

DAFTAR PUSTAKA

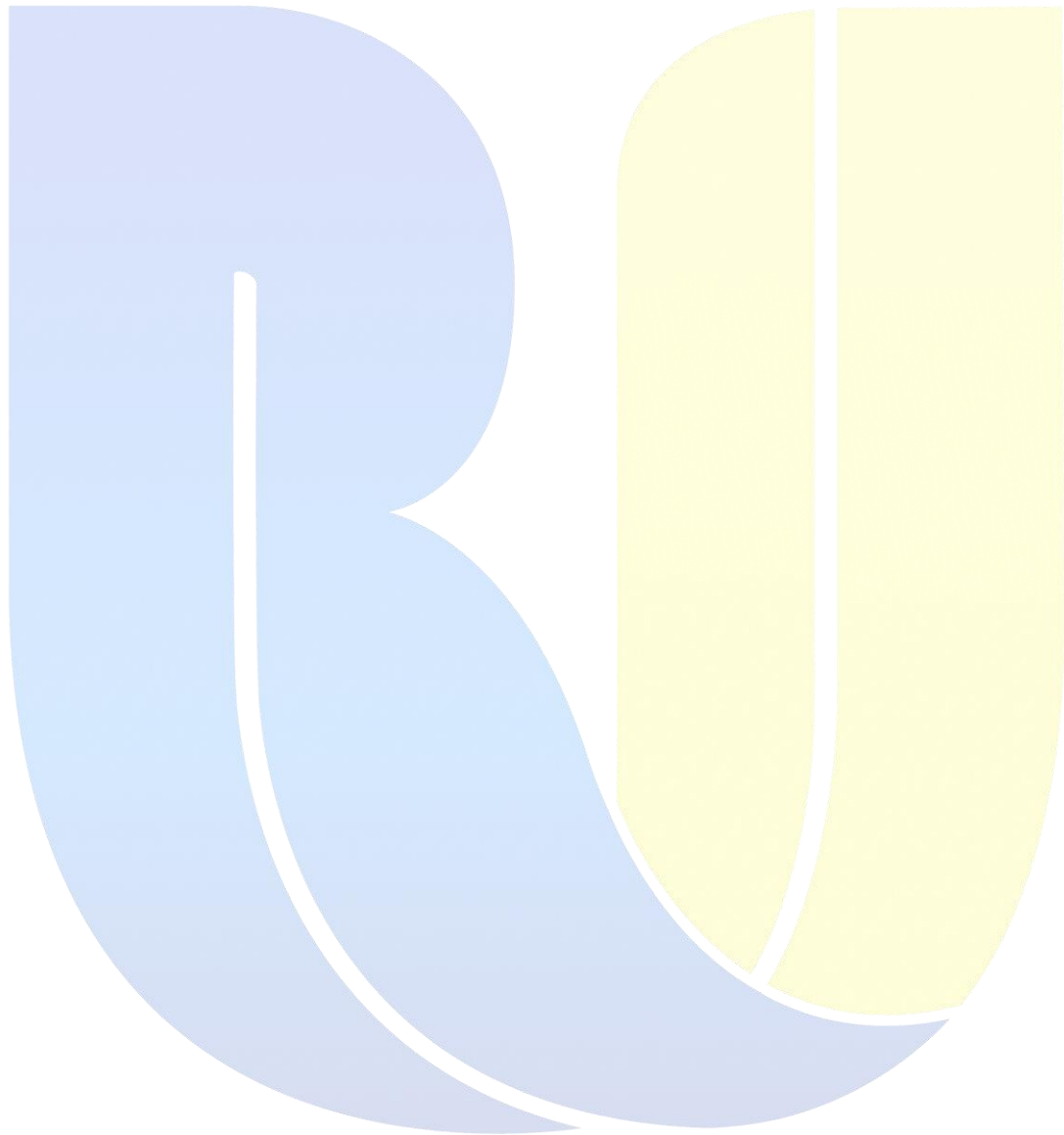
- [1] S. Yuliana, R. Fauziah, and A. Ramadhani, “Analisis Komparasi Metode SES dan SMA untuk Prediksi Bahan Baku Produk Rumah Tempe Yusnita Comparative Analysis of SES and SMA Methods for Prediction of Raw Materials for Tempe House Products Yusnita,” *J. Sist. Inf.*, vol. 13, no. 2, pp. 656–666, 2024.
- [2] I. Setiawan, R. Rasul, and M. Rusman, “Analysis of Product Inventory Control using Continuous Review System Q Method and Periodic Review System P Method to Minimize Inventory Costs,” *J. Rekayasa Sist. Ind.*, vol. 10, no. 01, p. 47, 2023.
- [3] S. Hadi Pratama, N. Rarasati, F. Sains, D. Teknologi, and U. Jambi, “Perbandingan Single Moving Average dan Single Smoothing Eksponensial Dalam Peramalan Penjualan Barang Coupling Sucker di PT.Pertamina Ep Asset-1 Field Jambi Comparison of Single Moving Average and Deep Exponential Single Smoothing Forecasting Sales of Cou,” vol. 3, no. 1, pp. 20–31, 2024.
- [4] R. Sangga Rasefta and S. Esabella, “Sistem Informasi Akademik Smk Negeri 3 Sumbawa Besar Berbasis Web,” *J. Inform. Teknol. dan Sains*, vol. 2, no. 1, pp. 50–58, 2020.
