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Kelas / No : 2KS1 / 25

MODUL 10 PEMROGRAMAN BERORIENTASI OBJEK

INPUT-OUTPUT

Seluruh source code pada modul ini tersedia pada: Repository Github

A.   Membaca File

Source Code:

```java
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;
import java.util.logging.Level;
import java.util.logging.Logger;

public class LatihanFile {
    public static void main(String[] args) {
        FileInputStream fis = null;
        File f = new File("G:\\My Drive\\00. Tingkat 2\\Pemrograman
Berorientasi Objek\\Week 10\\Praktikum\\Latihan File\\textfile.txt");
        try {
            fis = new FileInputStream(f);
            while(fis.available() > 0) {
                System.out.println((char) fis.read());
            }

//          System.out.println(fis.available());
//          System.out.println((char) fis.read());
//          System.out.println(fis.available());
//          System.out.println((char) fis.read());
//          System.out.println(fis.available());
        } catch (FileNotFoundException e) {
            System.err.println("File tidak ditemukan");
        } catch (IOException e) {
            System.err.println("File gagal dibaca");
        } finally {
            try {
                fis.close();
            } catch (IOException ex) {

Logger.getLogger(LatihanFile.class.getName()).log(Level.SEVERE, null,
ex);
            }
        }
    }
}
```
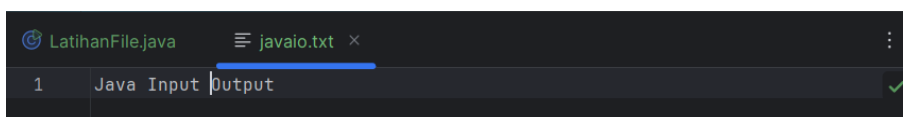
Output:

B.   Menulis File

Source Code:

```java
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.util.logging.Level;
import java.util.logging.Logger;

public class LatihanFile {
    public static void main(String[] args) {
        try {
            FileOutputStream fos = new FileOutputStream("G:\\My
Drive\\00. Tingkat 2\\Pemrograman Berorientasi Objek\\Week
10\\Praktikum\\Latihan File\\javaio.txt");
            String str = "Java Input Output";
            fos.write(str.getBytes());
            fos.close();
        } catch (FileNotFoundException ex) {

Logger.getLogger(LatihanFile.class.getName()).log(Level.SEVERE, null,
ex);
        } catch (IOException ex) {

Logger.getLogger(LatihanFile.class.getName()).log(Level.SEVERE, null,
ex);
        }
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBra

Process finished with exit code 0
```

```
  LatihanFile.java        javaio.txt  ×

1      Java Input Output
```

