

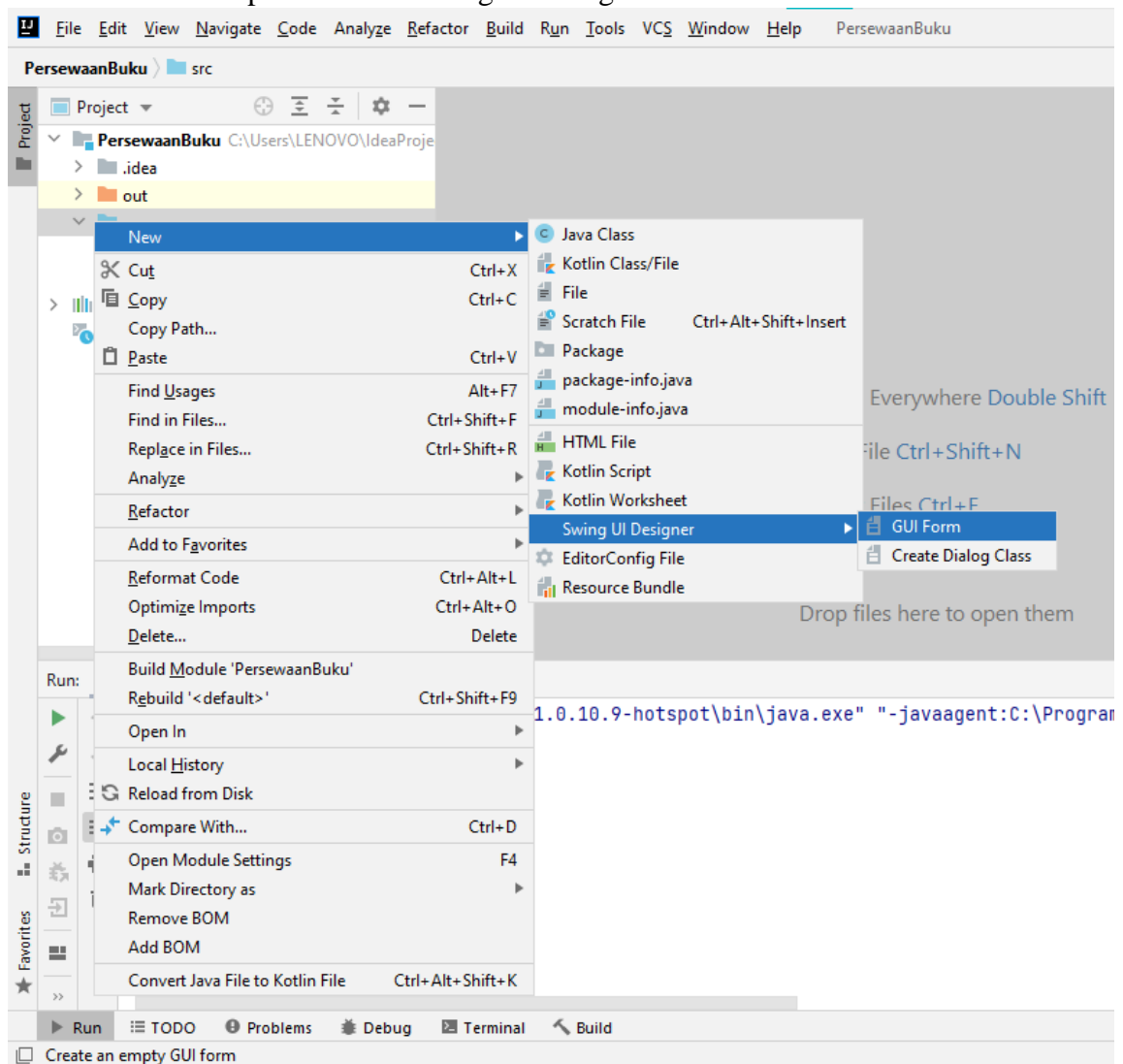
**PENJELASAN PROGRAM UAS**  
**“PERSEWAAN BUKU”**

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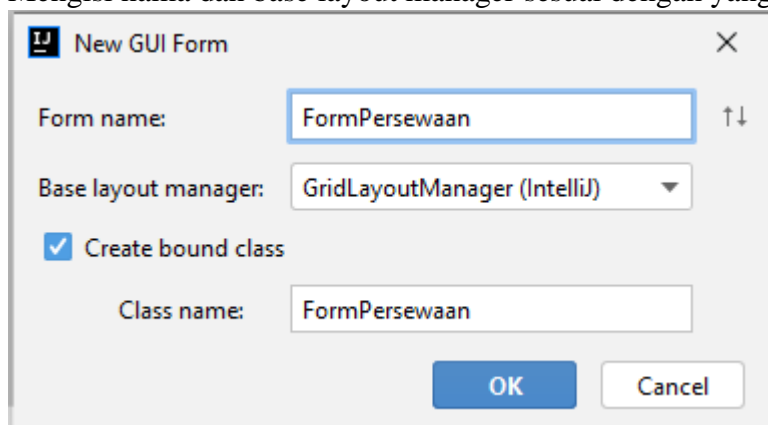
Alat yang digunakan :  
IntelliJ IDEA Community Version  
JDK 11

