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LIST PROGRAM

1. form hitung.vb

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

    Dim MaxPeriode = 0

    Dim AC As ClassDMA

    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")
        TxtNPeriode.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()
        TxtMovingAvg.Text = 2
        'BtnHitung_Click(Nothing, Nothing)
    End Sub

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

        AC = New ClassDMA(DtNilai)
        With Dgv1
            .Columns.Clear()
            .Columns.Add("periode", "Periode")
            .Columns.Add("nilai", TxtJenis.Text)
            .Columns("nilai").formatNumber()
            .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.Dt)
            Next
        End With
        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(TxtNPeriode.Text) < 1 Then
            msgInfo("Masukkan next periode minimal " & 1)
        End Sub
    End Sub
```

```

ElseIf Val(TxtMovingAvg.Text) < 2 Or Val(TxtMovingAvg.Text) >
Dgv1.Rows.Count - 1 Then
    msgInfo("Masukkan moving agv dari " & 2 & " sampai " &
(Dgv1.Rows.Count - 1))
Exit Sub
End If

AC.hitung(MaxPeriode, Val(TxtNPeriode.Text),
Val(TxtMovingAvg.Text))
With Dgv1
    .Columns.Clear()
    .Columns.Add("periode", "Periode")
    .Columns("periode").DefaultCellStyle.Format = "MMM yyyy"
    .Columns.Add("nilai", TxtJenis.Text)
    .Columns("nilai").formatNumber()
    .Columns.Add("mt", "Mt")
    .Columns("mt").formatNumber()
    .Columns.Add("mt_aksen", "Mt'")
    .Columns("mt_aksen").formatNumber()
    .Columns.Add("at", "At")
    .Columns("at").formatNumber(2)
    .Columns.Add("bt", "Bt")
    .Columns("bt").formatNumber(2)
    .Columns.Add("ft", "Ft")
    .Columns("ft").formatNumber(2)
    .Columns.Add("Err", "Err")
    .Columns("Err").formatNumber()
    .Columns.Add("AbsErr", "AbsErr")
    .Columns("AbsErr").formatNumber()
    .Columns.Add("Err^2", "Err^2")
    .Columns("Err^2").formatNumber()
    .Columns.Add("Err/Dt", "Err/Dt")
    .Columns("Err/Dt").formatNumber(3)

    For Each Row As KeyValuePair(Of Date, Nilai) In AC.DNilai
        .Rows.Add(Row.Value.Periode, Row.Value.Dt, Row.Value.Mt,
Row.Value.MtAksen, Row.Value.At, Row.Value.Bt, Row.Value.Ft,
Row.Value.Err, Row.Value.AbsErr, Row.Value.ErrKuadrat, Row.Value.ErrDt)
    Next

    For Each Row As KeyValuePair(Of Date, Nilai) In AC.DFt
        .Rows.Add(Row.Value.Periode, Nothing, Nothing, Nothing,
Nothing, Nothing, Math.Round(Row.Value.Ft, 2))
        .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Yellow
    Next
    .Rows.Add("MAD", Nothing, AC.MAD)
    .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Cyan
    .Rows.Add("MAPE", Nothing, AC.MAPE)
    .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Cyan
    .Rows.Add("MSE", Nothing, AC.MSE)
    .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Cyan
    .Rows.Add("RMSE", Nothing, AC.RMSE)
    .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Cyan

End With

```

```

        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 periode, 0.0 AS
nilai, 0.0 AS fx, 0.0 AS Err, 0.0 AS AbsErr, 0.0 AS ErrKuadrat, 0.0 AS
ErrDt")
        Dim DtGrafik As DataTable = openDT("SELECT ' ' AS periode, 0.0 AS
nilai, 0.0 AS fx")

        Dt.Clear()
        DtGrafik.Clear()
        For Each row As DataGridViewRow In Dgv1.Rows
            Dim p As String = row.Cells(0).Value
            If (IsDate(row.Cells(0).Value)) Then
                Dim d As Date = row.Cells(0).Value
                p = d.ToString("MMM yyyy")
            End If

            Dt.Rows.Add(p, row.Cells(1).Value, row.Cells(6).Value,
row.Cells(7).Value, row.Cells(8).Value, row.Cells(9).Value,
row.Cells(10).Value)

            If row.Index < Dgv1.Rows.Count - 4 Then
                DtGrafik.Rows.Add(p, row.Cells(1).Value,
row.Cells(2).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

```

2. form jenis.vb

