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Kode :

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit this template
 */

/**
 *
 * @author Tyo
 */
public class MainFrame extends javax.swing.JFrame {

    /**
     * Creates new form MainFrame
     */
    public MainFrame() {
        initComponents();
        contentScrollPane.setViewportView(new LoginPanel(contentScrollPane));
    }

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">//GEN-BEGIN:initComponents
    private void initComponents() {

        buttonGroup1 = new javax.swing.ButtonGroup();
        contentScrollPane = new javax.swing.JScrollPane();
        jMenuBar1 = new javax.swing.JMenuBar();
        jMenu1 = new javax.swing.JMenu();
        homeMenuItem = new javax.swing.JMenuItem();
        jMenu2 = new javax.swing.JMenu();
        mahasiswaMenuItem = new javax.swing.JMenuItem();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jMenu1.setText("File");

        homeMenuItem.setText("Home");
        homeMenuItem.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                homeMenuItemActionPerformed(evt);
            }
        });
        jMenu1.add(homeMenuItem);

        jMenuBar1.add(jMenu1);
```

```java
        jMenu2.setText("Entri");

        mahasiswaMenuItem.setText("Mahasiswa");
        mahasiswaMenuItem.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                mahasiswaMenuItemActionPerformed(evt);
            }
        });
        jMenu2.add(mahasiswaMenuItem);

        jMenuBar1.add(jMenu2);

        setJMenuBar(jMenuBar1);

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(contentScrollPane, javax.swing.GroupLayout.DEFAULT_SIZE, 723,
Short.MAX_VALUE)
                .addContainerGap())
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(contentScrollPane, javax.swing.GroupLayout.DEFAULT_SIZE, 425,
Short.MAX_VALUE)
                .addContainerGap())
        );

        pack();
    }// </editor-fold>//GEN-END:initComponents

    private void homeMenuItemActionPerformed(java.awt.event.ActionEvent evt) {//GEN-
FIRST:event_homeMenuItemActionPerformed
        // TODO add your handling code here:
        contentScrollPane.setViewportView(new HomePanel());
    }//GEN-LAST:event_homeMenuItemActionPerformed

    private void mahasiswaMenuItemActionPerformed(java.awt.event.ActionEvent evt) {//GEN-
FIRST:event_mahasiswaMenuItemActionPerformed
        // TODO add your handling code here:
        contentScrollPane.setViewportView(new EntryPanel());
    }//GEN-LAST:event_mahasiswaMenuItemActionPerformed

    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
```

```java
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new MainFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify//GEN-BEGIN:variables
    private javax.swing.ButtonGroup buttonGroup1;
    private javax.swing.JScrollPane contentScrollPane;
    private javax.swing.JMenuItem homeMenuItem;
    private javax.swing.JMenu jMenu1;
    private javax.swing.JMenu jMenu2;
    private javax.swing.JMenuBar jMenuBar1;
    private javax.swing.JMenuItem mahasiswaMenuItem;
    // End of variables declaration//GEN-END:variables
}
```

```java
import java.util.ArrayList;
import javax.swing.JOptionPane;
import javax.swing.table.DefaultTableModel;
import latihan.gui2.Database;
import latihan.gui2.Mahasiswa;

/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JPanel.java to edit this template
 */


/**
 *
 * @author Tyo
 */
```

```java
public class EntryPanel extends javax.swing.JPanel {

    /**
     * Creates new form EntryPanel
     */
    public EntryPanel() {
        initComponents();
        loadTableData();
    }

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">//GEN-BEGIN:initComponents
    private void initComponents() {

        buttonGroup1 = new javax.swing.ButtonGroup();
        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        jScrollPane1 = new javax.swing.JScrollPane();
        alamatTextArea = new javax.swing.JTextArea();
        jLabel2 = new javax.swing.JLabel();
        umurSpinner = new javax.swing.JSpinner();
        jLabel3 = new javax.swing.JLabel();
        simpanButton = new javax.swing.JButton();
        jLabel4 = new javax.swing.JLabel();
        jLabel5 = new javax.swing.JLabel();
        provinsiComboBox = new javax.swing.JComboBox<>();
        jLabel6 = new javax.swing.JLabel();
        futsalCheckBox = new javax.swing.JCheckBox();
        nimTextField = new javax.swing.JTextField();
        basketCheckBox = new javax.swing.JCheckBox();
        namaTextField = new javax.swing.JTextField();
        tidurCheckBox = new javax.swing.JCheckBox();
        lakiRadioButton = new javax.swing.JRadioButton();
        jLabel7 = new javax.swing.JLabel();
        perempuanRadioButton = new javax.swing.JRadioButton();
        jLabel8 = new javax.swing.JLabel();
        jPanel2 = new javax.swing.JPanel();
        jScrollPane2 = new javax.swing.JScrollPane();
        mahasiswaTable = new javax.swing.JTable();

        setLayout(new java.awt.BorderLayout());

        jLabel1.setText("NIM :");

        alamatTextArea.setColumns(20);
        alamatTextArea.setRows(5);
        jScrollPane1.setViewportView(alamatTextArea);

        jLabel2.setText("Nama :");

        umurSpinner.setModel(new javax.swing.SpinnerNumberModel(15, 0, 60, 1));

        jLabel3.setText("Jenis Kelamin :");

        simpanButton.setText("simpan");
        simpanButton.addActionListener(new java.awt.event.ActionListener() {
```