C.   GUI

Source Code:

```java
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;

public class NewFrame extends JDialog {
    private JPanel contentPane;
    private JTextField fileTextField;
    private JButton openButton;
    private JScrollBar scrollBar1;
    private JTextArea contentTextArea;
    private JButton buttonOK;
```
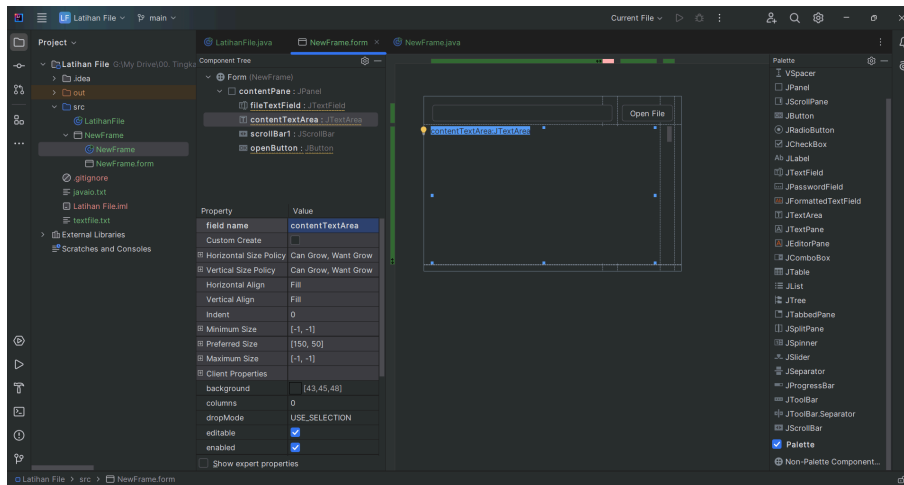
```java
    private JButton buttonCancel;
    private JFileChooser fileChooser;

    public NewFrame() {
        setContentPane(contentPane);
        setModal(true);
        getRootPane().setDefaultButton(buttonOK);
        openButton.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                fileChooser = new JFileChooser();
                JButton button = (JButton)e.getSource();
                Window window = SwingUtilities.windowForComponent(
button );
                if (fileChooser.showOpenDialog(window) ==
JFileChooser.APPROVE_OPTION) {

fileTextField.setText(fileChooser.getSelectedFile().toString());
                    FileInputStream fis = null;
                    try {
                        fis = new
FileInputStream(fileChooser.getSelectedFile());
                        String str = "";
                        while (fis.available() > 0) {
                            str += (char) fis.read();
                        }
                        contentTextArea.setText(str);
                        fis.close();
                    } catch (FileNotFoundException ex) {
                        System.err.println("File tidak ditemukan");
                    } catch (IOException ex) {
                        System.err.println("File gagal dibaca");
                    }
                }
            }
        });
    }

    public static void main(String[] args) {
        NewFrame dialog = new NewFrame();
        dialog.pack();
        dialog.setVisible(true);
        System.exit(0);
    }
}
```
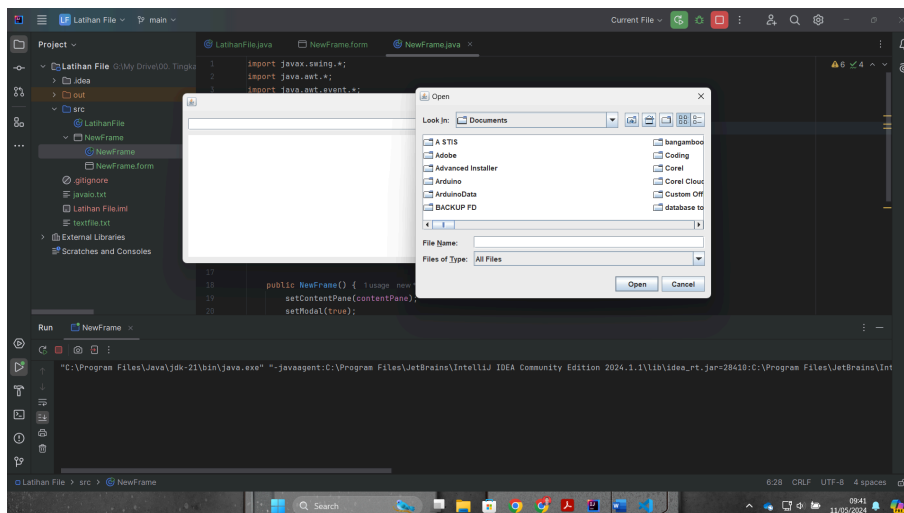
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NIM : 222212738

Kelas / No : 2KS1 / 25

GUI:

Output:

Nama   : Muh. Nur Afrizal

NIM   : 222212738
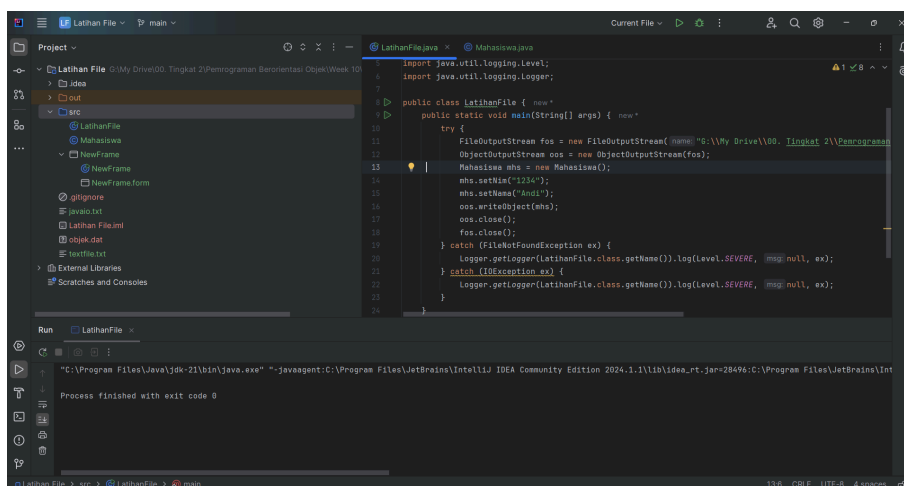
Kelas / No   : 2KS1 / 25

MEMBACA DAN MENULIS OBJEK

Source Code:

```java
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.ObjectOutputStream;
import java.util.logging.Level;
import java.util.logging.Logger;

public class LatihanFile {
    public static void main(String[] args) {
        try {
            FileOutputStream fos = new FileOutputStream("G:\\My
Drive\\00. Tingkat 2\\Pemrograman Berorientasi Objek\\Week
10\\Praktikum\\Latihan File\\objek.dat");
            ObjectOutputStream oos = new ObjectOutputStream(fos);
            Mahasiswa mhs = new Mahasiswa();
            mhs.setNim("1234");
            mhs.setNama("Andi");
            oos.writeObject(mhs);
            oos.close();
            fos.close();
        } catch (FileNotFoundException ex) {

Logger.getLogger(LatihanFile.class.getName()).log(Level.SEVERE, null,
ex);
        } catch (IOException ex) {

Logger.getLogger(LatihanFile.class.getName()).log(Level.SEVERE, null,
ex);
        }
    }
}
```

Output:

D. Membaca Objek

Source Code:

```java
import java.io.*;

public class LatihanFile {
    public static void main(String[] args) {
        try {
            File f = new File("G:\\My Drive\\00. Tingkat 2\\Pemrograman
Berorientasi Objek\\Week 10\\Praktikum\\Latihan File\\objek.dat");
            FileInputStream fis = new FileInputStream(f);
            ObjectInputStream ois = new ObjectInputStream(fis);
            Mahasiswa mhs = (Mahasiswa) ois.readObject();
            System.out.println(mhs.getNim());
            System.out.println(mhs.getNama());
            ois.close();
            fis.close();
        } catch (FileNotFoundException ex) {
            System.err.println("File tidak ditemukan");
        } catch (IOException ex) {
            System.err.println("File gagal dibaca");
        } catch (ClassNotFoundException ex) {
            System.err.println("Format file salah");
        }
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2024.1.1\lib\idea_rt.jar=30572:C:\Program Files\JetBrains\Int
1234
Andi

Process finished with exit code 0
```

Penerapan pada LatihanGUI Modul 9

Source Code:

1. Database.java

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

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;
```

```java
import java.util.List;
import java.util.logging.Level;
import java.util.logging.Logger;

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

    }

    public static synchronized Database getInstance() {
        try {
            loadFile();
        } catch (IOException | ClassNotFoundException ex) {

Logger.getLogger(Database.class.getName()).log(Level.SEVERE, null,
ex);
        }
        if(instance == null) {
            instance = new Database();
        }
        return instance;
    }

    public void insertMahasiswa(Mahasiswa mahasiswa) {
        data.add(mahasiswa);
        updateFile();
    }