```

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()
    End Sub

```

```

        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

```

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3. formjenistambah.vb

```
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
                MsgBox("Field bertanda * tidak boleh kosong!")
            ElseIf Not EditState And OpenDT("SELECT * FROM tb_jenis WHERE
            kode_jenis=@0", TxtKode.Text).Rows.Count > 0 Then
                MsgBox("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
        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
```

End Class

4. formperiode.vb

```
Public Class FrmPeriode
```

```
    Private Sub BtnRefresh_Click(sender As Object, e As EventArgs) Handles
BtnRefresh.Click
        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
        Dgv.Columns("nama_periode").DefaultCellStyle.Format = "MMM yyyy"

        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

        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.getValAt(row.Index, "kode_periode"))
            While Dr.Read()
                Dgv(Dr("kode_jenis").ToString(), row.Index).Value =
Dr("nilai")
            End While
        Next
    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
End Class
```

```

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
    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 FrmPeriodeUbah
        f.TxtKode.Text = Dgv.getSelAt("kode_periode")
        If f.ShowDialog = DialogResult.Yes Then
            BtnRefresh_Click(sender, e)
        End If
    End If
End Sub
End Class

```

5. formperiodetambah.vb

```

Public Class FrmPeriodeTambah
    Public Kode = ""
    Public KodeResponden = ""

    Private Sub FrmPeriodeTambah_Load(ByVal sender As System.Object, ByVal
e As System.EventArgs) Handles MyBase.Load
        TxtKode.Text = KodeOtomatis("kode_periode", "tb_periode", "P", 2)
        TxtNama.Text = ""

        Dim Top As Integer = TxtNama.Top + TxtKode.Height + 9
        Dim indeks As Integer = 0
        Dim DtDetail As DataTable = OpenDT("SELECT * FROM tb_jenis ORDER BY
kode_jenis")
        For Each Row As DataRow In DtDetail.Rows

            Dim l As New Label()
            l.Text = Row("nama_jenis")
            l.Location = New Point(Label1.Left, Top)
            Me.Controls.Add(l)

```

```

Dim txt As New TextBox()
txt.Location = New Point(TxtKode.Left, Top)
txt.Tag = Row("kode_jenis")
txt.Width = TxtKode.Width
txt.Text = 0

Me.Controls.Add(txt)

Top += 32
indeks += 1
Next
BtnSimpan.Top = Top
BtnKeluar.Top = Top
Me.Height = Top + 100

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 BtnSimpan_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnSimpan.Click
If TxtNama.Text = "" Then
MsgInfo("Field bertanda * tidak boleh kosong!")
ElseIf OpenDT("SELECT * FROM tb_periode WHERE kode_periode=@0",
TxtKode.Text).Rows.Count > 0 Then
MsgInfo("Kode periode sudah terdaftar!")
Else
execute("INSERT INTO tb_periode (kode_periode, nama_periode)
VALUES (@0, @1)", TxtKode.Text, TxtNama.Value)
For Each c As Control In Me.Controls
If TypeOf c Is TextBox And c.Tag <> "" Then
Dim txt As TextBox = c
Execute("INSERT INTO tb_nilai (kode_periode,
kode_jenis, nilai) VALUES (@0, @1, @2)", TxtKode.Text, txt.Tag,
Val(txt.Text))
End If
Next
MsgInfo("Data tersimpan")
Me.DialogResult = vbYes
End If
End Sub
End Class

```

6. formperiodeubah.vb

```

Public Class FrmPeriodeUbah
Public Kode = ""
Public KodeResponden = ""

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

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")
    TxtKode.Enabled = False

    Dim Top As Integer = TxtNama.Top + TxtKode.Height + 9
    Dim indeks As Integer = 0
    Dim DtDetail As DataTable = openDT("SELECT n.*, j.nama_jenis
FROM tb_nilai n INNER JOIN tb_jenis j ON j.kode_jenis=n.kode_jenis WHERE
kode_periode=@0 ORDER BY j.kode_jenis", TxtKode.Text)

    For Each Row As DataRow In DtDetail.Rows

        Dim l As New Label()
        l.Text = Row("nama_jenis")
        l.Location = New Point(Label1.Left, Top)
        Me.Controls.Add(l)

        Dim txt As New TextBox()
        txt.Location = New Point(TxtKode.Left, Top)
        txt.Tag = Row("kode_jenis")
        txt.Width = TxtKode.Width
        txt.Text = Row("nilai")

