* Program Code of Login Form;

Import libraries:

import java.awt.Toolkit;

import java.awt.event.WindowEvent;

import javax.swing.JFrame;

import javax.swing.JOptionPane;

public class Login extends javax.swing.JFrame {

Creating Login Form.

public Login() {

initComponents();

setTitle("QRGen");

setExtendedState(JFrame.MAXIMIZED\_HORIZ);

setVisible(true);

setResizable(false);

}

private void initComponents()

{

jLabel2 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

usernamefield = new javax.swing.JTextField();

passwordtextfield = new javax.swing.JPasswordField();

jButton1 = new javax.swing.JButton();

jLabel1 = new javax.swing.JLabel();

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

Visual presentation of our program

getContentPane().setLayout(neworg.netbeans.lib.awtextra.AbsoluteLayout());

jLabel2.setFont(new java.awt.Font("Times New Roman", 3, 14)); jLabel2.setForeground(new java.awt.Color(255, 255, 255));

jLabel2.setText("User Name");

jLabel2.setToolTipText("");

getContentPane().add(jLabel2,neworg.netbeans.lib.awtextra.AbsoluteConstraints(10, 80, 150, 54));

jLabel3.setFont(new java.awt.Font("Times New Roman", 3, 14));

jLabel3.setForeground(new java.awt.Color(255, 255, 255));

jLabel3.setText("Password");

getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(10, 140, 102, 39));

usernamefield.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing.border.BevelBorder.RAISED));

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

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

usernamefieldActionPerformed(evt);

}

});

getContentPane().add(usernamefield, new org.netbeans.lib.awtextra.AbsoluteConstraints(130, 90, 140, 30));

passwordtextfield.setText("jPasswordField1");

passwordtextfield.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing.border.BevelBorder.RAISED));

getContentPane().add(passwordtextfield, new org.netbeans.lib.awtextra.AbsoluteConstraints(130, 140, 140, 30));

jButton1.setBackground(new java.awt.Color(79, 122, 252));

jButton1.setFont(new java.awt.Font("Times New Roman", 3, 14)); // NOI18N

jButton1.setText("Authorization");

jButton1.setBorder(null);

jButton1.addActionListener(new java.awt.event.ActionListener() {

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

jButton1ActionPerformed(evt);

}

});

getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(290, 120, 106, 34));

jLabel1.setIcon(new javax.swing.ImageIcon("C:\\Users\\Dell\\Desktop\\!!!!!\\InformationSecurity\\5.jpg")); // NOI18N

jLabel1.setBorder(new javax.swing.border.SoftBevelBorder(javax.swing.border.BevelBorder.RAISED));

getContentPane().add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 460, 310));

pack();

}// </editor-fold>

Functions:

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {

String password = passwordtextfield.getText();

String username = usernamefield.getText();

if(password.contains("1q2w3e4r5t") && username.contains("BalajaTS3")){

usernamefield.setText("");

passwordtextfield.setText("");

close();

QRGen m = new QRGen();

m.setVisible(true);

}else{

JOptionPane.showMessageDialog(null, "Запит відхилено.Авторизацію у програмний продукт не пройдено.Повторіть спробу авторизації.");//системний виклий при невдалій спробі авторизації

usernamefield.setText("");

passwordtextfield.setText("");

}

}

private void usernamefieldActionPerformed(java.awt.event.ActionEvent evt) {

}

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

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

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

}

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

public void run() {

new Login().setVisible(true);

}

});

private javax.swing.JButton jButton1;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JPasswordField passwordtextfield;

private javax.swing.JTextField usernamefield;

private void close()

{

WindowEvent winClosing = new WindowEvent(this,WindowEvent.WINDOW\_CLOSING);

Toolkit.getDefaultToolkit().getSystemEventQueue().postEvent(winClosing);

}

}

* Program code of QR-Code generation form

Libraries:

import java.awt.Graphics;

import java.awt.image.BufferedImage;

import java.io.ByteArrayOutputStream;

import java.io.File;

import java.io.FileOutputStream;

import static java.lang.StrictMath.random;

import javax.imageio.ImageIO;

import javax.swing.ImageIcon;

import javax.swing.JFileChooser;

import javax.swing.JFrame;

import javax.swing.JLabel;

import javax.swing.JOptionPane;

import net.glxn.qrgen.QRCode;

import net.glxn.qrgen.image.ImageType;

import java.util.Random;

public class QRGen extends javax.swing.JFrame {

Creating Form to Generate QR codes

private JFileChooser fc;

public QRGen() {

initComponents();

setTitle("QRGen");

setExtendedState(JFrame.MAXIMIZED\_HORIZ);

setVisible(true);

setResizable(false);

}

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jTextField1 = new javax.swing.JTextField();

jPanel1 = new javax.swing.JPanel();

jButton1 = new javax.swing.JButton();

jButton2 = new javax.swing.JButton();

jLabel2 = new javax.swing.JLabel();

jLabel1.setBorder(new javax.swing.border.SoftBevelBorder(javax.swing.border.BevelBorder.LOWERED, null, java.awt.Color.gray, null, null));

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

getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

jTextField1.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing.border.BevelBorder.RAISED));

jTextField1.addActionListener(new java.awt.event.ActionListener() {

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

jTextField1ActionPerformed(evt);