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

    private static void loadFile() throws IOException,
ClassNotFoundException {
        try {
            File f = new File("G:\\My Drive\\00. Tingkat
2\\Pemrograman Berorientasi Objek\\Week 10\\Praktikum\\Latihan
GUI\\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 (IOException ex) {
            System.err.println("File gagal dibaca");
        } catch (ClassNotFoundException ex) {
            System.err.println("Format File salah");
        }
    }

    private void updateFile() {
```

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```java
        try {
            FileOutputStream fos = new FileOutputStream("G:\\My
Drive\\00. Tingkat 2\\Pemrograman Berorientasi Objek\\Week
10\\Praktikum\\Latihan GUI\\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");
        }
    }
}
```

2. EntryPanel.java

```java
/*
 * Click
nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.tx
t to change this license
 * Click
nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JPanel.java to
edit this template
 */
package latihan.gui;

import java.util.ArrayList;
import javax.swing.JOptionPane;
import javax.swing.table.DefaultTableModel;

/**
 *
 * @author muham
 */
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">
    private void initComponents() {

        jkButtonGroup = new javax.swing.ButtonGroup();
```

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

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

        jLabel5.setText("tahun");

        jLabel6.setText("Alamat :");

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

        jLabel7.setText("Provinsi :");

        provinsiComboBox.setModel(new
javax.swing.DefaultComboBoxModel<>(new String[] { "Aceh", "DKI
Jakarta", "Jawa Timur", "Bali", "Maluku", "Papua" }));

        jLabel8.setText("Hobi :");

        membacaCheckBox.setText("Membaca");

        menyanyiCheckBox.setText("Menyanyi");

        jLabel1.setText("NIM :");

        jLabel2.setText("Jenis Kelamin :");

        jLabel3.setText("Nama :");

        jkButtonGroup.add(lakiRadioButton);
        lakiRadioButton.setText("Laki-laki");

        jkButtonGroup.add(perempuanRadioButton);
        perempuanRadioButton.setText("Perempuan");
```

```java
        jLabel4.setText("Umur :");

        berenangCheckBox.setText("Berenang");

        umurSpinner.setModel(new javax.swing.SpinnerNumberModel(15,
10, 60, 1));

        simpanButton.setText("Simpan");
        simpanButton.addActionListener(new
java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent
evt) {
                simpanButtonActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
                        .addGap(0, 342, Short.MAX_VALUE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()
                                .addGap(13, 13, 13)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.TRAILING)

.addComponent(simpanButton)

.addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING, false)

.addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addComponent(jLabel3, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE, 83, Short.MAX_VALUE)

.addComponent(jLabel4, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addComponent(jLabel6, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addComponent(jLabel7, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```java
.addComponent(jLabel8, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addComponent(berenangCheckBox,
javax.swing.GroupLayout.PREFERRED_SIZE, 85,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(menyanyiCheckBox,
javax.swing.GroupLayout.PREFERRED_SIZE, 85,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING, false)

.addComponent(perempuanRadioButton,
javax.swing.GroupLayout.PREFERRED_SIZE, 98,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(lakiRadioButton,
javax.swing.GroupLayout.PREFERRED_SIZE, 98,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(namaTextField, javax.swing.GroupLayout.DEFAULT_SIZE,
154, Short.MAX_VALUE)

.addComponent(nimTextField))

.addGroup(jPanel1Layout.createSequentialGroup()

.addComponent(umurSpinner, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, 39,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(provinsiComboBox,
javax.swing.GroupLayout.PREFERRED_SIZE, 92,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(membacaCheckBox,
javax.swing.GroupLayout.PREFERRED_SIZE, 85,
javax.swing.GroupLayout.PREFERRED_SIZE))))

.addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)))
        );
```

```java
        jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
                        .addGap(0, 439, Short.MAX_VALUE)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)
.addGroup(jPanel1Layout.createSequentialGroup()
                                .addContainerGap()
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
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.UNRELATE
D)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.BASELINE)
.addComponent(jLabel3)
.addComponent(namaTextField, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATE
D)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.BASELINE)
.addComponent(jLabel2)
.addComponent(lakiRadioButton))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addComponent(perempuanRadioButton)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.BASELINE)
.addComponent(jLabel4)
.addComponent(umurSpinner, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
.addComponent(jLabel5))
```

```java
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATE
D)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addComponent(jLabel6)

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                                        .addGap(7, 7, 7)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.BASELINE)

.addComponent(jLabel7)

.addComponent(provinsiComboBox,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATE
D)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addComponent(jLabel8)

.addComponent(membacaCheckBox))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(menyanyiCheckBox)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(berenangCheckBox)
                                        .addGap(18, 18, 18)
                                        .addComponent(simpanButton)
                                        .addContainerGap(37,
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
                    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);

        javax.swing.GroupLayout jPanel2Layout = new
javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
                    .addGap(0, 467, Short.MAX_VALUE)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                                    .addContainerGap(9,
Short.MAX_VALUE)
                                    .addComponent(jScrollPane2,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                    .addContainerGap())))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.
LEADING)
                    .addGap(0, 439, Short.MAX_VALUE)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.
Alignment.LEADING)

.addGroup(jPanel2Layout.createSequentialGroup()
                                    .addContainerGap()
                                    .addComponent(jScrollPane2,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)))
        );
```

```java
        add(jPanel2, java.awt.BorderLayout.CENTER);
    }// </editor-fold>

    private void
simpanButtonActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        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");
        }
        int umur = (Integer) umurSpinner.getValue();
        mhs.setUmur(umur);
        mhs.setAlamat(alamatTextArea.getText());

mhs.setProvinsi(provinsiComboBox.getSelectedItem().toString());
        ArrayList<String> hobiList = new ArrayList<>();
        if(membacaCheckBox.isSelected()) {
            hobiList.add("membaca");
        }
        if(menyanyiCheckBox.isSelected()) {
            hobiList.add("menyanyi");
        }
        if(berenangCheckBox.isSelected()) {
            hobiList.add("berenang");
        }
        mhs.setHobi(hobiList);
        Database.getInstance().insertMahasiswa(mhs);

        clearForm();
        JOptionPane.showMessageDialog(this, "Sukses Tersimpan");
        loadTableData();
    }

    private void loadTableData() {
        DefaultTableModel dtm = (DefaultTableModel)
mahasiswaTable.getModel();

        //refresh table
        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("");
```

```java
        namaTextField.setText("");
        jkButtonGroup.clearSelection();
        umurSpinner.setValue(15);
        alamatTextArea.setText("");
        provinsiComboBox.setSelectedItem(-1);
        membacaCheckBox.setSelected(false);
        menyanyiCheckBox.setSelected(false);
        berenangCheckBox.setSelected(false);
    }


    // Variables declaration - do not modify
    private javax.swing.JTextArea alamatTextArea;
    private javax.swing.JCheckBox berenangCheckBox;
    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.ButtonGroup jkButtonGroup;
    private javax.swing.JRadioButton lakiRadioButton;
    private javax.swing.JTable mahasiswaTable;
    private javax.swing.JCheckBox membacaCheckBox;
    private javax.swing.JCheckBox menyanyiCheckBox;
    private javax.swing.JTextField namaTextField;
    private javax.swing.JTextField nimTextField;
    private javax.swing.JRadioButton perempuanRadioButton;
    private javax.swing.JComboBox<String> provinsiComboBox;
    private javax.swing.JButton simpanButton;
    private javax.swing.JSpinner umurSpinner;
    // End of variables declaration
}
```

Output:

Nama : Muh. Nur Afrizal

NIM : 222212738

Kelas / No : 2KS1 / 25

Setelah di*close* lalu dibuka kembali: