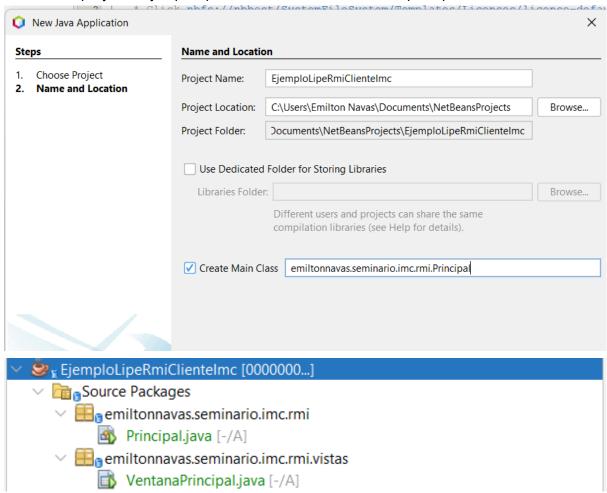
Guia Lipermi Emilton Navas

Creamos el proyecto EjemploLipeRmiClientelmc con su clase principal



```
/*
  * Click
nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to
change this license
  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Main.java to
edit this template
  */
package emiltonnavas.seminario.imc.rmi;

import emiltonnavas.seminario.imc.rmi.net.Servidor;

/**
  * @author Emilton Navas
  */
```

creamos el paquete para las vistas con un Jframe form

```
/*
    * 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
    */
package emiltonnavas.seminario.imc.rmi.vistas;

import java.awt.Color;
import java.swing.JButton;
import javax.swing.JButton;
import javax.swing.Jlabel;
import javax.swing.JOptionPane;
import emiltonnavas.seminario.imc.rmi.lib.*;
import net.sf.lipermi.handler.CallHandler;
import net.sf.lipermi.net.Client;

/**
    *
    */
public class VentanaPrincipal extends javax.swing.JFrame {
    /**
    * Creates new form VentanaPrincipal
    */
```

```
CallHandler invocadorRemoto;
  String ipServidor = "localhost";
   int puerto = 9007;
   IRemotaCalculoImc calculoImcRemoto;
   Client cliente:
   public VentanaPrincipal() {
        initComponents();
the form.
     * regenerated by the Form Editor.
   @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
   private void initComponents() {
        jLabel1 = new javax.swing.JLabel();
        jTabbedPane1 = new javax.swing.JTabbedPane();
        jPanel1 = new javax.swing.JPanel();
        jLabel2 = new javax.swing.JLabel();
        campoPuertoServidor = new javax.swing.JTextField();
        jLabel3 = new javax.swing.JLabel();
        campoIPServidor = new javax.swing.JTextField();
        btnIniciar = new javax.swing.JButton();
        jLabel4 = new javax.swing.JLabel();
        txtEstado = new javax.swing.JLabel();
        ¡Panel2 = new javax.swing.JPanel();
        jLabel5 = new javax.swing.JLabel();
        campoPeso = new javax.swing.JTextField();
        jLabel6 = new javax.swing.JLabel();
        campoAltura = new javax.swing.JTextField();
        jLabel7 = new javax.swing.JLabel();
        txtResultado = new javax.swing.JLabel();
        txtMensaje = new javax.swing.JLabel();
        btnIniciar1 = new javax.swing.JButton();
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
       jLabel1.setFont(new java.awt.Font("Segoe Print", 1, 36)); //
NOI18N
```

```
jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
        jLabel1.setText("CLIENTE IMC");
        jLabel2.setText("DIRECCION IP:");
        campoPuertoServidor.setText("9007");
        jLabel3.setText("PUERTO DE RED:");
        campoIPServidor.setText("localhost");
        campoIPServidor.addActionListener(new
java.awt.event.ActionListener() {
           public void actionPerformed(java.awt.event.ActionEvent evt)
                campoIPServidorActionPerformed(evt);
            }
        });
        btnIniciar.setFont(new java.awt.Font("Tahoma", 1, 18)); //
NOI18N
        btnIniciar.setForeground(new java.awt.Color(0, 204, 0));
        btnIniciar.setText("CONECTAR");
        btnIniciar.addActionListener(new java.awt.event.ActionListener()
            public void actionPerformed(java.awt.event.ActionEvent evt)
                btnIniciarActionPerformed(evt);
        });
        jLabel4.setText("ESTADO:");
        txtEstado.setText("DESCONECTADO");
       javax.swing.GroupLayout jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
            .addGroup(jPanel1Layout.createSequentialGroup()
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
```

```
.addGroup(jPanel1Layout.createSequentialGroup()
                        .addGap(30, 30, 30)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
.addGroup(jPanel1Layout.createSequentialGroup()
                                .addComponent(jLabel4)
                                .addGap(18, 18, 18)
                                .addComponent(txtEstado))
.addGroup(jPanel1Layout.createSequentialGroup()
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
                                    .addComponent(jLabel2)
                                     .addComponent(jLabel3))
                                .addGap(35, 35, 35)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING, false)
                                    .addComponent(campoIPServidor)
                                    .addComponent(campoPuertoServidor,
javax.swing.GroupLayout.DEFAULT_SIZE, 167, Short.MAX_VALUE)))))
                    .addGroup(jPanel1Layout.createSequentialGroup()
                        .addGap(167, 167, 167)
                        .addComponent(btnIniciar,
javax.swing.GroupLayout.PREFERRED_SIZE, 197,
javax.swing.GroupLayout.PREFERRED SIZE)))
                .addContainerGap(167, Short.MAX VALUE))
        );
       jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(23, 23, 23)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                    .addComponent(jLabel2)
                    .addComponent(campoIPServidor,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(29, 29, 29)
```

```
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                    .addComponent(jLabel3)
                    .addComponent(campoPuertoServidor,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(28, 28, 28)
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                    .addComponent(jLabel4)
                    .addComponent(txtEstado))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 50,
Short.MAX_VALUE)
                .addComponent(btnIniciar,
javax.swing.GroupLayout.PREFERRED_SIZE, 32,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(29, 29, 29))
        );
        jTabbedPane1.addTab("CONEXION", jPanel1);
       jLabel5.setText("PESO:");
       jLabel6.setText("ALTURA:");
       jLabel7.setText("IMC:");
       txtResultado.setFont(new java.awt.Font("Tahoma", 1, 14)); //
NOI18N
        txtResultado.setForeground(new java.awt.Color(255, 0, 0));
        txtResultado.setText("0.0");
txtMensaje.setBorder(javax.swing.BorderFactory.createEtchedBorder());
        btnIniciar1.setFont(new java.awt.Font("Tahoma", 1, 18)); //
NOI18N
        btnIniciar1.setForeground(new java.awt.Color(0, 153, 0));
        btnIniciar1.setText("CALCULAR");
        btnIniciar1.addActionListener(new
java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt)
```

```
btnIniciar1ActionPerformed(evt);
            }
        });
       javax.swing.GroupLayout jPanel2Layout = new
javax.swing.GroupLayout(jPane12);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(
jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(34, 34, 34)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
                    .addGroup(jPanel2Layout.createSequentialGroup()
                        .addComponent(jLabel7,
javax.swing.GroupLayout.PREFERRED_SIZE, 37,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addGap(18, 18, 18)
                        .addComponent(txtResultado,
javax.swing.GroupLayout.PREFERRED_SIZE, 37,
javax.swing.GroupLayout.PREFERRED_SIZE)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 40,
Short.MAX_VALUE)
                        .addComponent(txtMensaje,
javax.swing.GroupLayout.PREFERRED SIZE, 359,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addContainerGap())
                    .addGroup(jPanel2Layout.createSequentialGroup()
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
                            .addComponent(jLabel5,
javax.swing.GroupLayout.PREFERRED SIZE, 40,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jLabel6,
javax.swing.GroupLayout.PREFERRED_SIZE, 58,
javax.swing.GroupLayout.PREFERRED_SIZE))
                        .addGap(27, 27, 27)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
```

```
.addComponent(campoAltura,
javax.swing.GroupLayout.PREFERRED_SIZE, 169,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(campoPeso,
javax.swing.GroupLayout.PREFERRED_SIZE, 169,
javax.swing.GroupLayout.PREFERRED_SIZE))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                        .addComponent(btnIniciar1,
javax.swing.GroupLayout.PREFERRED_SIZE, 161,
javax.swing.GroupLayout.PREFERRED SIZE)
                        .addGap(34, 34, 34))))
        );
       ¡Panel2Layout.setVerticalGroup(
jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
            .addGroup(jPanel2Layout.createSequentialGroup()
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.LEADING)
                    .addGroup(jPanel2Layout.createSequentialGroup()
                        .addGap(36, 36, 36)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                            .addComponent(jLabel5)
                            .addComponent(campoPeso,
javax.swing.GroupLayout.PREFERRED SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                        .addGap(33, 33, 33)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                            .addComponent(jLabel6)
                            .addComponent(campoAltura,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED SIZE))
                        .addGap(44, 44, 44))
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                        .addContainerGap()
```

```
.addComponent(btnIniciar1,
javax.swing.GroupLayout.PREFERRED_SIZE, 99,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addGap(30, 30, 30)))
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.TRAILING)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alig
nment.BASELINE)
                        .addComponent(jLabel7)
                        .addComponent(txtResultado))
                    .addComponent(txtMensaje,
javax.swing.GroupLayout.PREFERRED_SIZE, 25,
javax.swing.GroupLayout.PREFERRED SIZE))
                .addContainerGap(69, Short.MAX_VALUE))
        );
       jTabbedPane1.addTab("CALCULAR IMC", jPanel2);
       javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.L
EADING)
                    .addGroup(layout.createSequentialGroup()
                        .addGap(154, 154, 154)
                        .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE, 268,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGroup(layout.createSequentialGroup()
                        .addGap(24, 24, 24)
                        .addComponent(jTabbedPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 531,
javax.swing.GroupLayout.PREFERRED_SIZE)))
                .addContainerGap(21, Short.MAX VALUE))
        );
       layout.setVerticalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
```

```
.addGap(23, 23, 23)
                .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE, 65,
javax.swing.GroupLayout.PREFERRED SIZE)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(jTabbedPane1,
javax.swing.GroupLayout.PREFERRED SIZE, 286,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(44, Short.MAX_VALUE))
        );
        pack();
   }// </editor-fold>
    private void
campoIPServidorActionPerformed(java.awt.event.ActionEvent evt) {
   }
   private void btnIniciar1ActionPerformed(java.awt.event.ActionEvent
evt) {
       float peso = Float.parseFloat(campoPeso.getText());
   float altura = Float.parseFloat(campoAltura.getText());
    Thread hilo = new Thread() {
        public void run() {
            try {
                System.out.println("Peso: " + peso);
                System.out.println("Altura: " + altura);
                DatosImc datos = new DatosImc();
                datos.setAltura(altura);
                datos.setPeso(peso);
                System.out.println("Enviados los datos\nEsperando
respuesta");
                datos = calculoImcRemoto.calcularImc(datos);
                System.out.println("IMC: " + datos.getResultado() +
"\nMensaje: " + datos.getInterpretacion());
                txtResultado.setText(datos.getResultado() + "");
                txtMensaje.setText(datos.getInterpretacion());
            } catch (Exception ex) {
                JOptionPane.showMessageDialog(VentanaPrincipal.this,
"ERROR con el cliente " + ex.getMessage());
                System.out.println("ERROR con el cliente " +
ex.getMessage());
```

```
ex.printStackTrace();
       }
    };
   hilo.start();
   private void btnIniciarActionPerformed(java.awt.event.ActionEvent
evt) {
        // TODO add your handling code here:
       try {
        if (btnIniciar.getText().equalsIgnoreCase("Conectar")) {
            puerto = Integer.parseInt(campoPuertoServidor.getText());
            ipServidor = campoIPServidor.getText();
            invocadorRemoto = new CallHandler();
            cliente = new Client(ipServidor, puerto, invocadorRemoto);
            calculoImcRemoto = (IRemotaCalculoImc)
cliente.getGlobal(IRemotaCalculoImc.class);
            btnIniciar.setText("Desconectar");
            btnIniciar.setForeground(Color.RED);
            txtEstado.setText("Conectado");
            txtEstado.setForeground(Color.GREEN);
        } else if (btnIniciar.getText().equalsIgnoreCase("Desconectar"))
{
            cliente.close();
            btnIniciar.setText("Conectar");
            txtEstado.setText("Desconectado");
            btnIniciar.setForeground(Color.GREEN);
            txtEstado.setForeground(Color.RED);
    } catch (IOException ex) {
        System.out.println("ERROR AL CONECTAR");
        ex.printStackTrace();
   }
   public JLabel getTxtEstado() {
        return txtEstado;
   public JButton getBtnIniciar() {
       return btnIniciar;
     * @param args the command line arguments
```

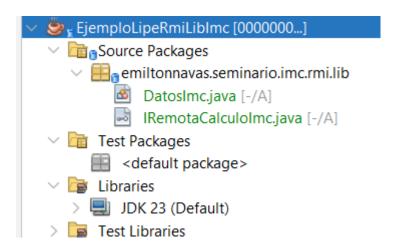
```
public static void main(String args[]) {
setting code (optional) ">
         * For details see
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFeel(info.getClassName());
                   break;
        } catch (ClassNotFoundException ex) {
java.util.logging.Logger.getLogger(VentanaPrincipal.class.getName()).log
(java.util.logging.Level.SEVERE, null, ex);
       } catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(VentanaPrincipal.class.getName()).log
(java.util.logging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(VentanaPrincipal.class.getName()).log
(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(VentanaPrincipal.class.getName()).log
(java.util.logging.Level.SEVERE, null, ex);
        //</editor-fold>
```

```
java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new VentanaPrincipal().setVisible(true);
    });
private javax.swing.JButton btnIniciar;
private javax.swing.JButton btnIniciar1;
private javax.swing.JTextField campoAltura;
private javax.swing.JTextField campoIPServidor;
private javax.swing.JTextField campoPeso;
private javax.swing.JTextField campoPuertoServidor;
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.JPanel jPanel1;
private javax.swing.JPanel jPanel2;
private javax.swing.JTabbedPane jTabbedPane1;
private javax.swing.JLabel txtEstado;
private javax.swing.JLabel txtMensaje;
private javax.swing.JLabel txtResultado;
```





creamos el proyecto EjemploLipeRmiLibImc de tipo java class library



creamos la clase datos imc

```
/*
 * Click
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change this license
```

```
package emiltonnavas.seminario.imc.rmi.lib;
import emiltonnavas.seminario.imc.rmi.lib.DatosImc;
import emiltonnavas.seminario.imc.rmi.lib.IRemotaCalculoImc;
import java.io.Serializable;
public class DatosImc implements Serializable {
   private float peso;
   private float altura;
   private float resultado;
   private String interpretation;
   public DatosImc() {
   }
   public DatosImc(float peso, float altura) {
       this.peso = peso;
       this.altura = altura;
   }
   public float getPeso() {
       return peso;
   public void setPeso(float peso) {
       this.peso = peso;
   public float getAltura() {
       return altura;
   public void setAltura(float altura) {
       this.altura = altura;
   public float getResultado() {
       return resultado;
    }
```

```
public void setResultado(float resultado) {
    this.resultado = resultado;
}

public String getInterpretacion() {
    return interpretation;
}

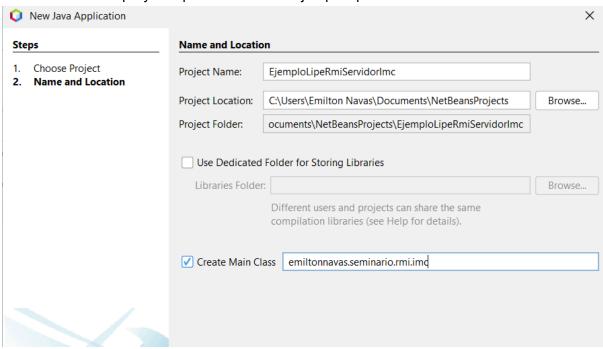
public void setInterpretacion(String interpretation) {
    this.interpretation = interpretation;
}
```

y creamos la interfaz

```
/*
  * Click
nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to
change this license
  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Interface.java
to edit this template
  */
package emiltonnavas.seminario.imc.rmi.lib;

/**
  * @author Emilton Navas
  */
public interface IRemotaCalculoImc {
    public DatosImc calculaImc(DatosImc datos);
}
```

Ahora hacemos el proyecto para el servidor EjemploLipeRmiServidorImc



```
} catch (Exception ex) {
        System.out.println(ex.getLocalizedMessage());
    }
}
```

creamos el paquete emiltonnavas.seminario.imc.rmi.net

y creamos las clases Servidor y CalculoRmilmcImplem

```
package emiltonnavas.seminario.imc.rmi.net;
import emiltonnavas.seminario.imc.rmi.lib.DatosImc;
import emiltonnavas.seminario.imc.rmi.lib.IRemotaCalculoImc;
public class CalculoRmiImcImplem implements IRemotaCalculoImc {
   private DatosImc datos;
   public CalculoRmiImcImplem() {
    }
   public DatosImc calcularImc(DatosImc datos) {
        float resultado = 0;
        if (datos.getPeso() <= 0 || datos.getAltura() <= 0) {</pre>
            datos.setInterpretacion("ERROR: El peso y la altura deben
ser mayores que 0");
            return datos;
        } else {
            resultado = datos.getPeso() / (datos.getAltura() *
datos.getAltura());
            datos.setResultado(resultado);
            if (resultado < 18.5) {</pre>
                datos.setInterpretacion("Debes consultar un Medico, tu
peso es muy bajo");
            } else if (resultado >= 18.5 && resultado <= 24.9) {</pre>
                datos.setInterpretacion("Estas bien de peso");
```

Servidor

```
/*
  * Click
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change this license
  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to
edit this template
  */
package emiltonnavas.seminario.imc.rmi.net;

import emiltonnavas.seminario.imc.rmi.lib.IRemotaCalculoImc;
import java.io.IOException;
import net.sf.lipermi.exception.LipeRMIException;
import net.sf.lipermi.handler.CallHandler;
import net.sf.lipermi.net.Server;

/**
  * @author Emilton Navas
  */
public class Servidor {
   private int puerto = 9007;
   private CallHandler invocador;
   private Server servidor;
   private CalculoRmiImcImplem calculoImc;
```

```
private IRemotaCalculoImc calculoImcRemote;
   public Servidor() {
        invocador = new CallHandler();
        servidor = new Server();
        calculoImc = new CalculoRmiImcImplem();
   public void iniciar() throws Exception {
        try {
            invocador.registerGlobal(IRemotaCalculoImc.class,
calculoImc);
            servidor.bind(puerto, invocador);
        } catch (LipeRMIException ex) {
            throw new Exception("Error: No es posible invocar métodos
remotos");
        } catch (IOException ex) {
            throw new Exception("Error: I/O");
       }
   }
   public void detener() {
       servidor.close();
```

e implementamos la libreria lipermi y el proyecto