- [5] D. D. Jantce TJ Sitinjak, . Maman, and J. Suwita, “Analisa Dan Perancangan Sistem Informasi Administrasi Kursus Bahasa Inggris Pada Intensive English Course Di Ciledug Tangerang,” *Insa. Pembang. Sist. Inf. dan Komput.*, vol. 8, no. 1, 2020.
- [6] R. R. Putra, “Sistem Informasi Web Pariwisata Hutan Mangrove di Kelurahan Belawan Sicanang Kecamatan Medan Belawan Sebagai Media Promosi,” *J. Ilm. Core It*, vol. 7, no. x, pp. 84–89, 2020.
- [7] I. S. Machfiroh and C. A. Ramadhan, “Peramalan Penjualan Produk Cup 220 Ml Menggunakan Metode Least Square Pada PT . Panen Embun Kemakmuran Tahun 2022,” *J. Mat. dan Stat. serta Apl.*, vol. 10, no. 2, pp. 17–24, 2022.
- [8] E. Supardi and F. Pahlevi, “Manajemen Pengendalian Persediaan Dengan Pendekatan Periodic Review Dan Adaptive Response Rate Single Exponential ...,” *J. Bisnis dan Pemasar.*, vol. 11, no. 1, pp. 1–22, 2021.
- [9] A. Ishaka and C. Sonia, “Perencanaan Peramalan Produk Raket Nyamuk Dengan Metode Time Series dan Causal Aulia,” *Talent. Conf. Ser.*, vol. 3, no. 2, 2020.
- [10] R. A. Faqih, N. Nurlenawati, and D. Triadinda, “Analisis Peramalan Produksi Kembang Kol Di Kabupaten Karawang Dengan Metode Least Square,” *J. Mhs.*

Manaj. dan Akunt., vol. 2, no. 1, pp. 29–34, 2022.

- [11] N. Hudaningsih, S. Firda Utami, and W. A. Abdul Jabbar, “Perbandingan Peramalan Penjualan Produk Aknil Pt.Sunthi Sepuri menggunakan Metode Single Moving Average Dan Single Exponential Smooting,” *J. Inform. Teknol. dan Sains*, vol. 2, no. 1, pp. 15–22, 2020.
- [12] F. T. Adi, P. Suhadi, and E. Kurniawan, “Komparasi Perhitungan Draft Survey Antara Metode Konvensional Dengan Metode Microsoft Excel Dalam Menghitung Berat Muatan Pada Kapal,” *J. Jalasena*, vol. 2, no. 1, 2020.
- [13] F. Fitriyana and A. Sucipto, “Sistem Informasi Penjualan Oleh Sales Marketing Pada PT Erlangga Mahameru,” *J. Teknol. dan Sist. Inf.*, vol. 1, no. 1, pp. 105–110, 2020.
- [14] Siska Narulita, Ahmad Nugroho, and M. Zakki Abdillah, “Diagram Unified Modelling Language (UML) untuk Perancangan Sistem Informasi Manajemen Penelitian dan Pengabdian Masyarakat (SIMLITABMAS),” *Bridg. J. Publ. Sist. Inf. dan Telekomun.*, vol. 2, no. 3, pp. 244–256, 2024.
- [15] Rizka Hafsari, E. Aribi, and N. Maulana, “Perancangan Sistem Informasi Manajemen Inventori dan Penjualan pada Perusahaan PT. Inhutani V,” *PROSISKO*, vol. 10, no. 2, pp. 109–116, 2023.
- [16] U. Pratiwi, K. Wijaya, and F. Fajriyah, “Penerapan Metode Prototype Pada Perancangan Sistem Administrasi Pembayaran Karate Berbasis Website: Studi Kasus Lemkari Prabumulih,” *J. Pengemb. Sist. Inf. dan Inform.*, vol. 2, no. 3, pp. 157–173, 2021.
- [17] A. Muhammad, N. Aditya, and H. Abduh, “Sistem Informasi Akademik Sekolah Berbasis Web Pada Sdn 32 Lagaligo Palopo,” *Indones. J. Educ. Humanit.*, vol. 2, no. 3, pp. 93–107, 2022.
- [18] Masrizal, R. Hidayatullah, and M. Arif, “Sistem Informasi Pengolahan Data Alumni Dan Tracer Study Pada STMIK DUMAI,” *Lentera Dumai*, vol. 12, no. 1, pp. 19–27, 2021.
- [19] I. Budiman, S. Saori, R. N. Anwar, Fitriani, and M. Y. Pangestu, “Analisis Pengendalian Mutu di Bidang Industri Makanan,” *J. Inov. Penelit.*, vol. 1, no. 10, pp. 1–15, 2021.
- [20] S. Rahmahdani and Yahfizham, “Perancangan Sederhana Menggunakan Bahasa Pemrograman Visual Basic. Net 2010 Dengan Database Mysql,” *J. Informatics Busisnes*, vol. 01, no. 04, pp. 213–222, 2024.
- [21] R. Hermiati, A. Asnawati, and I. Kanedi, “Pembuatan E-Commerce Pada Raja Komputer Menggunakan Bahasa Pemrograman Php Dan Database Mysql,” *J. Media Infotama*, vol. 17, no. 1, pp. 54–66, 2021.
- [22] S. P. Balqis, T. Ardiansyah, A. T. Al, and A. Siahaan, “Perancangan Sistem Penerimaan Siswa Baru SMK Swasta Yapim Biru-Biru Berbasis Web,” *J. Ris.*

Sist. Inf. dan Tek. Inform., vol. 2, no. 3, pp. 28–36, 2024.

- [23] K. S. Ningsih, N. J. Aruan, and A. T. A. A. Siahaan, “Aplikasi Buku Tamu Menggunakan Fitur Kamera dan Ajax Berbasis Website pada Kantor Dispora Kota Medan,” *J. Sains, Inform. dan Teknol.*, vol. 8, no. 1, pp. 1–6, 2023.



LISTING PROGRAM

1. Login

```
Public Class FrmLogin

    Private Sub btnLogin_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

    Private Sub txtUsername_KeyPress(ByVal sender As System.Object, ByVal e As
System.Windows.Forms.KeyPressEventArgs) Handles TxtUsername.KeyPress
        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) Handles TxtPassword.KeyPress
        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) Handles BtnKeluar.Click
        Me.Close()
    End Sub

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

    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
        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 BtnSES.Click
        Dim f As New FrmSES
        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)
        LapSES.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 BtnSMA_Click(sender As System.Object, e As System.EventArgs)
Handles BtnSMA.Click
        Dim f As New FrmSMA
        f.ShowAsChild(Me)
    End Sub

    Private Sub FrmUtama_Activated(sender As System.Object, e As
System.EventArgs) Handles MyBase.Activated
        If Level <> "admin" Then
            BtnJenis.Enabled = False
            BtnPeriode.Enabled = False
            BtnNilai.Enabled = False
        Else
            BtnJenis.Enabled = True
            BtnPeriode.Enabled = True
            BtnNilai.Enabled = True
        End If
    End Sub

    Private Sub BtnHasil_Click(sender As System.Object, e As System.EventArgs)
Handles BtnHasil.Click
        Dim f As New FrmHasil
        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
End Class

```

3. Form Jenis

```

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
End Class

```

```

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. 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
```

```

        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 Class

```

5. 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.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 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
End Class

```

6. Form Metode SES

```

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

    Dim MaxPeriode As Date

```

```

Dim AC As ClassSES

Private Sub FrmSES_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load
    Label15.Hide()
    TxtRMSE.Hide()

    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()
    TxtAlpha.Text = 0.1

    'BtnHitung_Click(sender, e)
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())

    AC = New ClassSES(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, NilaiSES) In AC.DNilai
            Dgv1.Rows.Add(Row.Value.Periode, Row.Value.Yt)
        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
    ElseIf Val(TxtAlpha.Text) <= 0 Or Val(TxtAlpha.Text) >= 1 Then
        MsgInfo("Masukkan nilai alpha antara 0 dan 1")
    End If
End Sub

```

```

Exit Sub
End If

AC.hitung(MaxPeriode, Val(TxtNextPeriode.Text), Val(TxtAlpha.Text))
With Dgv1
.Columns.Clear()
.Columns.Add("periode", "Periode")
.Columns("periode").DefaultCellStyle.Format = "MMM-yyyy"
.Columns.Add("alpha", "Alpha")
.Columns.Add("yt", "Yt")
.Columns.Add("ayt", "a*Yt")
.Columns.Add("mina", "1-a")
.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, NilaiSES) In AC.DFt
.Rows.Add(Row.Value.Periode,
Row.Value.Alpha,
Math.Round(Row.Value.Yt, 2),
Math.Round(Row.Value.aYt, 2),
Row.Value.MinA,
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
Dim tanggal As Date = Row.Value.Periode
.Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Yellow

If GetVar("SELECT * FROM tb_hasil WHERE kode_jenis=@0 AND
MONTH(tanggal)=@1 AND YEAR(tanggal)=@2", TxtJenis.SelectedValue, tanggal.Month,
tanggal.Year) Then
Execute("UPDATE tb_hasil SET ses=@0, ses_mape=@1,
ses_alpha=@2 WHERE kode_jenis=@3 AND MONTH(tanggal)=@4 AND YEAR(tanggal)=@5",
Row.Value.Ft, AC.MAPE, Val(TxtAlpha.Text), TxtJenis.SelectedValue,
tanggal.Month, tanggal.Year)
Else
Execute("INSERT INTO tb_hasil (kode_jenis, tanggal,
ses, ses_mape, ses_alpha, sma, sma_mape) VALUES (@0, @1, @2, @3, @4, @5, @6)",
TxtJenis.SelectedValue, tanggal, Row.Value.Ft, AC.MAPE, Val(TxtAlpha.Text),
Nothing, Nothing)
End If
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 LapSES
        Dim Rpt As New RptSES

        Dim Dt As DataTable = OpenDT("SELECT ' AS jenis, ' AS periode, 0.0 AS
yt, 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 weight, 0.0 AS fx, 0.0 AS Err, 0.0 AS AbsErr, 0.0 AS ErrKuadrat, 0.0 AS
ErrDt")
        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("yt").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)

            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("yyyy-MM")
            End If

            If row.Index < Dgv1.Rows.Count - 3 Then
                DtGrafik.Rows.Add(p, row.Cells("yt").Value, 0,
row.Cells("ft").Value, row.Cells("err").Value, row.Cells("errAbs").Value,
row.Cells("errSquare").Value, row.Cells("errPerY").Value)
            End If
        Next

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

```

7. Form Metode SMA

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

    Dim MaxPeriode = 0

    Dim AC As ClassFSMA

    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 = 3
    End Sub

    Sub awal()
        DtNilai = OpenDT("SELECT MIN(p.nama_periode) AS nama_periode,
SUM(n.nilai) AS 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 GROUP BY
YEAR(nama_periode), MONTH(nama_periode) ORDER BY p.nama_periode",
TxtJenis.SelectedValue.ToString())

        AC = New ClassFSMA(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)
        Exit 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("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)

        a = 1
        Dim w As New List(Of Double)
        For Each Row As KeyValuePair(Of Date, Nilai) In AC.DNilai
            .Rows.Add(Row.Value.Periode, Row.Value.Dt, 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, Math.Round(Row.Value.Ft,
2))
            .Rows(.Rows.Count - 1).DefaultCellStyle.BackColor =
Color.Yellow

            Dim tanggal As DateTime = Row.Value.Periode

            If GetVar("SELECT * FROM tb_hasil WHERE kode_jenis=@0 AND
MONTH(tanggal)=@1 AND YEAR(tanggal)=@2", TxtJenis.SelectedValue, tanggal.Month,
tanggal.Year) Then
                Execute("UPDATE tb_hasil SET SMA=@0, sma_mape=@1 WHERE
kode_jenis=@2 AND MONTH(tanggal)=@3 AND YEAR(tanggal)=@4", Row.Value.Ft,
AC.MAPE, TxtJenis.SelectedValue, tanggal.Month, tanggal.Year)
            Else
                Execute("INSERT INTO tb_hasil (kode_jenis, tanggal, ses,
ses_mape, ses_alpha, sma, sma_mape) VALUES (@0, @1, @2, @3, @4, @5, @6)",

```

```

TxtJenis.SelectedValue, tanggal, Nothing, Nothing, Nothing, Row.Value.Ft,
AC.MAPE)

    End If
Next
.Rows.Add("MAD", Nothing, AC.MAD)
.Rows(.Rows.Count - 1).DefaultCellStyle.BackColor = Color.Cyan
.Rows.Add("MSE", Nothing, AC.MSE)
.Rows(.Rows.Count - 1).DefaultCellStyle.BackColor = Color.Cyan
.Rows.Add("MAPE", Nothing, AC.MAPE * 100)
.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 LapSMA
    Dim Rpt As New RptSMA

    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, 0.0 AS Err, 0.0 AS AbsErr, 0.0 AS ErrKuadrat, 0.0 AS ErrDt")

    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("yyyy-MM")
        End If

        Dt.Rows.Add(p, row.Cells(1).Value, row.Cells(2).Value,
row.Cells(3).Value, row.Cells(4).Value, row.Cells(5).Value, row.Cells(6).Value)

        If row.Index < Dgv1.Rows.Count - 3 Then
            DtGrafik.Rows.Add(p, row.Cells(1).Value, row.Cells(2).Value,
row.Cells(3).Value, row.Cells(4).Value, row.Cells(5).Value, row.Cells(6).Value)
        End If
    Next

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

