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LISTING PROGRAM

1. LOG IN

```
Public Class FrmLogin

    Private Sub btnLogin_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs)
        Dr = OpenDR("SELECT * FROM tb_user WHERE user='" & TxtUsername.Text &
"' AND pass='" & TxtPassword.Text & "'")
        If Dr.Read Then
            User = Dr("user")
            FrmUtama.Show()
            Me.Close()
        Else
            MsgError("Salah kombinasi username dan password")
            TxtUsername.Focus()
        End If
    End Sub

    Private Sub txtUsername_KeyPress(ByVal sender As System.Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs)
        If e.KeyChar = Chr(13) Then
            TxtPassword.Focus()
        End If
    End Sub

    Private Sub txtPassword_KeyPress(ByVal sender As System.Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs)
        If e.KeyChar = Chr(13) Then
            btnLogin_Click(Nothing, Nothing)
        End If
    End Sub

    Private Sub btnKeluar_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs)
        Me.Close()
    End Sub

    Private Sub BtnLogin2_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnLogin.Click
        Dr = OpenDR("SELECT * FROM tb_user WHERE user='" & TxtUsername.Text &
"' AND pass='" & TxtPassword.Text & "'")
        If Dr.Read Then
            User = Dr("user")
            Level = Dr("level")
            FrmUtama.Show()
            Me.Close()
        Else
            MsgError("Salah kombinasi username dan password")
            TxtUsername.Focus()
        End If
    End Sub

End Class
```

```

        End If
    End Sub

    Private Sub BtnKeluar2_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnKeluar.Click
        Me.Close()
    End Sub

    Private Sub FrmLogin_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        TxtUsername.Focus()
    End Sub

    Private Sub cb_cek_CheckedChanged(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles cb_cek.CheckedChanged
        If cb_cek.Checked = True Then
            TxtPassword.PasswordChar = CChar("")
        Else
            TxtPassword.PasswordChar = CChar("•")
        End If
    End Sub

    Private Sub TxtPassword_KeyPress1(ByVal sender As Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs) Handles TxtPassword.KeyPress
        TxtPassword.MaxLength = 10
        If e.KeyChar = Chr(13) Then BtnLogin.Focus()
    End Sub

    Private Sub TxtPassword_TextChanged(ByVal sender As System.Object, ByVal e
As System.EventArgs) Handles TxtPassword.TextChanged

    End Sub

    Private Sub TxtUsername_KeyPress1(ByVal sender As Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs) Handles TxtUsername.KeyPress
        TxtUsername.MaxLength = 10
        If e.KeyChar = Chr(13) Then TxtPassword.Focus()
    End Sub

    Private Sub TxtUsername_TextChanged(ByVal sender As System.Object, ByVal e
As System.EventArgs) Handles TxtUsername.TextChanged

    End Sub
End Class

```

2. Menu Utama

```

Public Class FrmUtama

    Private Sub FrmUtama_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        sb1.Text = "User: " & user
    End Sub
End Class

```

```

sb2.Text = Format(Date.Now, "dd MMMM yyyy HH:mm:ss")
If Level = "pemilik" Then
    BtnJenis.Enabled = False
    BtnNilai.Enabled = False
    BtnPeriode.Enabled = False
Else
    BtnJenis.Enabled = True
    BtnNilai.Enabled = True
    BtnPeriode.Enabled = True
End If
End Sub

Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Timer1.Tick
    sb2.Text = Format(Date.Now, "dd MMMM yyyy HH:mm:ss")
End Sub

Private Sub BtnHitung_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnHitung.Click
    Dim f As New FrmHitung
    f.ShowAsChild(Me)
End Sub

Private Sub MnPassword_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs)
    FrmPassword.ShowDialog()
End Sub

Private Sub BtnLapRangking_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs)
    LapHitung.ShowAsChild(Me)
End Sub

Private Sub BtnLogout_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnLogout.Click
    FrmLogin.Show()
    Me.Close()
End Sub

Private Sub BtnPassword_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnPassword.Click
    Dim f As New FrmPassword
    f.ShowDialog()
End Sub

Private Sub BtnNilai_Click(sender As Object, e As EventArgs) Handles
BtnNilai.Click
    Dim f As New FrmNilai
    f.ShowAsChild(Me)
End Sub

Private Sub BtnPeriode_Click(sender As Object, e As EventArgs) Handles
BtnPeriode.Click
    Dim f As New FrmPeriode
    f.ShowAsChild(Me)

```

```

End Sub

Private Sub BtnJenis_Click(sender As Object, e As EventArgs) Handles
BtnJenis.Click
    Dim f As New FrmJenis
    f.ShowAsChild(Me)
End Sub

Private Sub ToolStrip1_ItemClicked(ByVal sender As System.Object, ByVal e
As System.Windows.Forms.ToolStripItemClickedEventArgs) Handles
ToolStrip1.ItemClicked

End Sub

Private Sub BtnHasil_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs)

End Sub
End Class