## Membuat GUI IntelliJ IDEA

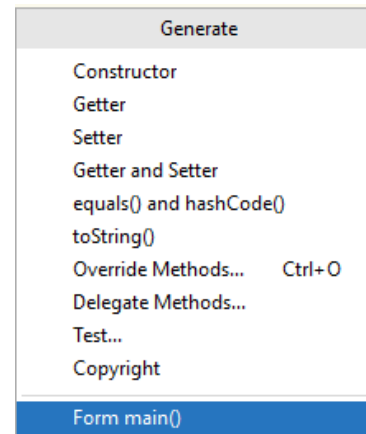
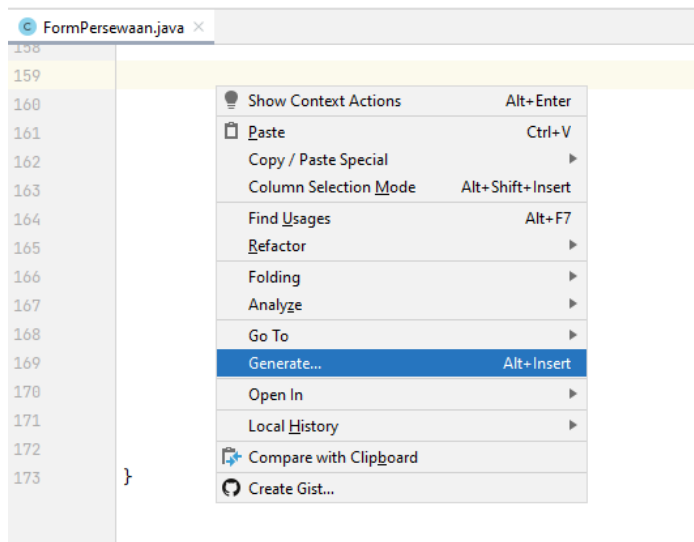
1. Klik kiri folder src pilih New -> Swing UI Designer -> GUI Form



2. Mengisi nama dan base layout manager sesuai dengan yang diinginkan



3. Membuat main method



## Penjelasan Program

### 1. Main method

```
public static void main(String[] args) {  
    JFrame frame = new JFrame( title: "FormPersewaan");  
    frame.setContentPane(new FormPersewaan().panelPersewaan);  
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
    frame.pack();  
    frame.setVisible(true);  
}
```

Fungsi yang akan dipanggil ketika akan menjalankan program

### 2. Deklarasi koneksi database

```
protected static final String JDBC_DRIVER;  
protected static final String DB_URL;  
protected static final String USER;  
protected static final String PASS;  
  
static {  
    JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";  
    DB_URL = "jdbc:mysql://localhost/sewabuku";  
    USER = "root";  
    PASS = "";  
}
```

JDBC	: Java Database Connectivity (Perantara antara program Java dengan Database)
DB_URL	: Format ({driver}:{database}://localhost/{nama_database})
USER	: Akun user untuk mengakses database
PASS	: Password dari akun user

### 3. Membuat Form

Persewaan Buku XYZ			
Tanggal :	Label	Jam :	Label
Judul Buku :	<input type="text"/>	Biaya :	
		Rp.	Label
<input type="button" value="Simpan"/>	<input type="button" value="Kembalikan Buku"/>	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Shape	Color
round	red
square	green

Hasil perancangan tampilan aplikasi

- Tanggal
- Jam
- Input Judul Buku
- Biaya
- Tombol (Simpan, Kembali, Edit, Delete)
- Tabel

#### 4. Komponen

The screenshot displays the NetBeans IDE's component management interface. On the left, the 'Component Tree' window shows a hierarchical structure of components. The root is 'Form (FormPersewaan)', which contains 'panelPersewaan' (a JPanel). 'panelPersewaan' includes several labels (e.g., 'Persewaan Buku XYZ', 'Tanggal', 'Judul Buku', 'Biaya', 'Rp.', 'Jam', 'localDate', 'localTime', 'nominal'), a text field ('textJudul'), and four buttons ('buttonSimpan', 'buttonKembali', 'buttonDelete', 'buttonEdit'). Below 'panelPersewaan' is a 'JScrollPane' containing a 'tablePersewaan' (JTable). At the bottom of the Component Tree is a table with properties for the selected component.

Property	Value
field name	
Custom Create	<input type="checkbox"/>
border	None
Horizontal Size Policy	Can Shrink, Can Grow, Wa...
Vertical Size Policy	Can Shrink, Can Grow, Wa...
Horizontal Align	Fill
Vertical Align	Fill
Indent	0

Below the table is a checkbox labeled 'Show expert properties'. On the right, the 'Palette' window shows a list of Swing components. The 'Swing' category is selected, and components include JSpacer, VSpacer, JPanel, JScrollPane, JButton, JRadioButton, JCheckBox, JLabel, JTextField, JPasswordField, JFormattedTextField, JTextArea, JTextPane, JEditorPane, JComboBox, JTable, JList, JTree, JTabbedPane, JSplitPane, JSpinner, JSlider, JSeparator, JProgressBar, JToolBar, JToolBar.Separator, and JScrollBar. The 'Palette' category is also selected at the bottom.