```

8. Form Hasil

```
Public Class FrmHasil
```

```
    Private Sub BtnRefresh_Click(sender As Object, e As EventArgs) Handles  
        BtnRefresh.Click
```

```
        Dim Dt As DataTable = OpenDT("SELECT AVG(ses_mape) AS ses_mape,  
        AVG(sma_mape) AS sma_mape FROM tb_hasil")  
  
        Dim hasil As String = ""  
  
        If Dt.Rows.Count > 0 Then  
            If Not IsDBNull(Dt(0)(0)) And Not IsDBNull(Dt(0)(1)) Then  
                If Dt(0)(0).ToString() < Dt(0)(1).ToString() Then  
                    hasil = "Nilai MAPE terkecil adalah metode SES dengan rata-  
rata MAPE : " & Math.Round(Dt(0)(0).ToString() * 100, 2)  
                Else  
                    hasil = "Nilai MAPE terkecil adalah metode SMA dengan rata-  
rata MAPE : " & Math.Round(Dt(0)(1).ToString() * 100, 2)  
                End If  
            End If  
        End If
```

```
        Dgv.DataSource = OpenDT("SELECT @@ AS hasil, id_hasil, Nama_jenis,  
        Tanggal, ROUND(Ses, 2) AS Ses, ROUND(ses_mape * 100, 2) AS Ses_MAPE, Ses_Alpha,  
        ROUND(SMA, 2) AS SMA, ROUND(sma_mape * 100, 2) AS SMA_MAPE FROM tb_hasil h  
        INNER JOIN tb_jenis j ON j.kode_jenis=h.kode_jenis WHERE h.kode_jenis LIKE @@  
        OR nama_jenis LIKE @1 ORDER BY h.kode_jenis, tanggal", hasil, "%" &  
        TxtCari.Text & "%")  
        Dgv.Columns("Tanggal").DefaultCellStyle.Format = "MMM-yyy"  
        Dgv.Columns("id_hasil").Visible = False  
        Dgv.Columns("hasil").Visible = False
```

```
        BtnCetak.Enabled = Dgv.Rows.Count > 0
```

```
    End Sub
```

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

```
    Private Sub FrmHasil_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 Label15_Click(sender As System.Object, e As System.EventArgs)

    End Sub

    Private Sub BtnCetak_Click(sender As System.Object, e As System.EventArgs)
Handles BtnCetak.Click
        Dim Rpt As New RptHasil
        Dim L As New LapHasil
        Rpt.SetDataSource(Dgv.DataSource)
        Rpt.Refresh()
        L.CrystalReportViewer1.ReportSource = Rpt
        L.ShowAsChild(Me.MdiParent)
    End Sub

    Private Sub BtnHapus_Click(sender As System.Object, e As System.EventArgs)
Handles BtnHapus.Click
        If Not Dgv.CurrentCell Is Nothing Then
            If MsgAsk("Hapus data?") = vbYes Then
                Execute("DELETE FROM tb_hasil WHERE id_hasil=@0",
Dgv.getSelAt("id_hasil"))
                MsgInfo("Data terhapus!")
                BtnRefresh_Click(sender, e)
            End If
        End If
    End Sub

    Private Sub Button1_Click(sender As System.Object, e As System.EventArgs)
Handles Button1.Click
        If MsgAsk("Kosongkan semua data?") = vbYes Then
            Execute("TRUNCATE tb_hasil")
            MsgInfo("Data terhapus!")
            BtnRefresh_Click(sender, e)
        End If
    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 passwrod 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

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

End Sub
End Class
```



**UNIVERSITAS
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 : 199-132/PP-00.10/UR/XII/2024

Hal : Permohonan Riset

Kepada Yth,

Pemilik Alcha Collection 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 1 (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	Alya Maharani Rambe	Sistem Informasi-S1	P	21.22.0072

Adapun Tujuan dilaksanakannya Riset ini untuk Menyelesaikan Penulisan Skripsi Program Strata 1 (S1) Universitas Royal. Judul Skripsi : "*Komparasi SES dan SMA Sistem Peramalan Penjualan di Toko Alcha Collection*".