        Me.Controls.Add(txt)

        Top += 32
        indeks += 1
    Next
    BtnSimpan.Top = Top
    BtnKeluar.Top = Top
    Me.Height = Top + 100
End If
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 BtnSimpan_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles BtnSimpan.Click
    If TxtNama.Text = "" Then
        MsgBox("Field bertanda * tidak boleh kosong!")
    Else
        execute("UPDATE tb_periode SET nama_periode=@0 WHERE
kode_periode=@1", TxtNama.Value, TxtKode.Text)
        For Each c As Control In Me.Controls
            If TypeOf c Is TextBox And c.Tag <> "" Then
                Dim txt As TextBox = c
                Execute("UPDATE tb_nilai SET nilai=@0 WHERE
kode_periode=@1 AND kode_jenis=@2", Val(txt.Text), TxtKode.Text, txt.Tag)
            End If
        Next
        MsgBox("Data tersimpan")
        Me.DialogResult = vbYes
    End If
End Sub
End Class

```

7. formutama.vb

```
Public Class FrmUtama
```

```
    Private Sub FrmUtama_Load(ByVal sender As System.Object, ByVal e As  
System.EventArgs) Handles MyBase.Load  
        sb1.Text = "User: " & user  
        sb2.Text = Format(Date.Now, "dd MMMM yyyy HH:mm:ss")  
    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 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  
  
End Class
```

8. rpthitung.vb

```
'-----  
' <auto-generated>  
'   This code was generated by a tool.  
'   Runtime Version:4.0.30319.42000  
'  
'   Changes to this file may cause incorrect behavior and will be lost if  
'   the code is regenerated.  
' </auto-generated>  
'-----
```

```
Option Strict Off  
Option Explicit On
```

```
Imports CrystalDecisions.CrystalReports.Engine  
Imports CrystalDecisions.ReportSource  
Imports CrystalDecisions.Shared  
Imports System  
Imports System.ComponentModel
```

```
Public Class RptHitung  
    Inherits ReportClass
```

```
    Public Sub New()  
        MyBase.New  
    End Sub
```

```
    Public Overrides Property ResourceName() As String  
        Get  
            Return "RptHitung.rpt"  
        End Get  
        Set  
            'Do nothing  
        End Set  
    End Property
```

```
    Public Overrides Property NewGenerator() As Boolean  
        Get  
            Return true  
        End Get  
        Set  
            'Do nothing  
        End Set  
    End Property
```

```
    Public Overrides Property FullResourceName() As String  
        Get  
            Return "DMA.RptHitung.rpt"  
        End Get  
        Set  
            'Do nothing  
        End Set  
    End Property
```

```
    <Browsable(false), _
```

```
    DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSeria  
    lizationVisibility.Hidden)> _
```

```

        Public ReadOnly Property Section1() As
CrystalDecisions.CrystalReports.Engine.Section
        Get
            Return Me.ReportDefinition.Sections(0)
        End Get
    End Property

    <Browsable(false), _
DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSeri
alizationVisibility.Hidden)> _
    Public ReadOnly Property Section2() As
CrystalDecisions.CrystalReports.Engine.Section
    Get
        Return Me.ReportDefinition.Sections(1)
    End Get
    End Property

    <Browsable(false), _
DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSeri
alizationVisibility.Hidden)> _
    Public ReadOnly Property Section3() As
CrystalDecisions.CrystalReports.Engine.Section
    Get
        Return Me.ReportDefinition.Sections(2)
    End Get
    End Property

    <Browsable(false), _
DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSeri
alizationVisibility.Hidden)> _
    Public ReadOnly Property Section4() As
CrystalDecisions.CrystalReports.Engine.Section
    Get
        Return Me.ReportDefinition.Sections(3)
    End Get
    End Property

    <Browsable(false), _
DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSeri
alizationVisibility.Hidden)> _
    Public ReadOnly Property Section5() As
CrystalDecisions.CrystalReports.Engine.Section
    Get
        Return Me.ReportDefinition.Sections(4)
    End Get
    End Property
End Class

<System.Drawing.ToolboxBitmapAttribute(GetType(CrystalDecisions.[Shared].Ex
portOptions), "report.bmp")> _
Public Class CachedRptHitung
    Inherits Component
    Implements ICachedReport

    Public Sub New()
        MyBase.New
    End Sub

```

```

End Sub

<Browsable(false), _

DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSer-
ializationVisibility.Hidden)> _
    Public Overridable Property IsCacheable() As Boolean Implements
CrystalDecisions.ReportSource.ICachedReport.IsCacheable
    Get
        Return true
    End Get
    Set
        ,
    End Set
End Property

<Browsable(false), _

DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSer-
ializationVisibility.Hidden)> _
    Public Overridable Property ShareDBLogonInfo() As Boolean Implements
CrystalDecisions.ReportSource.ICachedReport.ShareDBLogonInfo
    Get
        Return false
    End Get
    Set
        ,
    End Set
End Property

<Browsable(false), _

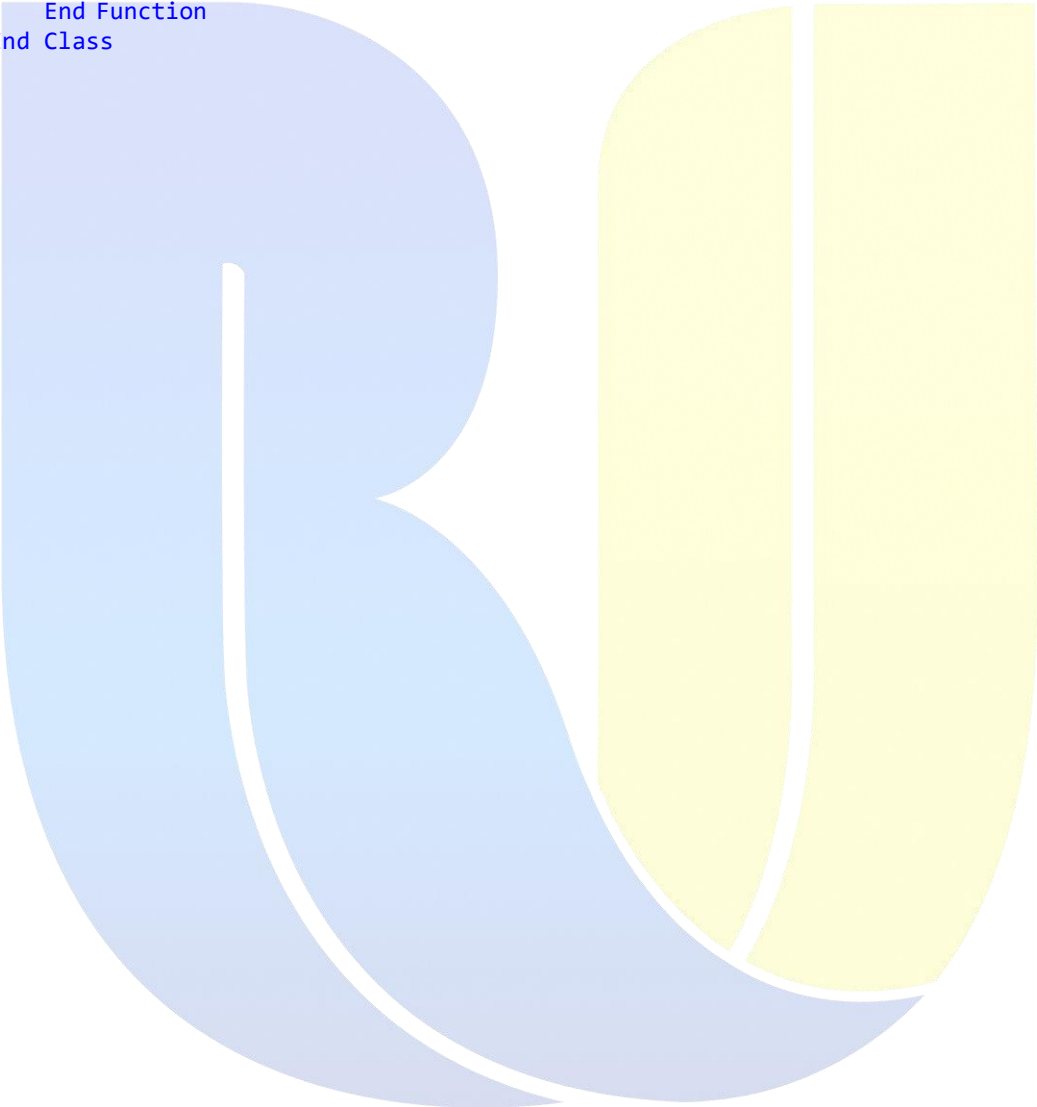
DesignerSerializationVisibilityAttribute(System.ComponentModel.DesignerSer-
ializationVisibility.Hidden)> _
    Public Overridable Property CacheTimeout() As System.TimeSpan
Implements CrystalDecisions.ReportSource.ICachedReport.CacheTimeout
    Get
        Return CachedReportConstants.DEFAULT_TIMEOUT
    End Get
    Set
        ,
    End Set
End Property

    Public Overridable Function CreateReport() As
CrystalDecisions.CrystalReports.Engine.ReportDocument Implements
CrystalDecisions.ReportSource.ICachedReport.CreateReport
    Dim rpt As RptHitung = New RptHitung()
    rpt.Site = Me.Site
    Return rpt
End Function

    Public Overridable Function GetCustomizedCacheKey(ByVal request As
RequestContext) As String Implements
CrystalDecisions.ReportSource.ICachedReport.GetCustomizedCacheKey
    Dim key As [String] = Nothing
    '// The following is the code used to generate the default
    '// cache key for caching report jobs in the ASP.NET Cache.
    '// Feel free to modify this code to suit your needs.
    '// Returning key == null causes the default cache key to

```

```
'// be generated.  
,  
'key = RequestContext.BuildCompleteCacheKey(  
, request,  
, null, // sReportFilename  
, this.GetType(),  
, this.ShareDBLogonInfo );  
Return key  
End Function  
End Class
```



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LEMBAR KONSULTASI SKRIPSI

Nama Mahasiswa : RAHMA DIANA DAULAY
NIM : 21220483
Program Studi : Sistem Informasi
Judul Skripsi/TA : PENERAPAN METODE DOUBLE MOVING AVERAGE (DMA) DALAM PERAMALAN
PENJUALAN SPAREPART ELETRONIK DI TOKO HARADA JAYA ELEKTRONIK KISARAN
Dosen Pembimbing : 1. JHONSON EFENDI HTG, M.Kom
2. MUTHIA DEWI, M.Pd
Lembar Konsultasi : Pembimbing 1
Tanggal Pertemuan : 26 November 2024
Pertama*

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
26-11-2024	Perbaiki latar belakang dan di tambahkan rujukan penelitiannya		BAB I (Revisi)
29-11-2024	Lanjut ke bab 2		BAB I (ACC)
30-11-2024	perbaiki bab 2 di hipotesa dan teori sistem pakar di buat referensinya masing dengan sistem mendeley		BAB II (Revisi)
02-12-2024	ACC BAB II lanjut Bab III		BAB II (ACC)
03-12-2024	revisi Metode Penelitian yang digunakan		BAB III (Revisi)
09-12-2024	lengkapi berkas		BAB III (ACC)
09-12-2024	daftar sempro		Seminar Proposal (ACC)
12-02-2025	Perbaiki Analisa data dan UML		BAB IV (Revisi)
15-02-2025	lanjut BAB V		BAB IV (ACC)
22-02-2025	Lanjut BAB 6		BAB V (ACC)
22-02-2025	lengkapi berkas		BAB VI (ACC)
22-02-2025			Pengujian Alat/Aplikasi (ACC)
22-02-2025	Daftar seminar hasil		Seminar Hasil (ACC)

Kisaran, 27 Februari 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom.
NIDN: 0101068701



LEMBAR KONSULTASI SKRIPSI

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Program Studi : Sistem Informasi
PENERAPAN METODE DOUBLE MOVING AVERAGE (DMA) DALAM PERAMALAN
Judul Skripsi/TA : PENJUALAN SPAREPART ELETRONIK DI TOKO HARADA JAYA ELEKTRONIK
KISARAN
Dosen Pembimbing : 1. JHONSON EFENDI HTG, M.Kom
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Lembar Konsultasi : Pembimbing 2
Tanggal Pertemuan : 28 November 2024
Pertama

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
28-11-2024	Perbaiki latar belakang masalah	Mth	BAB I (Revisi)
02-12-2024	Lanjut bab 2	Mth	BAB I (ACC)
09-12-2024	Perbaiki penulisan label/gambar	Mth	BAB II (Revisi)
12-12-2024	Tambahkan Daftar Referensi	Mth	BAB II (Revisi)
13-12-2024	Lanjut Bab 3	Mth	BAB II (ACC)
23-12-2024	Lanjut Sempro	Mth	BAB III (ACC)
23-12-2024	ACC SEMPRO	Mth	Seminar Proposal (ACC)
01-02-2025	Perbaiki tulisan pada gambar/label dll	Mth	BAB IV (Revisi)
05-02-2025	lanjut bab 5	Mth	BAB IV (ACC)
10-02-2025	Lanjut bab 6	Mth	BAB V (ACC)
14-02-2025	Perbaiki kesimpulan	Mth	BAB VI (Revisi)
20-02-2025	Lanjut aplikasi	Mth	BAB VI (ACC)
21-02-2025	ACC aplikasi	Mth	Pengujian Alat/Aplikasi (ACC)
22-02-2025	ACC SEMHAS	Mth	Seminar Hasil (ACC)

Kisaran, 27 Februari 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom,
NIDN: 0101068701

Kisaran, 23 November 2024

Nomor : 199-073/PP-00.10/UR/XI/2024

Hal : Permohonan Riset

Kepada Yth,

Pemilik Harada Jaya Elektronik Kisaran

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 1 (S1) dengan ini mengajukan permohonan kepada Bapak/Ibu agar kiranya dapat menerima Mahasiswa/I kami melaksanakan kegiatan Riset yang dilaksanakan pada tanggal 25 November 2024 - 25 Desember 2024. Berikut ini data mahasiswa yang akan melaksanakan Riset :

No	Nama Mahasiswa	Program Studi	L/P	NIM
1	Rahma Diana Daulay	Sistem Informasi-S1	P	21.22.0483

Adapun Tujuan dilaksanakannya Riset ini untuk Menyelesaikan Penulisan Skripsi Program Strata 1 (S1) Universitas Royal. Judul Skripsi : "*Penerapan Metode Double Moving Average (DMA) dalam Peramalan Penjualan Sparepart Elektronik di Toko Harada Jaya Elektronik Kisaran*".

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

Hormat Kami
Rektor



UNIVERSITAS
ROYAL
Wan Mariatul Kifti, M.M.
NIDN. 0114057302

Tembusan :

- Arsip

TOKO HARADA JAYA ELEKTRONIK KISARAN

Jl. Imam Bonjol No.55, Kisaran Kota, Kec. Kota Kisaran Timur, Kabupaten Asahan, Sumatera Utara 21211

Nomor : 01/HDE-KIS/XII/2024

Kisaran, 14 Desember 2024

Perihal : Pemberian Izin Riset

Kepada Yth:

Bapak/Ibu Pimpinan Universitas Royal Kisaran

di_

Tempat

Dengat Hormat,

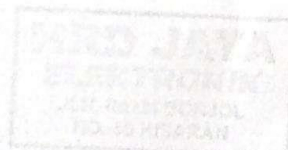
Berdasarkan surat saudara nomor : 199-073/PP-00.10/UR/XI/2024, tanggal 23 November 2024 perihal permohonan riset. Dengan ini kami menyatakan tidak keberatan dan memberikan izin kepada mahasiswi yang akan melaksanakan Riset di Toko Harada Jaya Elektronik Kisaran sebagai berikut:

No	Nama Mahasiswa	Program Studi	Jenis Kelamin	NIM
1	Rahma Diana Daulay	Sistem Informasi	Perempuan	21.22.0483

Demikian surat ini kami sampaikan, dan atas Perhatiannya kami ucapkan terima kasih.

Pimpinan,

Toko Harada Jaya Elektronik
Kisaran



Zulfan Efendi

DAFTAR RIWAYAT HIDUP

A. Identitas Pribadi

Nama Lengkap : Rahma Diana Daulay
Tempat/tanggal lahir : Tanjungbalai, 12 januari 2002
Jenis Kelamin : Perempuan
Agama : Islam
Kebangsaan : Indonesia
Suku : Batak Mandaling
Alamat : Jl. M.abbas Gg.Amanah LK III, Kel. TanjungBalai Kota II
Kec.TanjungBalai Selatan,
Nama Ayah : Safari Daulay
Nama Ibu : Mardiana
No.HP : 083876448693



B. Riwayat Pendidikan

SD (2008-2014) : SD NEGERI 134416
SMP (2014-2017) : SMP NEGERI 4 Tanjung Balai
SMK (2017-2020) : SMK NEGERI 4 Tanjung Balai
Kuliah (2021-2025) : Universitas Royal

Demikianlah daftar riwayat hidup ini diperbuat dengan sebenarnya.

Tanjungbalai, 26 Maret 2025

Penulis,

Rahma Diana Daulay

NIM: 21.22.0483

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