/\*

\* To change this license header, choose License Headers in Project Properties.

\* To change this template file, choose Tools | Templates

\* and open the template in the editor.

\*/

package home;

import java.awt.Dimension;

import java.awt.image.BufferedImage;

import java.io.File;

import java.io.IOException;

import java.util.logging.Level;

import java.util.logging.Logger;

import javax.imageio.ImageIO;

import javax.swing.ImageIcon;

import javax.swing.JFileChooser;

import javax.swing.JOptionPane;

import javax.swing.WindowConstants;

import steganography.Steganography;

public class MainScreen extends javax.swing.JFrame {

Steganography steganography = null;

BufferedImage bufferedImage = null;

int key;

public MainScreen() {

initComponents();

key = 1;

secretMessageTextField.setVisible(false);

secretMessageLabel.setVisible(false);

keyLabel.setVisible(false);

keyTextField.setVisible(false);

steganography = new Steganography();

firstSectionImage.setSize(200, 200);

secondImageSection.setSize(200, 200);

setDefaultCloseOperation(WindowConstants.DISPOSE\_ON\_CLOSE);

}

/\*\*

\* 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() {

firstSectionImage = new javax.swing.JLabel();

firstSectionImage.setSize(300, 300);

secondImageSection = new javax.swing.JLabel();

secondImageSection.setSize(300, 300);

jLabel1 = new javax.swing.JLabel();

keyTextField = new javax.swing.JTextField();

keyLabel = new javax.swing.JLabel();

secretMessageLabel = new javax.swing.JLabel();

secretMessageTextField = new javax.swing.JTextField();

jMenuBar1 = new javax.swing.JMenuBar();

jMenu1 = new javax.swing.JMenu();

openImage = new javax.swing.JMenuItem();

exit = new javax.swing.JMenuItem();

grayScale = new javax.swing.JMenu();

jMenuItem3 = new javax.swing.JMenuItem();

binaryConversion = new javax.swing.JMenuItem();

encryptData = new javax.swing.JMenuItem();

embedData = new javax.swing.JMenuItem();

jMenuItem7 = new javax.swing.JMenuItem();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setFont(new java.awt.Font("Times New Roman", 1, 24)); // NOI18N

jLabel1.setText("A Novel Approach to Data Hiding to Maintain Visual Artifacts of Binary Cover Image");

keyTextField.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

keyTextFieldActionPerformed(evt);

}

});

keyLabel.setText("Enter Key");

secretMessageLabel.setText("Secret Message");

secretMessageTextField.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

secretMessageTextFieldActionPerformed(evt);

}

});

jMenu1.setText("File");

openImage.setText("Open Image");

openImage.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

openImageActionPerformed(evt);

}

});

jMenu1.add(openImage);

exit.setText("Exit");

jMenu1.add(exit);

jMenuBar1.add(jMenu1);

grayScale.setText("Edit");

jMenuItem3.setText("Gray Scale conversion");

jMenuItem3.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jMenuItem3ActionPerformed(evt);

}

});

grayScale.add(jMenuItem3);

binaryConversion.setText("Binary COnversion");

binaryConversion.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

binaryConversionActionPerformed(evt);

}

});

grayScale.add(binaryConversion);

encryptData.setText("Encrypt Data");

encryptData.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

encryptDataActionPerformed(evt);

}

});

grayScale.add(encryptData);

embedData.setText("Embed Data");

embedData.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

embedDataActionPerformed(evt);

}

});

grayScale.add(embedData);

jMenuItem7.setText("Decrypt and Extract");

jMenuItem7.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jMenuItem7ActionPerformed(evt);

}

});

grayScale.add(jMenuItem7);

jMenuBar1.add(grayScale);

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()

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

.addGroup(layout.createSequentialGroup()

.addComponent(firstSectionImage, javax.swing.GroupLayout.PREFERRED\_SIZE, 190, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(119, 119, 119)

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

.addComponent(keyTextField)

.addComponent(keyLabel, javax.swing.GroupLayout.PREFERRED\_SIZE, 87, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(secretMessageLabel, javax.swing.GroupLayout.PREFERRED\_SIZE, 101, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(secretMessageTextField, javax.swing.GroupLayout.DEFAULT\_SIZE, 227, Short.MAX\_VALUE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(secondImageSection, javax.swing.GroupLayout.PREFERRED\_SIZE, 204, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(119, 119, 119)

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addComponent(jLabel1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)))

.addContainerGap())

);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addGap(21, 21, 21)

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 59, javax.swing.GroupLayout.PREFERRED\_SIZE)

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

.addGroup(layout.createSequentialGroup()

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 108, Short.MAX\_VALUE)

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

.addComponent(firstSectionImage, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(secondImageSection, javax.swing.GroupLayout.PREFERRED\_SIZE, 161, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(119, 119, 119))

.addGroup(layout.createSequentialGroup()

.addGap(115, 115, 115)

.addComponent(keyLabel)

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

.addComponent(keyTextField, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(18, 18, 18)

.addComponent(secretMessageLabel)

.addGap(18, 18, 18)

.addComponent(secretMessageTextField, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))))

);

pack();

}// </editor-fold>//GEN-END:initComponents

ImageIcon icon = new ImageIcon();

String filepath = "";

private void openImageActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_openImageActionPerformed

// TODO add your handling code here:

JFileChooser chooser = new JFileChooser();

int i = chooser.showOpenDialog(this);

if (i == JFileChooser.APPROVE\_OPTION) {

File f = chooser.getSelectedFile();

filepath = f.getPath();

try {

firstSectionImage.setIcon(new ImageIcon(ImageIO.read(new File(filepath))));

steganography.loadImage(filepath);

key = 1;

} catch (Exception e) {

e.printStackTrace();

}

}

}//GEN-LAST:event\_openImageActionPerformed

private void keyTextFieldActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_keyTextFieldActionPerformed

// TODO add your handling code here:

}//GEN-LAST:event\_keyTextFieldActionPerformed

private void secretMessageTextFieldActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_secretMessageTextFieldActionPerformed

// TODO add your handling code here:

}//GEN-LAST:event\_secretMessageTextFieldActionPerformed

private void jMenuItem3ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jMenuItem3ActionPerformed

// TODO add your handling code here:

if (key == 1) {

key = 2;

bufferedImage = steganography.convertTogray();

if (bufferedImage == null) {

JOptionPane.showMessageDialog(this, "Error");

} else {

JOptionPane.showMessageDialog(this, "Gray conversion successful");

try {

secondImageSection.setIcon(new ImageIcon(ImageIO.read(new File(filepath))));

} catch (IOException ex) {

Logger.getLogger(MainScreen.class.getName()).log(Level.SEVERE, null, ex);

}

}

} else {

JOptionPane.showMessageDialog(this, "Error");

}

}//GEN-LAST:event\_jMenuItem3ActionPerformed

private void binaryConversionActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_binaryConversionActionPerformed

// TODO add your handling code here:

if (key == 2) {

key = 3;

keyLabel.setVisible(true);

keyTextField.setVisible(true);

secretMessageLabel.setVisible(true);

secretMessageTextField.setVisible(true);

int status = steganography.convertToBinary();

if (status == 1) {

JOptionPane.showMessageDialog(this, "Binary conversion done");

} else {

JOptionPane.showMessageDialog(this, "Error");

}

} else {

JOptionPane.showMessageDialog(this, "Error");

}

}//GEN-LAST:event\_binaryConversionActionPerformed

String encrypted;

private void encryptDataActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_encryptDataActionPerformed

// TODO add your handling code here:

if (key == 3) {

String keyData = keyTextField.getText().toString();

String msg = secretMessageTextField.getText().toString();

if (keyData.equals("") || keyData == null || msg.equals("") || msg == null) {

JOptionPane.showMessageDialog(this, "Please fill data first");

} else {

key = 4;

keyTextField.setText("");

secretMessageTextField.setText("");

encrypted = steganography.encrypt(msg, keyData);

keyLabel.setVisible(false);

keyTextField.setVisible(false);

secretMessageLabel.setVisible(false);

secretMessageTextField.setVisible(false);

if (encrypted.equals("") || encrypted == null) {

JOptionPane.showMessageDialog(this, "Error in encrypting");

} else {

JOptionPane.showMessageDialog(this, "Encrypted");

}

}

}

}//GEN-LAST:event\_encryptDataActionPerformed

private void embedDataActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_embedDataActionPerformed

// TODO add your handling code here:

if (key == 4) {

key = 5;

bufferedImage = steganography.encode(encrypted, steganography.H1, steganography.H2);

keyLabel.setVisible(true);

keyTextField.setVisible(true);

if (bufferedImage == null) {

JOptionPane.showMessageDialog(this, "Error");

} else {

secondImageSection.setIcon(new ImageIcon(bufferedImage));

JOptionPane.showMessageDialog(this, "Data Embedded");

}

}

}//GEN-LAST:event\_embedDataActionPerformed

private void jMenuItem7ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jMenuItem7ActionPerformed

// TODO add your handling code here:

if (key == 5) {

key = 6;

String keyData = keyTextField.getText().toString();

if (keyData.equals("") || keyData == null) {

JOptionPane.showMessageDialog(this, "Please fill data first");

} else {

String decryptedData = steganography.decode(keyData);

if (decryptedData.equals("") || decryptedData == null) {

JOptionPane.showMessageDialog(this, "Error in encrypting");

} else {

JOptionPane.showMessageDialog(this, decryptedData);

}

}

}

}//GEN-LAST:event\_jMenuItem7ActionPerformed

/\*\*

\* @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>

\*/

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(MainScreen.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(MainScreen.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(MainScreen.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(MainScreen.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

}

//</editor-fold>

/\* Create and display the form \*/

java.awt.EventQueue.invokeLater(new Runnable() {

public void run() {

new MainScreen().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JMenuItem binaryConversion;

private javax.swing.JMenuItem embedData;

private javax.swing.JMenuItem encryptData;

private javax.swing.JMenuItem exit;

private javax.swing.JLabel firstSectionImage;

private javax.swing.JMenu grayScale;

private javax.swing.JLabel jLabel1;

private javax.swing.JMenu jMenu1;

private javax.swing.JMenuBar jMenuBar1;

private javax.swing.JMenuItem jMenuItem3;

private javax.swing.JMenuItem jMenuItem7;

private javax.swing.JLabel keyLabel;

private javax.swing.JTextField keyTextField;

private javax.swing.JMenuItem openImage;

private javax.swing.JLabel secondImageSection;

private javax.swing.JLabel secretMessageLabel;

private javax.swing.JTextField secretMessageTextField;

// End of variables declaration//GEN-END:variables

}