}

});

jTextField1.addKeyListener(new java.awt.event.KeyAdapter() {

public void keyReleased(java.awt.event.KeyEvent evt) {

jTextField1KeyReleased(evt);

}

});

getContentPane().add(jTextField1, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 80, 140, 40));

jPanel1.setBackground(new java.awt.Color(255, 255, 255));

jPanel1.setBorder(javax.swing.BorderFactory.createBevelBorder(javax.swing.border.BevelBorder.RAISED));

jPanel1.setCursor(new java.awt.Cursor(java.awt.Cursor.SE\_RESIZE\_CURSOR));

jPanel1.setPreferredSize(new java.awt.Dimension(250, 250));

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

jPanel1.setLayout(jPanel1Layout);

jPanel1Layout.setHorizontalGroup(

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

.addGap(0, 246, Short.MAX\_VALUE)

);

jPanel1Layout.setVerticalGroup(

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

.addGap(0, 226, Short.MAX\_VALUE)

);

getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(10, 20, 250, 230));

jButton1.setBackground(new java.awt.Color(79, 122, 252));

jButton1.setFont(new java.awt.Font("Times New Roman", 3, 14)); // NOI18N

jButton1.setForeground(new java.awt.Color(255, 255, 255));

jButton1.setText("Save");

jButton1.setToolTipText("");

jButton1.setBorder(null);

jButton1.setBorderPainted(false);

jButton1.addActionListener(new java.awt.event.ActionListener() {

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

jButton1ActionPerformed(evt);

}

});

getContentPane().add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 130, 140, 40));

jButton2.setBackground(new java.awt.Color(79, 122, 252));

jButton2.setFont(new java.awt.Font("Times New Roman", 3, 14)); // NOI18N

jButton2.setForeground(new java.awt.Color(255, 255, 255));

jButton2.setText("Encrypt");

jButton2.addActionListener(new java.awt.event.ActionListener() {

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

jButton2ActionPerformed(evt);

}

});

getContentPane().add(jButton2,neworg.netbeans.lib.awtextra.AbsoluteConstraints(270, 180, 140, 50));

jLabel2.setIcon(new javax.swing.ImageIcon("C:\\Users\\Dell\\Desktop\\!!!!!\\InformationSecurity\\5.jpg"));

jLabel2.setText("jLabel2");

getContentPane().add(jLabel2,neworg.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 540, 300));

pack();

}

Functions in program

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {

JFileChooser fc = new JFileChooser();

int rv = fc.showSaveDialog(null);

if(rv==JFileChooser.APPROVE\_OPTION)

{

try

{

String ruta = fc.getSelectedFile().getAbsolutePath()+".jpg";

fout = new FileOutputStream(new File(ruta));

fout.write(out.toByteArray());

fout.flush();

fout.close();

}

catch(Exception ex )

{

JOptionPane.showMessageDialog(null, ex.getMessage());

}

}

}

FileOutputStream fout;

ByteArrayOutputStream out;

private void jTextField1KeyReleased(java.awt.event.KeyEvent evt) {

if(jTextField1.getText().length()==0)

return ;

String t = jTextField1.getText();//використовуємо текст для генерації QR-кодів

out=QRCode.from(t).withSize(250,250).to(ImageType.JPG).stream();//на виході отримуємо QR-код з такими параметрами

try

{

fout = new FileOutputStream(new File("temp.jpg"));

fout.write(out.toByteArray());

fout.flush();

fout.close();

BufferedImage miQr = ImageIO.read(new File("temp.jpg"));

JLabel label = new JLabel(new ImageIcon(miQr));

Graphics g = jPanel1.getGraphics();

g.drawImage(miQr, WIDTH, WIDTH, label);

}

catch (Exception ex)

{

JOptionPane.showMessageDialog(null, ex.getMessage());

}

}

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {

}

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {

String change\_text = jTextField1.getText();

if(change\_text.length()<=1000 ){

int min =10000000;

int max =1000000000;

Random r = new Random();

int random = r.nextInt(max-min)+min;

String strI = Integer.toString(random);

out = QRCode.from(strI).withSize(250,250).to(ImageType.JPG).stream();

try

{

fout = new FileOutputStream(new File("temp.jpg"));

fout.write(out.toByteArray());

fout.flush();

fout.close();

BufferedImage miQr = ImageIO.read(new File("temp.jpg"));

JLabel label = new JLabel(new ImageIcon(miQr));

Graphics g = jPanel1.getGraphics();

g.drawImage(miQr, WIDTH, WIDTH, label);

}

catch (Exception ex)

{

JOptionPane.showMessageDialog(null, ex.getMessage());

}

}

}

public static void main(String args[])

{

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

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

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

}

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

public void run() {

new QRGen().setVisible(true);

}

});

**Check authorization data. Is it right?**

**Beginning**

**System message for**

**authorization issue**

**Yes**

**No**

**Input data to QR-Code**

**Variables initialization**

**Users Authorization**

**The end**

**Output QR-code**

**No**

**Yes**

**Does number of variables less than 4296?**

**Output new QR-code**

**Pseudorandom number generator encryption**

**RSA encryption**