```java
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                simpanButtonActionPerformed(evt);
            }
        });

        jLabel4.setText("Umur :");

        jLabel5.setText("Alamat :");

        provinsiComboBox.setModel(new javax.swing.DefaultComboBoxModel<>(new String[] {
"KalSel", "KalBar", "KalTim", "KalTeng", "KalTara", " " }));

        jLabel6.setText("Provinsi :");

        futsalCheckBox.setText("Futsal");

        basketCheckBox.setText("Basket");

        tidurCheckBox.setText("Tidur");

        buttonGroup1.add(lakiRadioButton);
        lakiRadioButton.setText("Laki-Laki");
        lakiRadioButton.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                lakiRadioButtonActionPerformed(evt);
            }
        });

        jLabel7.setText("Hobi :");

        buttonGroup1.add(perempuanRadioButton);
        perempuanRadioButton.setText("Perempuan");
        perempuanRadioButton.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                perempuanRadioButtonActionPerformed(evt);
            }
        });

        jLabel8.setText("Tahun");

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                .addContainerGap(312, Short.MAX_VALUE)
                .addComponent(simpanButton)
                .addContainerGap())
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addContainerGap()
                    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING)
                        .addComponent(jLabel1)
                        .addComponent(jLabel2)
                        .addComponent(jLabel3)
                        .addComponent(jLabel4)
                        .addComponent(jLabel6)
                        .addComponent(jLabel5)
```

```java
                                .addComponent(jLabel7))
                        .addGap(46, 46, 46)
                        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING)
                            .addComponent(nimTextField)
                            .addComponent(namaTextField)
                            .addComponent(jScrollPane1, javax.swing.GroupLayout.DEFAULT_SIZE, 248,
Short.MAX_VALUE)
                            .addGroup(jPanel1Layout.createSequentialGroup()
                                .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayou
t.Alignment.LEADING)
                                    .addComponent(basketCheckBox)
                                    .addComponent(futsalCheckBox)
                                    .addComponent(provinsiComboBox,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                    .addComponent(perempuanRadioButton)
                                    .addGroup(jPanel1Layout.createSequentialGroup()
                                        .addComponent(umurSpinner,
javax.swing.GroupLayout.PREFERRED_SIZE, 54, javax.swing.GroupLayout.PREFERRED_SIZE)
                                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacemen
t.RELATED)
                                        .addComponent(jLabel8))
                                    .addComponent(lakiRadioButton)
                                    .addComponent(tidurCheckBox))
                                .addGap(0, 0, Short.MAX_VALUE)))
                        .addContainerGap()))
        );
        jPanel1Layout.setVerticalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                .addContainerGap(351, Short.MAX_VALUE)
                .addComponent(simpanButton)
                .addContainerGap())
            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
                .addGroup(jPanel1Layout.createSequentialGroup()
                    .addContainerGap()
                    .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.TRAILING)
                        .addGroup(jPanel1Layout.createSequentialGroup()
                            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayou
t.Alignment.BASELINE)
                                .addComponent(jLabel1)
                                .addComponent(nimTextField,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATE
D)
                            .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayou
t.Alignment.BASELINE)
                                .addComponent(jLabel2)
                                .addComponent(namaTextField,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELA
TED)
                            .addComponent(jLabel3)
                            .addGap(5, 5, 5))
                        .addComponent(lakiRadioButton))
```

```java
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(perempuanRadioButton)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.BASELINE)
                            .addComponent(umurSpinner, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jLabel4)
                            .addComponent(jLabel8))
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.LEADING)
                            .addComponent(jLabel5)
                            .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.BASELINE)
                            .addComponent(provinsiComboBox,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jLabel6))
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                        .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignm
ent.BASELINE)
                            .addComponent(futsalCheckBox)
                            .addComponent(jLabel7))
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(basketCheckBox)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(tidurCheckBox)
                        .addContainerGap(20, Short.MAX_VALUE)))
        );

        add(jPanel1, java.awt.BorderLayout.LINE_START);

        mahasiswaTable.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {

            },
            new String [] {
                "NIM", "Nama", "Jenis Kelamin", "Umur"
            }
        ) {
            Class[] types = new Class [] {
                java.lang.String.class, java.lang.String.class, java.lang.String.class,
java.lang.Integer.class
            };
            boolean[] canEdit = new boolean [] {
                false, false, false, false
            };

            public Class getColumnClass(int columnIndex) {
                return types [columnIndex];
            }

            public boolean isCellEditable(int rowIndex, int columnIndex) {
                return canEdit [columnIndex];
            }
        });
        jScrollPane2.setViewportView(mahasiswaTable);
```

