();
        textBox1.Text = "";
        label5.Text = "";
        label26.Text = "";
        label27.Text = "";
        label28.Text = "";
        label29.Text = "";
        label30.Text = "";
        label33.Text = "";
        richTextBox4.Text = "";
    }

    private void brw_pola_Click_1(object sender,
EventArgs e)
    {
        OpenFileDialog oDg = new OpenFileDialog();
        oDg.Filter = "Text File|*.txt|All Files
(*.*)|*.*";
        oDg.Title = "";
        if (oDg.ShowDialog() == DialogResult.OK)
        {
            try
            {
                string text =
System.IO.File.ReadAllText(oDg.FileName);
                textBox2.Text = text;
            }
            catch (IOException err)
            {
                MessageBox.Show(err.Message);
            }
            finally
            {
                MessageBox.Show("Anda telah berhasil
meng-import public key", oDg.FileName);
            }
        }
    }

    private void btn_extract_Click_1(object sender,
EventArgs e)
    {
        if (textBox3.Text != "ilkom")
        {

```

```

        MessageBox.Show("Password Salah");
    }
    else
    {

        //waktu awal
        DateTime awal = DateTime.Now;

        richTextBox1.Text = "";
        int i = 2112;
        //Ubah audio ke byte
        string binaudio = "";
        byte[] bytes =
System.IO.File.ReadAllBytes(textBox1.Text);

        foreach (byte b in bytes)
        {
            binaudio += Convert.ToString(bytes[i],
2).PadLeft(8, '0');
            i++;
            if (i >= 3112)
                break;
        }

        string pola = textBox2.Text;
        string binpesan = "";
        int panjangbytes = binaudio.Length / 8;
        for (i = 0; i < panjangbytes; ++i) //0-23
awal merupakan header
        {
            if (pola[i % 4] == '1')
                binpesan += binaudio.Substring(i *
8 + 7, 1);
            else if (pola[i % 4] == '2')
                binpesan += binaudio.Substring(i *
8 + 6, 1);
            else if (pola[i % 4] == '3')
                binpesan += binaudio.Substring(i *
8 + 5, 1);
            else
                binpesan += binaudio.Substring(i *
8 + 4, 1);
        }

        int panjangpesan = binpesan.Length / 8;
        byte bytespesan;

```

```

        for (i = 0; i < panjangpesan; ++i)
        {
            bytespesan =
Convert.ToByte(binpesan.Substring(8 * i, 8), 2);
            if (bytespesan < 9 || (bytespesan > 10
&& bytespesan < 32) || bytespesan > 127)
                break;
            richTextBox1.Text +=
Convert.ToChar(bytespesan);
        }

        //akhir proses
        DateTime akhir = DateTime.Now;
        TimeSpan elapsed = akhir.Subtract(awal);
        label50.Text = elapsed.Hours.ToString("00")
+ ":" +
            elapsed.Minutes.ToString("00") + ":" +
elapsed.Seconds.ToString("00") + "." +
            elapsed.Milliseconds.ToString("000");
    }
}

private void btn_reset2_Click_1(object sender,
EventArgs e)
{
    textBox2.Text = "";
    textBox3.Text = "";
    richTextBox1.Text = "";
    label50.Text = "";
}

private void btn_close_Click_1(object sender,
EventArgs e)
{
    this.Dispose();
    Form fr = new Form1();
    fr.ShowDialog();
}

private void brw_audio2_Click_1(object sender,
EventArgs e)
{
    if (oDg.ShowDialog() == DialogResult.OK)
    {
        tPath.Text = oDg.FileName;
        Mplayer.close();
    }
}

```

```

        richTextBox3.Text = "";
        FileInfo yourfile = new
FileInfo(oDg.FileName);
        label38.Text = ((float)yourfile.Length /
1024).ToString() + " KB";
        //AudioTag menggunakanMediaInfoNET
        MediaFile audio2 = new
MediaFile(tPath.Text);
        label45.Text = audio2.Name;
        label40.Text = audio2.General.Format;
        richTextBox3.Text += "File Name\t: " +
audio2.Name + '\n';
        richTextBox3.Text += "Format\t: " +
audio2.General.Format + '\n';
        richTextBox3.Text += "Duration\t: " +
audio2.General.DurationString + '\n';
        richTextBox3.Text += "Bit Rate\t: " +
audio2.General.Bitrate + " Kbps\n";
        if (audio2.Audio.Count > 0)
        {
            richTextBox3.Text += "Channels\t: " +
audio2.Audio[0].Channels.ToString() + '\n';
            richTextBox3.Text += "Sampling\t: " +
audio2.Audio[0].SamplingRate.ToString() + " Hz\n";
            richTextBox3.Text += "-----
-----Tag-----\n";
        }

        WMPLib.IWMPMedia m =
Mplayer3.newMedia(tPath.Text);
        if (m != null)
        {
            //Durasi total
            label37.Text = m.durationString;
            //Item atribut dan info
            for (int i = 0; i < m.attributeCount;
i++)
            {
                richTextBox3.Text +=
m.getAttributeName(i) + " = " +
m.getItemInfo(m.getAttributeName(i)) + '\n';
            }
        }
        else
        {

```



```

        tPath.Text = "";
    }
}

private void btn_play2_Click_1(object sender,
EventArgs e)
{
    Mplayer.close();
    timer1.Enabled = true;
    Mplayer3.URL = tPath.Text;
    label34.Text = "Playing Now";
}

private void btn_stop2_Click_1(object sender,
EventArgs e)
{
    timer1.Enabled = false;
    Mplayer3.close();
    label42.Text = "Stop";
}

private void btn_reset3_Click_1(object sender,
EventArgs e)
{
    Mplayer3.close();
    tPath.Text = "";
    label45.Text = "";
    label40.Text = "";
    label38.Text = "";
    label37.Text = "";
    label36.Text = "";
    label35.Text = "";
    richTextBox3.Text = "";
}

private void btn_extract2_Click_1(object sender,
EventArgs e)
{
    if (textBox4.Text != "ilkom")
    {
        MessageBox.Show("Password Salah");
    }
    else
    {
        DateTime awal = DateTime.Now;

```

```

        richTextBox2.Text = "";
        int i = 2112;
        //Ubah audio ke byte
        string binaudio = "";
        byte[] bytes =
System.IO.File.ReadAllBytes(tPath.Text);

        foreach (byte b in bytes)
        {
            binaudio += Convert.ToString(bytes[i],
2).PadLeft(8, '0');
            i++;
            if (i >= 3112)
                break;
        }
        string binpesan = "";
        int panjangbytes = binaudio.Length / 8;
        for (i = 0; i < panjangbytes; ++i) //0-23
awal merupakan header
        {
            binpesan += binaudio.Substring(i * 8 +
7, 1);
        }

        int panjangpesan = binpesan.Length / 8;
        byte bytespesan;
        for (i = 0; i < panjangpesan; ++i)
        {
            bytespesan =
Convert.ToByte(binpesan.Substring(8 * i, 8), 2);
            if (bytespesan < 9 || (bytespesan > 10
&& bytespesan < 32) || bytespesan > 127)
                break;
            richTextBox2.Text +=
Convert.ToChar(bytespesan);
        }

        //akhir proses
        DateTime akhir = DateTime.Now;
        TimeSpan elapsed = akhir.Subtract(awal);
        label51.Text = elapsed.Hours.ToString("00")
+ ":" +
            elapsed.Minutes.ToString("00") + ":" +
elapsed.Seconds.ToString("00") + "." +
            elapsed.Milliseconds.ToString("000");
    }

```

```
    }

    private void btn_reset4_Click_1(object sender,
EventArgs e)
    {
        textBox4.Text = "";
        richTextBox2.Text = "";
        label51.Text = "";
    }

    private void btn_close2_Click_1(object sender,
EventArgs e)
    {
        this.Dispose();
        Form fr = new Form1();
        fr.ShowDialog();
    }
}
}
```

## CURRICULUM VITAE

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### **Pendidikan**

1997 – 2003 : SD Negeri 1 Alur Dua, Pangkalan Berandan  
2003 – 2006 : SMP Negeri 1 Babalan, Pangkalan Berandan  
2006 – 2009 : SMA Negeri 1 Babalan, Pangkalan Berandan  
2009 – Sekarang : Universitas Sumatera Utara (FasilkomTI –Ilmu Komputer)

### **Kualifikasi**

Programming  
Bahasa Inggris