Komponen untuk memodifikasi tampilan java

## 5. Konstruktor

```
public FormPersewaan(){
    String tanggal = String.valueOf(today);
    LocalDate.setText(tanggal);

    DateTimeFormatter formatTime = DateTimeFormatter.ofPattern("HH:mm");
    String waktu = formatTime.format(time);
    String jam = String.valueOf(waktu);
    LocalTime.setText(jam);

    nominal.setText("5.000");

    TampilkanTabel();

    buttonSimpan.addMouseListener((MouseAdapter) mouseClicked(e) → {
        super.mouseClicked(e);

        String isiJudul = textJudul.getText();
        textJudul.setText("");

        LocalDate isiTanggal = today;

        LocalDate isiTanggalKembali = today.plusDays(7);

        Tambah(isiJudul, isiTanggal, isiTanggalKembali);

        TampilkanTabel();
    });
}
```

Fungsi yang pertamakali dipanggil ketika class tersebut dijalankan

Mengatur tampilan awal :

- Tanggal
- Jam
- Nominal
- Event (kegiatan yang berjalan dalam program)

## 6. Method Tampil

```
public void TampilkanTabel(){
    DefaultTableCellRenderer tengah = new DefaultTableCellRenderer();
    tengah.setHorizontalAlignment(JLabel.CENTER);
    DefaultTableCellRenderer judul = new DefaultTableCellRenderer();
    judul.setHorizontalAlignment(JLabel.LEADING);

    try{

        Class.forName(JDBC_DRIVER);

        connectDB = DriverManager.getConnection(DB_URL,USER,PASS);

        DefaultTableModel isiTabel = new DefaultTableModel();
        isiTabel.addColumn( columnName: "ID");
        isiTabel.addColumn( columnName: "Judul Buku");
        isiTabel.addColumn( columnName: "Tanggal Pinjam");
        isiTabel.addColumn( columnName: "Tanggal Harus Kembali");
        isiTabel.addColumn( columnName: "Tanggal Kembali");
        isiTabel.addColumn( columnName: "Denda");
        isiTabel.addColumn( columnName: "Biaya Sewa");

        statmt = connectDB.createStatement();
        String sql = "SELECT * FROM sewabuku";

        hasil= statmt.executeQuery(sql);

        while (hasil.next()){
            isiTabel.addRow(new Object[] {
                hasil.getString( columnName: "id"),
                hasil.getString( columnName: "judul"),
                hasil.getString( columnName: "tanggal_pinjam"),
                hasil.getString( columnName: "tanggal_harus_kembali"),
                hasil.getString( columnName: "tanggal_kembali"),
                hasil.getString( columnName: "denda"),
                hasil.getString( columnName: "biaya_sewa")
            });
        }
        hasil.close();
        connectDB.close();
        statmt.close();

        tablePersewaan.setModel(isiTabel);

        tablePersewaan.getColumnModel().getColumn( columnIndex: 0).setCellRenderer(tengah);
        tablePersewaan.getColumnModel().getColumn( columnIndex: 1).setCellRenderer(judul);
        tablePersewaan.getColumnModel().getColumn( columnIndex: 2).setCellRenderer(tengah);
        tablePersewaan.getColumnModel().getColumn( columnIndex: 3).setCellRenderer(tengah);
        tablePersewaan.getColumnModel().getColumn( columnIndex: 4).setCellRenderer(tengah);
    }catch (SQLException eksepsi){
        System.out.println(eksepsi.getMessage());
    } catch (ClassNotFoundException e) {
        e.printStackTrace();
    }
}
```

Program untuk menampilkan data dari table sewabuku yang telah terkoneksi



## 7. Method Tambah

```
public void Tambah(String judul, LocalDate tanggalPinjam, LocalDate tanggalHarusKembali){
    try{

        Class.forName(JDBC_DRIVER);

        connectDB = DriverManager.getConnection(DB_URL,USER,PASS);

        String sql="INSERT INTO sewabuku (judul, tanggal_pinjam, tanggal_harus_kembali) VALUES (?, ?, ?)";

        PreparedStatement prestm = connectDB.prepareStatement(sql);

        prestm.setString(1, judul);
        prestm.setString(2, String.valueOf(tanggalPinjam));
        prestm.setString(3, String.valueOf(tanggalHarusKembali));

        prestm.execute();

        connectDB.close();

    } catch (SQLException throwables) {
        throwables.printStackTrace();
    } catch (ClassNotFoundException e) {
        e.printStackTrace();
    }
}
```

Menambah data baru untuk disimpan