```java
        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(
            jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 484, Short.MAX_VALUE)
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
                .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                    .addComponent(jScrollPane2, javax.swing.GroupLayout.DEFAULT_SIZE, 478,
Short.MAX_VALUE)
                    .addContainerGap()))
        );
        jPanel2Layout.setVerticalGroup(
            jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 379, Short.MAX_VALUE)
            .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
                .addGroup(jPanel2Layout.createSequentialGroup()
                    .addContainerGap()
                    .addComponent(jScrollPane2, javax.swing.GroupLayout.DEFAULT_SIZE, 367,
Short.MAX_VALUE)
                    .addContainerGap()))
        );

        add(jPanel2, java.awt.BorderLayout.CENTER);
    }// </editor-fold>//GEN-END:initComponents

    private void simpanButtonActionPerformed(java.awt.event.ActionEvent evt) {//GEN-
FIRST:event_simpanButtonActionPerformed
        // TODO add your handling code here:
        //        System.out.println(nimTextField.getText());
        //        System.out.println(namaTextField.getText());
        //        if(lakiRadioButton.isSelected()){
        //            System.out.println("Laki-Laki");
        //        }
        //        if(perempuanRadioButton.isSelected()){
        //            System.out.println("Perempuan");
        //        }
        //        int umur = (Integer) umurSpinner.getValue();
        //        System.out.println(umur);
        //        System.out.println(alamatTextArea.getText());
        //        System.out.println(provinsiComboBox.getSelectedItem());
        //        if(futsalCheckBox.isSelected()){
        //            System.out.println("membaca");
        //        }
        //        if(basketCheckBox.isSelected()){
        //            System.out.println("menyanyi");
        //        }
        //        if(tidurCheckBox.isSelected()){
        //            System.out.println("berenang");
        //        }
        Mahasiswa mhs = new Mahasiswa();
        mhs.setNim(nimTextField.getText());
        mhs.setNama(namaTextField.getText());
        if(lakiRadioButton.isSelected()){
            mhs.setJenisKelamin("Laki-laki");
        }
        if(perempuanRadioButton.isSelected()){
            mhs.setJenisKelamin("Perempuan");
```

```java
        }
        int umur = (Integer) umurSpinner.getValue();
        mhs.setUmur(umur);
        mhs.setAlamat(alamatTextArea.getText());

        mhs.setProvinsi(provinsiComboBox.getSelectedItem().toString());
        ArrayList<String> hobiList = new ArrayList<>();
        if(futsalCheckBox.isSelected()){
            hobiList.add("Futsal");
        }
        if(basketCheckBox.isSelected()){
            hobiList.add("Basket");
        }
        if(tidurCheckBox.isSelected()){
            hobiList.add("Tidur");
        }
        mhs.setHobi(hobiList);
        Database.getInstance().insertMahasiswa(mhs);
        clearForm();
        JOptionPane.showMessageDialog(this, "Sukses Tersimpan");
        loadTableData();
    }//GEN-LAST:event_simpanButtonActionPerformed

    private void loadTableData(){
        DefaultTableModel dtm = (DefaultTableModel) mahasiswaTable.getModel();
        //refresh tabel
        while(dtm.getRowCount()>0){
            dtm.removeRow(0);
        }
        //isi tabel
        for(Mahasiswa mhs : Database.getInstance().getListMahasiswa()){
            dtm.addRow(new
Object[]{mhs.getNim(),mhs.getNama(),mhs.getJenisKelamin(),mhs.getUmur()});
        }
    }

    private void clearForm(){
        nimTextField.setText("");
        namaTextField.setText("");
        buttonGroup1.clearSelection();
        umurSpinner.setValue(15);
        alamatTextArea.setText("");
        provinsiComboBox.setSelectedIndex(-1);
        futsalCheckBox.setSelected(false);
        basketCheckBox.setSelected(false);
        tidurCheckBox.setSelected(false);
    }

    private void lakiRadioButtonActionPerformed(java.awt.event.ActionEvent evt) {//GEN-
FIRST:event_LakiRadioButtonActionPerformed
        // TODO add your handling code here:
    }//GEN-LAST:event_LakiRadioButtonActionPerformed

    private void perempuanRadioButtonActionPerformed(java.awt.event.ActionEvent evt) {//GEN-
FIRST:event_perempuanRadioButtonActionPerformed
        // TODO add your handling code here:
    }//GEN-LAST:event_perempuanRadioButtonActionPerformed

    public static void main(String args[]) {
        /* Set the Nimbus Look and feel */
```

```java
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional)
">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look
and feel.
         * For details see
http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(MainFrame.class.getName()).log(java.util.loggin
g.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new MainFrame().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify//GEN-BEGIN:variables
    private javax.swing.JTextArea alamatTextArea;
    private javax.swing.JCheckBox basketCheckBox;
    private javax.swing.ButtonGroup buttonGroup1;
    private javax.swing.JCheckBox futsalCheckBox;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JLabel jLabel7;
    private javax.swing.JLabel jLabel8;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JScrollPane jScrollPane2;
    private javax.swing.JRadioButton lakiRadioButton;
    private javax.swing.JTable mahasiswaTable;
    private javax.swing.JTextField namaTextField;
    private javax.swing.JTextField nimTextField;
    private javax.swing.JRadioButton perempuanRadioButton;
    private javax.swing.JComboBox<String> provinsiComboBox;
```

```java
    private javax.swing.JButton simpanButton;
    private javax.swing.JCheckBox tidurCheckBox;
    private javax.swing.JSpinner umurSpinner;
    // End of variables declaration//GEN-END:variables
}
```

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package latihan.gui2;

import java.io.Serializable;
import java.util.ArrayList;

/**
 *
 * @author Tyo
 */
public class Mahasiswa implements Serializable{
    private String nim,nama,jenisKelamin;
    private int umur;
    private String alamat, provinsi;
    private ArrayList<String> hobi;

    public String getNim() {
        return nim;
    }

    public void setNim(String nim) {
        this.nim = nim;
    }

    public String getNama() {
        return nama;
    }

    public void setNama(String nama) {
        this.nama = nama;
    }

    public String getJenisKelamin() {
        return jenisKelamin;
    }

    public void setJenisKelamin(String jenisKelamin) {
        this.jenisKelamin = jenisKelamin;
    }

    public int getUmur() {
        return umur;
    }

    public void setUmur(int umur) {
        this.umur = umur;
    }

    public String getAlamat() {
        return alamat;
```

```java
    }

    public void setAlamat(String alamat) {
        this.alamat = alamat;
    }

    public String getProvinsi() {
        return provinsi;
    }

    public void setProvinsi(String provinsi) {
        this.provinsi = provinsi;
    }

    public ArrayList<String> getHobi() {
        return hobi;
    }

    public void setHobi(ArrayList<String> hobi) {
        this.hobi = hobi;
    }
}
```

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package latihan.gui2;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.ObjectInputStream;
import java.io.ObjectOutputStream;
import java.io.Serializable;
import java.util.ArrayList;
import java.util.List;

/**
 *
 * @author Tyo
 */
public class Database implements Serializable{
    public static Database instance;
    private ArrayList<Mahasiswa> data = new ArrayList<>();
    private Database(){
    }

    public static synchronized Database getInstance() {
        loadFile();
        if(instance == null){
            instance = new Database();
        }
        return instance;
    }

    public void insertMahasiswa(Mahasiswa mahasiswa){
```

```java
        data.add(mahasiswa);
        updateFile();
    }

    public List<Mahasiswa> getListMahasiswa() {
        return data;
    }

    private static void loadFile() {
        //load file
        try {
            File f = new File("D:\\Kuliah\\STIS\\Semester 4\\PBO\\Praktikum\\modul8\\Latihan
GUI2\\database.dat");
            FileInputStream fis = new FileInputStream(f);
            ObjectInputStream ois = new ObjectInputStream(fis);
            instance = (Database) ois.readObject();
            ois.close();
            fis.close();
        } catch (FileNotFoundException ex) {
            System.err.println("File tidak ditemukan");
        } catch (ClassNotFoundException ex) {
            System.err.println("Format File salah");
        } catch (IOException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
            System.err.println("Gagal membaca file");
        }
    }

    private void updateFile() {
        try {
            FileOutputStream fos = new FileOutputStream("D:\\Kuliah\\STIS\\Semester
4\\PBO\\Praktikum\\modul8\\Latihan GUI2\\database.dat");
            ObjectOutputStream oos = new ObjectOutputStream(fos);
            oos.writeObject(instance);
            oos.close();
            fos.close();
        } catch (FileNotFoundException ex) {
            System.err.println("File tidak ditemukan");
        } catch (IOException ex) {
            System.err.println("Gagal menulis file");
        }
    }
}
```