```

3. Form Jenis Tambah

```

Public Class FrmJenis

Private Sub BtnRefresh_Click(sender As Object, e As EventArgs) Handles
BtnRefresh.Click
    Dgv.DataSource = OpenDT("SELECT Kode_jenis, Nama_jenis FROM tb_jenis
WHERE kode_jenis LIKE @0 OR nama_jenis LIKE @0 ORDER BY kode_jenis", "%" &
TxtCari.Text & "%")
End Sub

Private Sub FrmJenis_Load(sender As Object, e As EventArgs) Handles
MyBase.Load
    Dgv.SetDefault()
    BtnRefresh_Click(sender, e)
End Sub

Private Sub FrmJenis_KeyDown(sender As Object, e As KeyEventArgs) Handles
MyBase.KeyDown
    If isRefresh(e) Then BtnRefresh_Click(sender, e)
    If isClose(e) Then BtnKeluar_Click(sender, e)
End Sub

Private Sub TxtCari_KeyPress(sender As Object, e As KeyPressEventArgs)
Handles TxtCari.KeyPress
    If isEnter(e) Then BtnRefresh_Click(sender, e)
End Sub

Private Sub BtnKeluar_Click(sender As Object, e As EventArgs) Handles
BtnKeluar.Click
    Me.Close()
End Sub

```

```

        Private Sub BtnHapus_Click(sender As Object, e As EventArgs) Handles
BtnHapus.Click
            If Not Dgv.CurrentCell Is Nothing Then
                If msgAsk("Hapus data?") = vbYes Then
                    Delete("tb_jenis", "kode_jenis=@0", Dgv.getSelAt("kode_jenis"))
                    Delete("tb_nilai", "kode_jenis=@0", Dgv.getSelAt("kode_jenis"))
                    msgInfo("Data terhapus!")
                    BtnRefresh_Click(sender, e)
                End If
            End If
        End Sub

        Private Sub BtnTambah_Click(sender As Object, e As EventArgs) Handles
BtnTambah.Click
            Dim f As New FrmJenisTambah
            f.EditState = False
            If f.ShowDialog = DialogResult.Yes Then
                BtnRefresh_Click(sender, e)
            End If
        End Sub

        Private Sub BtnUbah_Click(sender As Object, e As EventArgs) Handles
BtnUbah.Click
            If Not Dgv.CurrentCell Is Nothing Then
                Dim f As New FrmJenisTambah
                f.EditState = True
                f.TxtKode.Text = Dgv.getSelAt("kode_jenis")
                If f.ShowDialog = DialogResult.Yes Then
                    BtnRefresh_Click(sender, e)
                End If
            End If
        End Sub
    End Class

```

4. Jenis Tambah

```

Public Class FrmJenisTambah
    Public EditState As Boolean = False

    Private Sub BtnKeluar_Click(sender As Object, e As EventArgs) Handles
BtnKeluar.Click
        Me.Close()
    End Sub

    Private Sub BtnSimpan_Click(sender As Object, e As EventArgs) Handles
BtnSimpan.Click
        If TxtKode.Text = "" Or TxtNama.Text = "" Then
            MsgError("Field bertanda * tidak boleh kosong!")
        ElseIf Not EditState And OpenDT("SELECT * FROM tb_jenis WHERE
kode_jenis=@0", TxtKode.Text).Rows.Count > 0 Then
            MsgError("Kode sudah ada!")
        Else
            If EditState Then

```

```

        Execute("UPDATE tb_jenis SET nama_jenis=@0 WHERE
kode_jenis=@1", TxtNama.Text, TxtKode.Text)
    Else
        Execute("INSERT INTO tb_jenis(kode_jenis, nama_jenis) VALUES
(@0, @1)", TxtKode.Text, TxtNama.Text)
        Execute("INSERT INTO tb_nilai(kode_periode, kode_jenis, nilai)
SELECT kode_periode, @0, 0 FROM tb_periode", TxtKode.Text)
    End If
    MsgBox("Data tersimpan")
    Me.DialogResult = Windows.Forms.DialogResult.Yes
    Me.Close()
End If
End Sub

Private Sub BtnAuto_Click(sender As Object, e As EventArgs) Handles
BtnAuto.Click
    TxtKode.Text = KodeOtomatis("kode_jenis", "tb_jenis", "J", 2)
End Sub

Private Sub FrmJenisTambah_Load(sender As Object, e As EventArgs) Handles
MyBase.Load
    BtnAuto.Visible = Not EditState
    TxtKode.Enabled = Not EditState
    If EditState Then
        Dr = OpenDR("SELECT * FROM tb_jenis WHERE kode_jenis=@0",
TxtKode.Text)
        If Dr.Read() Then
            TxtKode.Text = Dr("kode_jenis")
            TxtNama.Text = Dr("nama_jenis")
        End If
    Else
        BtnAuto_Click(sender, e)
    End If
    BtnAuto.Hide()
End Sub

Private Sub FrmJenisTambah_KeyDown(sender As Object, e As KeyEventArgs)
Handles MyBase.KeyDown
    If isSave(e) Then BtnSimpan_Click(sender, e)
    If isClose(e) Then BtnKeluar_Click(sender, e)
End Sub
End Class

```

5. Form Periode

```
Public Class FrmPeriode
```

```

    Private Sub BtnRefresh_Click(sender As Object, e As EventArgs) Handles
BtnRefresh.Click
        Dgv.DataSource = OpenDT("SELECT Kode_periode, Nama_periode FROM
tb_periode WHERE kode_periode LIKE @0 OR nama_periode LIKE @0 ORDER BY
kode_periode", "%" & TxtCari.Text & "%")
        Dgv.Columns("nama_periode").DefaultCellStyle.Format = "MMM-yyyy"
    End Sub

```

```

Private Sub FrmPeriode_Load(sender As Object, e As EventArgs) Handles
MyBase.Load
    Dgv.SetDefault()
    BtnRefresh_Click(sender, e)
End Sub

Private Sub FrmPeriode_KeyDown(sender As Object, e As KeyEventArgs) Handles
MyBase.KeyDown
    If isRefresh(e) Then BtnRefresh_Click(sender, e)
    If isClose(e) Then BtnKeluar_Click(sender, e)
End Sub

Private Sub TxtCari_KeyPress(sender As Object, e As KeyPressEventArgs)
Handles TxtCari.KeyPress
    If isEnter(e) Then BtnRefresh_Click(sender, e)
End Sub

Private Sub BtnKeluar_Click(sender As Object, e As EventArgs) Handles
BtnKeluar.Click
    Me.Close()
End Sub

Private Sub BtnHapus_Click(sender As Object, e As EventArgs) Handles
BtnHapus.Click
    If Not Dgv.CurrentCell Is Nothing Then
        If msgAsk("Hapus data?") = vbYes Then
            Delete("tb_periode", "kode_periode=@0",
Dgv.getSelAt("kode_periode"))
            Delete("tb_nilai", "kode_periode=@0",
Dgv.getSelAt("kode_periode"))
            msgInfo("Data terhapus!")
            BtnRefresh_Click(sender, e)
        End If
    End If
End Sub

Private Sub BtnTambah_Click(sender As Object, e As EventArgs) Handles
BtnTambah.Click
    Dim f As New FrmPeriodeTambah
    f.EditState = False
    If f.ShowDialog = DialogResult.Yes Then
        BtnRefresh_Click(sender, e)
    End If
End Sub

Private Sub BtnUbah_Click(sender As Object, e As EventArgs) Handles
BtnUbah.Click
    If Not Dgv.CurrentCell Is Nothing Then
        Dim f As New FrmPeriodeTambah
        f.EditState = True
        f.TxtKode.Text = Dgv.getSelAt("kode_periode")
        If f.ShowDialog = DialogResult.Yes Then
            BtnRefresh_Click(sender, e)
        End If
    End If
End Sub

```

```

        End If
    End Sub
End Class

```

6. Form Periode Tambah

```

Public Class FrmPeriodeTambah
    Public EditState As Boolean = False

    Private Sub BtnKeluar_Click(sender As Object, e As EventArgs) Handles
        BtnKeluar.Click
            Me.Close()
        End Sub

    Private Sub BtnSimpan_Click(sender As Object, e As EventArgs) Handles
        BtnSimpan.Click
            If TxtKode.Text = "" Or TxtNama.Text = "" Then
                msgError("Field bertanda * tidak boleh kosong!")
            ElseIf Not EditState And OpenDT("SELECT * FROM tb_periode WHERE
            kode_periode=@0", TxtKode.Text).Rows.Count > 0 Then
                MsgBox("Kode sudah ada!")
            Else
                If EditState Then
                    Execute("UPDATE tb_periode SET nama_periode=@0 WHERE
            kode_periode=@1", TxtNama.Value, TxtKode.Text)
                Else
                    Execute("INSERT INTO tb_periode(kode_periode, nama_periode)
            VALUES (@0, @1)", TxtKode.Text, TxtNama.Value)

                    Execute("INSERT INTO tb_nilai (kode_periode, kode_jenis, nilai)
            SELECT @0, kode_jenis, 0 FROM tb_jenis", TxtKode.Text)
                End If
                msgInfo("Data tersimpan")
                Me.DialogResult = Windows.Forms.DialogResult.Yes
                Me.Close()
            End If
        End Sub

    Private Sub BtnAuto_Click(sender As Object, e As EventArgs) Handles
        BtnAuto.Click
            TxtKode.Text = KodeOtomatis("kode_periode", "tb_periode", "P", 2)
        End Sub

    Private Sub FrmPeriodeTambah_Load(sender As Object, e As EventArgs) Handles
        MyBase.Load
            BtnAuto.Visible = Not EditState
            TxtKode.Enabled = Not EditState
            If EditState Then
                Dr = OpenDR("SELECT * FROM tb_periode WHERE kode_periode=@0",
            TxtKode.Text)
                If Dr.Read() Then
                    TxtKode.Text = Dr("kode_periode")
                    TxtNama.Text = Dr("nama_periode")
                End If
            End If
        End Sub
    End Class

```

```

Else
    BtnAuto_Click(sender, e)
End If
BtnAuto.Hide()

End Sub

Private Sub FrmPeriodeTambah_KeyDown(sender As Object, e As KeyEventArgs)
Handles MyBase.KeyDown
    If isSave(e) Then BtnSimpan_Click(sender, e)
    If isClose(e) Then BtnKeluar_Click(sender, e)
End Sub
End Class

```

7. Form Nilai

```

Public Class FrmNilai
    Public DtNilai As New DataTable

    Private NilaiAwal As Integer = 0

    Private Sub FrmNilai_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
        Dgv.AllowUserToAddRows = False
        Dgv.AutoSizeColumnsMode = DataGridViewAutoSizeColumnsMode.AllCells
        isiGrid1()
    End Sub

    Sub isiGrid1()
        Dgv.Columns.Clear()

        Dgv.Columns.Add("kode_periode", "Kode")
        Dgv.Columns("kode_periode").ReadOnly = True
        Dgv.Columns.Add("nama_periode", "Nama")
        Dgv.Columns("nama_periode").ReadOnly = True

        Dr = OpenDR("SELECT * FROM tb_periode WHERE kode_periode LIKE @0 OR
nama_periode LIKE @0 ORDER BY kode_periode", "%" & TxtCari.Text & "%")
        While dr.Read()
            Dgv.Rows.Add(Dr("kode_periode"), Dr("nama_periode"))
        End While
        Dgv.Columns("nama_periode").DefaultCellStyle.Format = "MMM-yyyy"

        Dr = OpenDR("SELECT kode_jenis, nama_jenis FROM tb_jenis ORDER BY
kode_jenis")
        While dr.Read()
            Dgv.Columns.Add(dr(0), dr(1))
        End While

        For Each row As DataGridViewRow In Dgv.Rows
            Dr = OpenDR("SELECT * FROM tb_nilai WHERE kode_periode=@0 ORDER BY
kode_jenis", Dgv.getValueAt(row.Index, "kode_periode"))
            While dr.Read()
                Dgv(Dr("kode_jenis").ToString(), row.Index).Value = Dr("nilai")
            End While
        End For
    End Sub
End Class

```

```

        End While
    Next
End Sub

Private Sub BtnRefresh_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnRefresh.Click
    isiGrid1()
End Sub

Private Sub TxtCari_KeyPress(sender As Object, e As KeyPressEventArgs)
Handles TxtCari.KeyPress
    If e.IsEnter Then isiGrid1()
End Sub

Private Sub BtnKeluar_Click(sender As Object, e As EventArgs) Handles
BtnKeluar.Click
    Me.Close()
End Sub

Private Sub Dgv_CellFormatting(sender As Object, e As
DataGridViewCellFormattingEventArgs) Handles Dgv.CellFormatting
    If Not IsNothing(e.Value) Then
        If e.ColumnIndex >= 2 Then
            e.CellStyle.BackColor = Color.Yellow
        End If
    End If
End Sub

Private Sub Dgv_CellEndEdit(sender As Object, e As
DataGridViewCellEventArgs) Handles Dgv.CellEndEdit
    Dim nilai As Double = Val(Dgv(e.ColumnIndex, e.RowIndex).Value)
    Execute("UPDATE tb_nilai SET nilai=@0 WHERE kode_periode=@1 AND
kode_jenis=@2", nilai, Dgv(0, e.RowIndex).Value,
Dgv.Columns(e.ColumnIndex).Name)
    TxtKeterangan.Text = "Data tersimpan!"
End Sub

Private Sub Label1_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Label1.Click

End Sub
End Class

```

8. Form Hitung

```

Public Class FrmHitung
    Dim DtPeriode As DataTable
    Dim DtJenis As DataTable
    Dim DtNilai As DataTable
    Dim a As Integer

    Dim MaxPeriode As Date

```

```

Dim AC As ClassFLS

Private Sub FrmHitung_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
    MaxPeriode = GetVar("SELECT MAX(nama_periode) FROM tb_periode")
    TxtNextPeriode.Text = 3
    TxtJenis.setDS(OpenDT("SELECT kode_jenis, nama_jenis FROM tb_jenis
ORDER BY kode_jenis"))

    Dim dt As DataTable = OpenDT("SELECT * FROM tb_nilai WHERE nilai < 0")
    Dgv1.SetDefault()
    awal()
    'BtnHitung_Click(sender, e)
    Label5.Hide()
    TxtRMSE.Hide()
End Sub

Sub awal()
    DtNilai = OpenDT("SELECT p.nama_periode, n.nilai FROM tb_nilai n INNER
JOIN tb_jenis j ON j.kode_jenis=n.kode_jenis INNER JOIN tb_periode p ON
p.kode_periode=n.kode_periode WHERE j.kode_jenis=@0 ORDER BY p.nama_periode ",
TxtJenis.SelectedValue.ToString())
    'DtNilai = OpenDT("SELECT p.nama_periode, n.nilai FROM tb_nilai n INNER
JOIN tb_jenis j ON j.kode_jenis=n.kode_jenis INNER JOIN tb_periode p ON
p.kode_periode=n.kode_periode WHERE j.kode_jenis=@0 ORDER BY p.nama_periode
LIMIT 6", TxtJenis.SelectedValue.ToString())

    AC = New ClassFLS(DtNilai)
    With Dgv1
        .Columns.Clear()
        .Columns.Add("periode", "Periode")
        .Columns.Add("nilai", TxtJenis.Text)
        .Columns("periode").DefaultCellStyle.Format = "MMM-yyyy"
        For Each Row As KeyValuePair(Of Date, Nilai) In AC.DNilai
            Dgv1.Rows.Add(Row.Value.Periode, Row.Value.Y)
        Next
    End With
    TxtMAD.Text = ""
    TxtMAPE.Text = ""
    TxtMSE.Text = ""
    TxtRMSE.Text = ""
    BtnCetak.Enabled = False
End Sub

Private Sub btnKeluar_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnKeluar.Click
    Me.Close()
End Sub

Private Sub BtnHitung_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnHitung.Click
    If Val(TxtNextPeriode.Text) < 1 Then
        MsgInfo("Masukkan next periode minimal 1")
        Exit Sub
    End If

```

```

AC.hitung(MaxPeriode, Val(TxtNextPeriode.Text))
With Dgv1
    .Columns.Clear()
    .Columns.Add("periode", "Periode")
    .Columns("periode").DefaultCellStyle.Format = "MMM-yyyy"
    .Columns.Add("y", "Y")
    .Columns.Add("x", "X")
    .Columns.Add("xy", "XY")
    .Columns.Add("xsquare", "X ^ 2")
    .Columns.Add("ft", "Ft")
    .Columns.Add("err", "Ft-Yt")
    .Columns.Add("errAbs", "|Ft-Yt|")
    .Columns.Add("errSquare", "(Ft-Yt)^2")
    .Columns.Add("errPerY", "|Ft-Yt|/Yt")

    For Each Row As KeyValuePair(Of Date, Nilai) In AC.DFt
        .Rows.Add(Row.Value.Periode,
            Row.Value.Y,
            Row.Value.X,
            Row.Value.XY,
            Row.Value.XSquare,
            Math.Round(Row.Value.Ft, 2),
            Math.Round(Row.Value.Err, 2),
            Math.Round(Row.Value.ErrAbs, 2),
            Math.Round(Row.Value.ErrSquare, 2),
            Math.Round(Row.Value.ErrPerY, 2))
        If Row.Value.Periode > MaxPeriode Then
            .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Yellow
        Else
            End If
        Next
    End With
    TxtMAD.Text = Math.Round(AC.MAD, 2)
    TxtMSE.Text = Math.Round(AC.MSE, 2)
    TxtRMSE.Text = Math.Round(AC.RMSE, 2)
    TxtMAPE.Text = Math.Round(AC.MAPE * 100, 2) & "%"
    BtnCetak.Enabled = True
End Sub

Private Sub TxtJenis_SelectedIndexChanged(sender As System.Object, e As
System.EventArgs) Handles TxtJenis.SelectedIndexChanged
    awal()
End Sub

Private Sub BtnCetak_Click(sender As System.Object, e As System.EventArgs)
Handles BtnCetak.Click
    Dim l As New LapHitung
    Dim Rpt As New RptHitung

    Dim Dt As DataTable = OpenDT("SELECT ' ' AS jenis, ' ' AS periode, 0.0 AS
y, 0 AS x, 0 AS xx, 0.0 AS xy, 0.0 AS ft, 0.0 AS err, 0.0 AS errSquare, 0.0 AS
errAbs, 0.0 AS errPerY, ' ' AS MAD, ' ' AS MAPE, ' ' AS MSE, ' ' AS RMSE")

```

```

        Dim DtGrafik As DataTable = OpenDT("SELECT '' AS periode, 0.0 AS nilai,
0.0 AS fx")
        Dt.Clear()
        For Each row As DataGridViewRow In Dgv1.Rows
            Dim tanggal As Date = row.Cells("periode").Value
            Dt.Rows.Add(TxtJenis.Text.ToUpper(), tanggal.ToString("MMM-yyyy"),
row.Cells("y").Value, row.Cells("x").Value, row.Cells("xsquare").Value,
row.Cells("xy").Value, row.Cells("ft").Value, row.Cells("err").Value,
row.Cells("errSquare").Value, row.Cells("errAbs").Value,
row.Cells("errPerY").Value, TxtMAD.Text, TxtMAPE.Text, TxtMSE.Text,
TxtRMSE.Text)

            'If row.Index < Dgv1.Rows.Count - 4 Then
            DtGrafik.Rows.Add(tanggal.ToString("MMM-yyyy"),
row.Cells("y").Value, row.Cells("ft").Value)
            'End If
        Next

        Rpt.SetDataSource(Dt)
        Rpt.Subreports(0).SetDataSource(DtGrafik)
        Rpt.Refresh()
        1.CrystalReportViewer1.ReportSource = Rpt
        1.CrystalReportViewer1.RefreshReport()
        1.ShowAsChild(Me.MdiParent)
    End Sub
End Class

```

9. Form Password

```

Public Class FrmPassword

    Private Sub btnKeluar_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnKeluar.Click
        Me.Close()
    End Sub

    Private Sub BtnUbah_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnUbah.Click
        dr = openDR("SELECT * FROM tb_user WHERE user='" & user & "' AND
pass='" & TxtPass1.Text & "'")
        If Not dr.Read Then
            msgError("Password lama salah!")
        ElseIf TxtPass2.Text <> TxtPass3.Text Then
            msgError("Password baru dan konfirmasi password baru tidak sama")
        ElseIf TxtPass2.Text.Length < 4 Then
            msgError("Password minimal 4 karakter")
        Else
            Execute("UPDATE tb_user SET pass='" & TxtPass2.Text & "' WHERE
user='" & user & "'")
            msgInfo("Password berhasil diubah!")
            Me.Close()
        End If
    End Sub
End Class

```

```

        Private Sub FrmPassword_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load

        End Sub
End Class

```

10. Form ModMysql

```

Imports MySql.Data.MySqlClient
Imports vb = Microsoft.VisualBasic
Imports System.Globalization

Module ModMySQL
    Private Conn As New MySqlConnection
    Private Cmd As MySqlCommand
    Private Da As MySqlDataAdapter
    Private Ds As New DataSet
    Public Dr As MySqlDataReader
    Public User As String = "admin", Level As String = "admin"

    Private Sub Connect()
        Try
            If Conn.State = ConnectionState.Open Then Exit Sub
            Conn = New
MySqlConnection("SERVER=localhost;UID=root;PASSWORD=;DATABASE=ls_vb_mulia_jaya"
)
            Conn.Open()
            Application.CurrentCulture = New CultureInfo("en-US")
        Catch ex As Exception
            MsgError("ERROR: " & ex.Message)
        End Try
    End Sub

    Public Function GetConnection() As MySqlConnection
        Connect()
        Return Conn
    End Function

    Public Function OpenDT(ByVal sql As String, ByVal ParamArray parameters()
As Object) As DataTable
        Try
            CloseDR()
            Ds.Tables.Clear()

            Cmd = New MySqlCommand(sql, GetConnection())
            SetParameter(Cmd, parameters)
            Da = New MySqlDataAdapter(Cmd)
            Da.Fill(Ds)

```

```

        Return Ds.Tables(0)
    Catch ex As Exception
        MsgError("ERROR: " & ex.Message & vbCrLf & sql)
        Return Nothing
    End Try
End Function

Public Function OpenDR(ByVal sql As String, ByVal ParamArray parameters()
As Object) As MySqlDataReader
    Try
        CloseDR()
        Cmd = New MySqlCommand(sql, GetConnection())
        SetParameter(Cmd, parameters)
        Return Cmd.ExecuteReader()
    Catch ex As Exception
        MsgError("ERROR: " & ex.Message & vbCrLf & sql)
        Return Nothing
    End Try
End Function

Private Sub CloseDR()
    Try
        Dr.Close()
    Catch ex As Exception

    End Try
End Sub

Public Sub Execute(ByVal sql As String, ByVal ParamArray parameters() As
Object)
    Try
        CloseDR()
        Cmd = New MySqlCommand(sql, GetConnection())
        SetParameter(Cmd, parameters)
        Cmd.ExecuteNonQuery()
    Catch ex As Exception
        MsgError("ERROR: " & ex.Message & vbCrLf & sql)
    End Try
End Sub

Public Sub Delete(tb As String, where As String, ParamArray parameters() As
Object)
    execute("DELETE FROM " & tb & " WHERE " & where, parameters)
End Sub

Public Function GetVar(Sql As String, ParamArray parameters() As Object) As
Object
    Dim Rows As DataTable = OpenDT(Sql, parameters)
    If Rows.Rows.Count > 0 Then
        Return Rows.Rows(0)(0)
    End If
    Return Nothing
End Function

```

```

Private Sub SetParameter(ByVal cmd As MySqlCommand, ByVal ParamArray
parameters() As Object)
    For a As Integer = 0 To parameters.Count - 1
        Dim parameterName As String = "@" & Trim(Str(a))
        Dim value As Object = parameters(a)
        cmd.Parameters.AddWithValue(parameterName, value)
    Next
End Sub

Public Function sRight(ByVal str As String, ByVal Length As Integer) As
String
    Return vb.Right(str, Length)
End Function

Public Sub MsgError(ByVal msg As String)
    MsgBox(msg, vbExclamation + MsgBoxStyle.OkOnly, "Error")
End Sub

Public Sub MsgInfo(ByVal msg As String)
    MsgBox(msg, vbInformation + MsgBoxStyle.OkOnly, "Informasi")
End Sub

Public Function MsgAsk(ByVal msg As String) As MsgBoxResult
    Return MsgBox(msg, vbYesNo + vbQuestion, "Konfirmasi")
End Function

Public Function KodeOtomatis(field As String, table As String, prefix As
String, length As Integer) As String
    Dr = OpenDR("SELECT " & field & " FROM " & table & " WHERE " & field &
" REGEXP '" & prefix & "[0-9]{" & length & "}' ORDER BY " & field & " DESC")
    If Dr.Read Then
        Return prefix & Right(StrDup(length, "0") & Val(Right(Dr(0),
length)) + 1, length)
    Else
        Return prefix & Right(StrDup(length, "0") & 1, length)
    End If
End Function
End Module

```



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ROYAL**

SK Mendikbud Ristek No : 386/E/O/2024

Alamat: Jl. Prof. H.M. Yamin S.H., No. 173, Kisaran,
Kab. Asahan, Prov. Sumatera Utara Indonesia. 21224

Telp. 0623 - 41079

Kisaran, 09 Desember 2024

Nomor : 199-133/PP-00.10/UR/XII/2024

Hal : Permohonan Riset

Kepada Yth,

Pimpinan MS Glow Putri Sei Piring

di_

Tempat

Dengan Hormat,

Semoga Tuhan Yang Maha Esa senantiasa memberikan kemudahan bagi kita semua dalam menjalankan aktivitas sehari-hari.

Universitas Royal sebagai salah satu perguruan tinggi penyelenggaraan program pendidikan Strata I (S1) dengan ini mengajukan permohonan kepada Bapak/Ibu agar kiranya dapat menerima Mahasiswa/I kami melaksanakan kegiatan Riset yang dilaksanakan pada tanggal **10 Desember 2024 - 10 Januari 2025**. Berikut ini data mahasiswa yang akan melaksanakan Riset :

No	Nama Mahasiswa	Program Studi	L/P	NIM
1	Anisyah Nurhasanah Br Tampubolon	Sistem Informasi-S1	P	21.22.0061

Adapun Tujuan dilaksanakannya Riset ini untuk Menyelesaikan Penulisan Skripsi Program Strata I (S1) Universitas Royal. Judul Skripsi : "**Peramalan Kebutuhan Produk MS Glow dengan Least Square di Toko MS Glow Putri**".

Demikian permohonan ini kami sampaikan. Atas perhatian, kesediaan, dan kerjasama yang baik kami ucapkan terima kasih.



Tembusan :
- Arsip



STORE MS GLOW PUTRI

Jl. Lintas Sumatera, Sei Piring, Rahuning, Kab. Asahan,
Sumatera Utara 21273

Hal : Balasan

Kepada Yth : Rektor

Universitas Royal

Jl. Prof. H.M Yamin S.H, No. 175, Kisaran

Kab. Asahan, Prov. Sumatera Utara

21224

Dengan Hormat,

Yang bertanda tangan di bawah ini :

Nama : Setia Putri Ananda Lubis

Jabatan : Owner Ms Glow Putri

Menerangkan bahwa,

Nama : Anisyah Nurhasanah Br Tampubolon

Nim : 21220061

Jurusan : Sistem Informasi

Universitas : Universitas Royal

Telah kami setuju untuk mengadakan penelitian di Store Ms Glow Putri dengan judul

“ Peramalan Kebutuhan Produk Ms Glow dengan Least Square di Toko Ms Glow Putri”

Adapun data-data dari store kami sebagai berikut :

No.	Produk	Periode 2024/2025											
		Apr	Mei	Jun	Jul	Agu	Sep	Okt	Nov	Dec	Jan	Feb	Mar
1	Ms Glow Night Cream Whitening	276	266	243	187	247	229	170	242	198	189	173	164
2	Ms Glow Day Cream Whitening	200	170	260	210	225	230	270	340	200	245	220	200
3	Toner Ms Glow Whitening	267	259	250	241	233	224	216	257	298	160	181	173
4	Facial Wash Ms Glow Whitening	162	225	159	210	173	251	187	253	250	177	154	195
5	Ms Glow Night Cream Acne	221	304	336	259	236	227	205	195	238	206	190	169
6	Ms Glow Day Cream Acne	193	239	228	305	219	253	282	247	256	343	266	254
7	Facial Wash Ms Glow	265	320	280	325	280	230	215	250	196	260	255	227
8	Hb Siang	124	139	156	195	226	210	276	234	225	237	245	265
9	Hb Malam	145	180	285	210	235	250	275	290	305	320	335	350
10	Sunscreen	243	215	206	193	214	189	218	205	248	354	242	266

Demikian surat ini kami sampaikan, dan atas kerja samanya kami mengucapkan terimakasih.

Yang bertanda tangan di bawah ini :

Setia Putri Ananda Lubis
Owner



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Office: Jln. Prof. H.M Yamin, SH No. 173 Telp & Faks. 0623-41079 Ext. 25 Lt. 1 Kisaran, Kab. Asahan, Prov. Sumatera Utara

LEMBAR KONSULTASI SKRIPSI

Nama Mahasiswa : ANISYAH NURHASANAH BR TAMPUBOLON
NIM : 21220061
Program Studi : Sistem Informasi
Judul Skripsi/TA : PERAMALAN KEBUTUHAN PRODUK MS GLOW DENGAN LEAST SQUARE DI TOKO MS GLOW PUTRI
Dosen Pembimbing : 1. RURI ASHARI DALIMUNTHE, M.Kom
: 2. CHITRA LATIFFANI, M.Hum
Lembar Konsultasi : Pembimbing 1
Tanggal Pertemuan : 28 November 2024
Pertama

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
28-11-2024	REVISI BAB I 1. DOWNLOAD PANDUAN SKRIPSI 2. PERBAIKI LATAR BELAKANG MASALAH 3. TAMBAH DATA PADA LATAR BELAKANG 4. REFERENSI JURNAL 5. TUJUAN HARUS JELAS		BAB I (Revisi)
07-12-2024	PERBAIKI BAB I 1. PERBAIKI DATA LATAR BELAKANG (TABEL DATA) 2. IDENTIFIKASI TUJUAN HARUS JELAS 3. REFERENSI JURNAL TERBARU MINIMAL 3		BAB I (Revisi)
09-12-2024	ACC BAB I, LANJUT BAB BERIKUTNYA		BAB I (ACC)
12-12-2024	PERBAIKI BAB II 1. PAHAM PERAMALAN 2. PAHAM METODE YANG DITERAPKAN 3. TINJAUAN TERBARU 4. PERBAIKI SEJARAH PERUSAHAAN		BAB II (Revisi)
17-12-2024	ACC BAB II, LANJUT BAB BERIKUTNYA		BAB II (ACC)
19-12-2024	REVISI BAB III 1. PAHAM METODE PENELITIAN (KUALITATIF/KUANTITATIF) 2. SUB JUDUL SESUAIKAN DENGAN PANDUAN 3. WAKTU PENELITIAN SESUAIKAN DENGAN WAKTU SAAT SEKARANG INI		BAB III (Revisi)
27-12-2024	ACC BAB III, LANJUT PERSIAPAN SEMPRO		BAB III (ACC)
28-12-2024	ACC SEMPRO 1. PAHAM PROPOSAL 2. PAHAM FORCASTING 3. PAHAM METODE YANG DIGUNAKAN 4. PAHAM DATA YANG INGIN DIHITUNG/PERAMALAN 1 TAHUN 5. LENGKAPI PROPOSAL 6. LENGKAPI DATA		Seminar Proposal (ACC)