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



Tembusan :

- Arsip



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Berbudaya Mutu Berwawasan Global



ALCHA COLLECTION

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 : Fieka Zodian
Jabatan : Owner Alcha Collection

Menerangkan bahwa,
Nama : Alya Maharani Rambe
Nim : 21220072
Jurusan : Sistem Informasi
Universitas : Universitas Royal

Telah kami setuju untuk mengadakan penelitian di Toko Alcha Collection dengan judul
"Komparasi SES dan SMA Sistem Peramalan Penjualan di toko Alcha Collection"
Adapun data-data dari toko kami sebagai berikut :

Periode	Nama Produk				
	Baju Gamis	Baju Blouse	Baju One Set	Rok	Celana
April 2024	95 pcs	105 pcs	107 pcs	125 pcs	130 pcs
Mei 2024	97 pcs	110 pcs	92 pcs	124 pcs	120 pcs
Juni 2024	102 pcs	104 pcs	104 pcs	116 pcs	115 pcs
Juli 2024	140 pcs	150 pcs	125 pcs	126 pcs	140 pcs
Agustus 2024	135 pcs	134 pcs	108 pcs	103 pcs	110 pcs
September 2024	130 pcs	120 pcs	102 pcs	98 pcs	108 pcs

Oktober 2024	140 pcs	121 pcs	113 pcs	99 pcs	118 pcs
Nopember 2024	120 pcs	110 pcs	97 pcs	94 pcs	112 pcs
Desember 2024	112 pcs	125 pcs	88 pcs	98 pcs	109 pcs
Januari 2025	122 pcs	105 pcs	92 pcs	96 pcs	102 pcs
Februari 2025	105 pcs	115 pcs	87 pcs	99 pcs	98 pcs
Maret 2025	115 pcs	130 pcs	94 pcs	102 pcs	106 pcs

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

Yang bertanda tangan di bawah ini :

ALPHA COLLECTION
D Fieka Z

Fieka Zodiani
 Owner



LEMBAR KONSULTASI SKRIPSI

Nama Mahasiswa : ALYA MAHARANI RAMBE
NIM : 21220072
Program Studi : Sistem Informasi
Judul Skripsi/TA : KOMPARASI SES DAN SMA SISTEM PERAMALAN PENJUALAN DI TOKO ALCHA COLLECTION
Dosen Pembimbing : 1. RISNAWATI, S.Kom, M.Kom
2. ANDRI NATA, ST, M.Kom.
Lembar Konsultasi : Pembimbing 1
Tanggal Pertemuan : 28 Nopember 2024
Pertama *

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
Tanggal 28-11-2024	1. Buat Tabel Produknya, Jenis Produk, Jumlah Produk, Bulan dan lain-lain. 2. Lihat referensi yang Merujuk ke metode SES dan SMA 3. Perbaiki isi Batasan masalah 4. Jalankan dari Latar belakang masalah, identifikasi masalah, batasan masalah, rumusan masalah 5. Perbaiki penulisan yang berbahasa inggris harus cetak miring.		BAB I (Revisi)
Tanggal 09-12-2024	Lanjut Bab 2		BAB I (ACC)
Tanggal 12-12-2024	tambahkan kata penjualan dan jenis2 produk yang di jual.		BAB II (Revisi)
Tanggal 18-12-2024			BAB II (ACC)
Tanggal 19-12-2024	melengkapi dokumen skripsi untuk proposal seminar		BAB III (ACC)
Tanggal 19-12-2024			Proposal Seminar (ACC)
Tanggal 25-02-2025	1. Sesuaikan angka keseluruhan hasil prediksi baju gamis 2. Rubah kata Genap menjadi bulat 3. Tambahkan Tabel SMA 4. Diagram Kasus Penggunaan Scan		BAB IV (Revisi)
Tanggal 04-03-2025	1. Perbaiki tabel baju blus metode SMA (belum ada) 2. penjelasan tentang MAD, MSE, MAPE pada masing-masing tabel hasil 3. untuk hasil MAPE baju blus dan celana belum sesuai di sistem dengan naskah skripsi 4. Membuat laporan akhir		BAB IV (Revisi)
Tanggal 07-03-2025	Acc bab 4, revisi laporan program.		BAB IV (Revisi)
Tanggal 07-03-2025	Bab 5		BAB IV (ACC)

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
Tanggal 08-03-2025			BAB V (ACC)
Tanggal 08-03-2025			BAB VI (ACC)
Tanggal 12-03-2025			Pengujian Alat/Aplikasi (ACC)
Tanggal 12-03-2025			Seminar Hasil (ACC)
Tanggal 09-04-2025			Sisi Meja Hijau (ACC)

Kisaran, 9 April 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom.
NIDN : 0101068701



UNIVERSITAS ROYAL
PROGRAM STUDI SISTEM INFORMASI



LPM
Lembaga Pengembangan Masyarakat
UNIVERSITAS ROYAL

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 : ALYA MAHARANI RAMBE
NIM : 21220072
Program Studi : Sistem Informasi
Judul Skripsi/TA : KOMPARASI SES DAN SMA SISTEM PERAMALAN PENJUALAN DI TOKO
ALCHA COLLECTION
Dosen Pembimbing : 1. RISNAWATI, S.Kom, M.Kom.
2. ANDRI NATA, S.T., M.Kom.
Lembar Konsultasi : Pembimbing 2
Tanggal Pertemuan Pertama : 11 Desember 2024

PERTEMUAN/ TANGGAL	MATERI BAHASAN	PARAF DOSEN	KETERANGAN
11-12-2024	- sudah bagus lanjut bab 2		BAB I (ACC)
23-12-2024	- perbaiki tata tulis yang berasal dari bahasa asing		BAB II (Revisi)
24-12-2024	- lanjut bab III lengkapi tata tulis dengan referensi yang relevan		BAB II (ACC)
28-12-2024	- lanjut seminar porposal		BAB III (ACC)
28-12-2024	- persiapkan diri untuk seminar proposal		Seminar Proposal (ACC)
03-03-2025	- sudah bagus lanjut bab V		BAB IV (ACC)
06-03-2025	- perbaiki tata tulis teks typo		BAB V (ACC)
08-03-2025	- sesuaikan dengan rumusan masalah		BAB VI (Revisi)
10-03-2025	- lanjut program		BAB VI (ACC)
11-03-2025	- bulid ke format exe		Pengujian Alat/Aplikasi (Revisi)
12-03-2025	- lanjut ketahap selanjutnya		Pengujian Alat/Aplikasi (ACC)
12-03-2025	- lanjut ketahap selanjutnya		Seminar Hasil (ACC)
09-04-2025	lanjut sidang meja hijau		Sidang Meja Hijau (ACC)

Kisaran, 10 April 2025

Ka. Prodi Sistem Informasi



Nurwati, M.Kom.
NIDN: 0101068701

DAFTAR RIWAYAT HIDUP

A. Identitas Pribadi

Nama Lengkap : Alya Maharani Rambe
Tempat/Tanggal Lahir : Pulau Rakyat Tua, 24 Mei 2002
Jenis Kelamin : Perempuan
Agama : Islam
Negara : Indonesia
Alamat : Mekar Sari Dusun V, Kec.Pulau Rakyat,
Kab.Asahan

Riwayat Pendidikan

1. SD Negeri 017137 Mekar Sari (2009 – 2014)
2. SMP Negeri 1 Pulau Rakyat (2015 – 2017)
3. SMA Swasta Swadaya Pulau Rakyat (2018 – 2020)

Demikianlah daftar riwayat hidup ini diperbuat dengan sebenarnya.

Kisaran, 19 Maret 2025
Penulis,



Alya Maharani Rambe
NIM: 21.22.0072