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
	7. SIAPKAN PPT 8. BELAJAR		
25-02-2025	PERBAIKI BAB IV 1. PAHAM ASI LAMA DAN ASI YANG DIUSULKAN 2. PAHAM PERHITUNGAN PERAMALAM (MAPE ERROR dll) 3. SESUAIKAN HASIL PERHITUNGAN DI BAB IV DENGAN DI SYSTEM		BAB IV (Revisi)
04-03-2025	PERBAIKI BAB IV 1. PERBAIKI PERHITUNGAN LEAST SQUARE 2. SESUAIKAN DI SYSTEM DENGAN DI EXEL 3. PERBAIKI CETAK LAPORAN 4. PAHAM MAPE ERROR		BAB IV (Revisi)
07-03-2025	ACC BAB IV, LANJUT BAB BERIKUTNYA		BAB IV (ACC)
07-03-2025	ACC BAB V, LANJUT BAB BERIKUTNYA		BAB V (ACC)
07-03-2025	ACC BAB VI, LENGKAPI BERKAS SKRIPSI		BAB VI (ACC)
07-03-2025	ACC SYSTEM 1. FAHAM SYSTEM 2. FAHAM PERHITUNGAN LEAST SQUARE 3. SIAPKAN DATA EXEL 4. PAHAM MAPE ERROR		Pengujian Alat/Aplikasi (ACC)
12-03-2025	ACC SEMHAS 1. LENGKAPI SKRIPSI 2. PAHAM FORECASTING 3. LENGKAPI DAN FAHAM DATA 4. PAHAM METODE 5. PAHAM SYSTEM/APLIKASI PERHITUNGAN 6. PAHAM MAPE ERROR 7. SIAPKAN SLIDE PPT SEMHAS 8. SIAPKAN BUKTI DOKUMEN SEPerti JURNAL REFERENSI DAN DATA 1 TAHUN PENJUALAN REAL DARI TOKO 9. PAHAM SLIDE PRESENTASI SEMHAS 10. BELAJAR		Seminar Hasil (ACC)
08-04-2025	ACC SIDANG MEJA HIJAU 1. PAHAM SKRIPSI 2. SIAPKAN DATA/JURNAL 3. SIAPKAN PPT SIDANG 4. SIAPKAN PERHITUNGAN MANUAL/EXEL 5. BELAJAR		Sidang Meja Hijau (ACC)

Kisaran, 9 April 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom.
NIDN: 0101068701



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LEMBAR KONSULTASI SKRIPSI

Nama Mahasiswa : ANISYAH NURHASANAH BR TAMPUBOLON
NIM : 21220061
Program Studi : Sistem Informasi
Judul Skripsi/TA : PERAMALAN KEBUTUHAN PRODUK MS GLOW DENGAN LEAST SQUARE DI TOKO MS GLOW PUTRI
Dosen Pembimbing : 1. RURI ASHARI DALIMUNTHER, M.Kom
2. CHITRA LATIFFANI, M.Hum
Lembar Konsultasi : Pembimbing 2
Tanggal Pertemuan Pertama : 11 Desember 2024

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
11-12-2024	Sesuaikan isi dengan judul, perbaiki penulisan dalam bahasa asing.		BAB I (Revisi)
18-12-2024	Lanjut Bab II		BAB I (ACC)
18-12-2024	Sesuaikan penulisan dengan panduan penulisan skripsi, sesuaikan isi dng judul penelitian		BAB II (Revisi)
24-12-2024	Lanjut Bab III		BAB II (ACC)
24-12-2024	Sesuaikan penulisan dengan panduan penulisan skripsi, sesuaikan isi dng judul penelitian		BAB III (Revisi)
28-12-2024	Lanjut seminar proposal		BAB III (ACC)
28-12-2024	Lengkapi berkas dan kuasai materi		Seminar Proposal (ACC)
05-03-2025	Lanjut Bab V		BAB IV (ACC)
07-03-2025	Lanjut pengujian alat/aplikasi		BAB VI (ACC)
07-03-2025	Lanjut Bab VI		BAB V (ACC)
12-03-2025	Lanjut seminar hasil		Pengujian Alat/Aplikasi (ACC)
12-03-2025	Siapkan berkas dan kuasai materi		Seminar Hasil (ACC)
09-04-2025	Persiapkan berkas dan kuasai materi		Sidang Meja Hijau (ACC)

Kisaran, 9 April 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom.
NIDN: 0101068701

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A. Identitas Pribadi

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1. MIN 3 asahan (2009 - 2015)
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3. SMA N 1 Pulau Rakyat (2018 - 2021)

Demikian daftar riwayat hidup ini di perbuat dengan sebenarnya.

Kisaran, 13 April 2025
Penulis

Anisyah Nurhasanah Tampubolon
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