XSEURE PROJECT

SECTION 373

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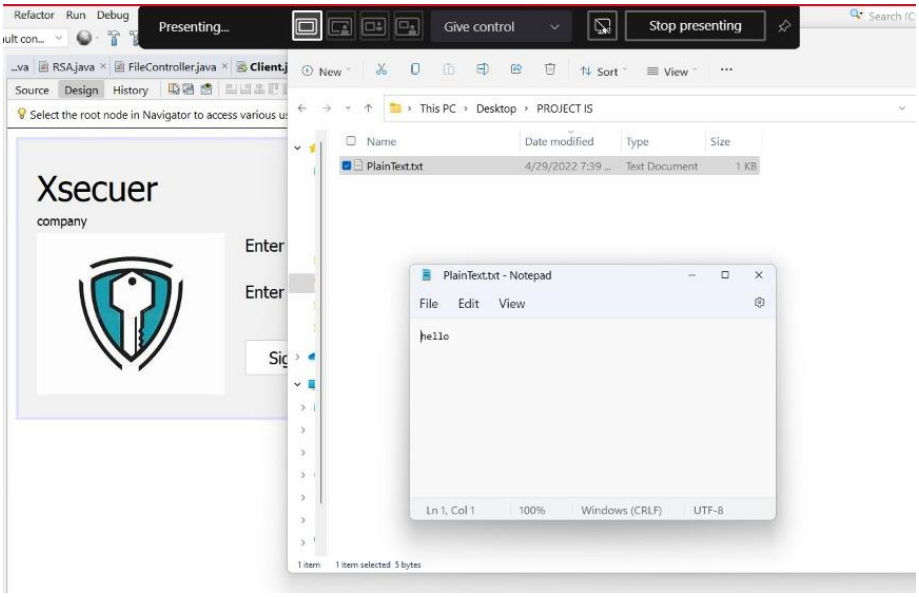
Table of Contents

○ Overview of the project design

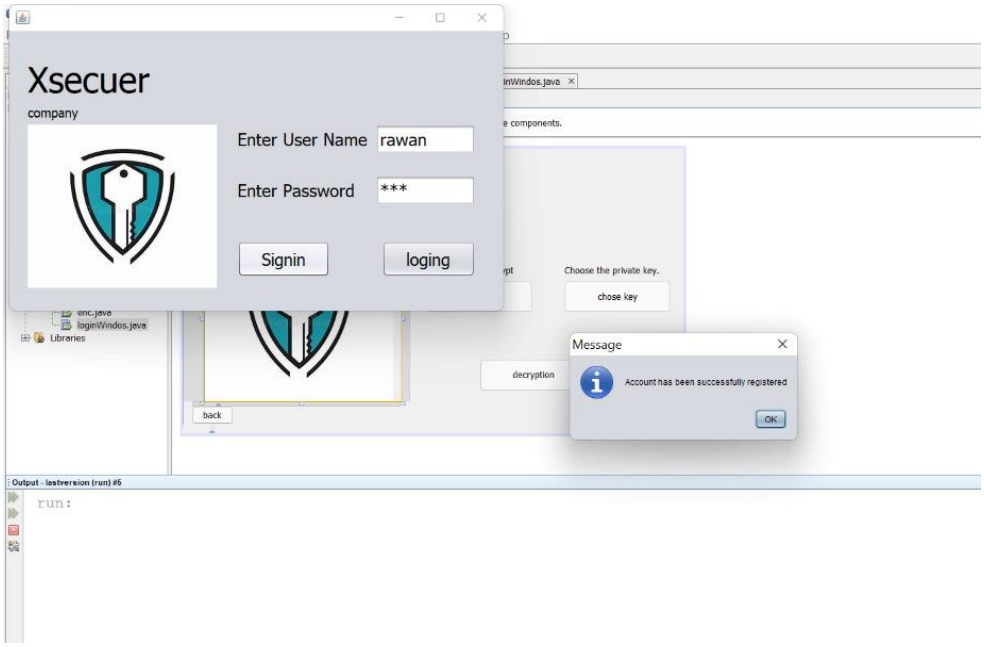
Our project was designed to help users communicate and send files to each other securely. In our project we used java language to implement and design the interface. Our application provides secure registration and login serves and we make sure that each user has their special username and password. We are following the public and privet key approach by using both AES and RSA algorithms to encrypt and decrypt the files. Our system also has the ability to work via network.

○ Approach and steps to implementation

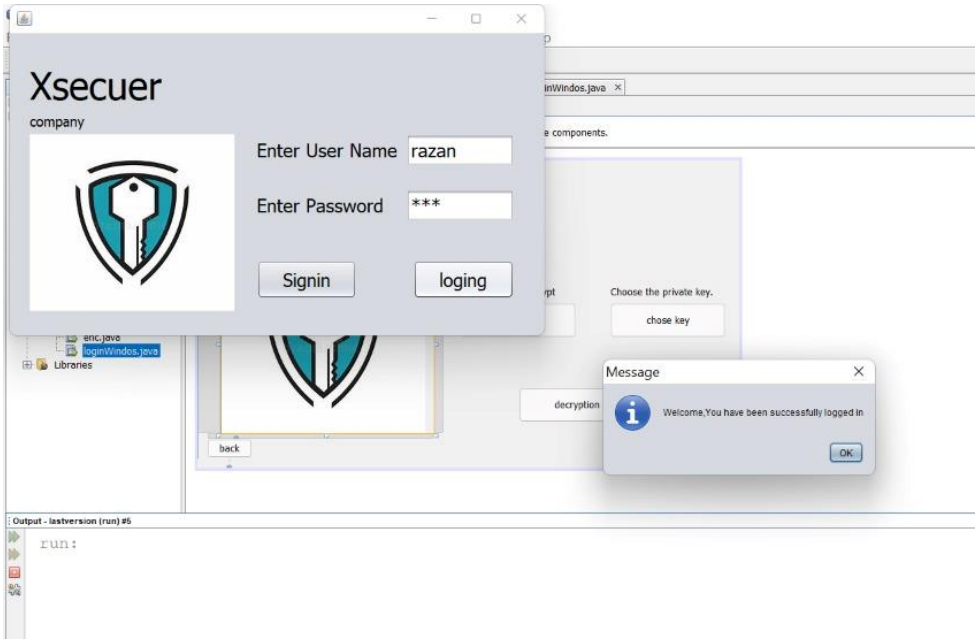
Step 1: write the text we want to send.



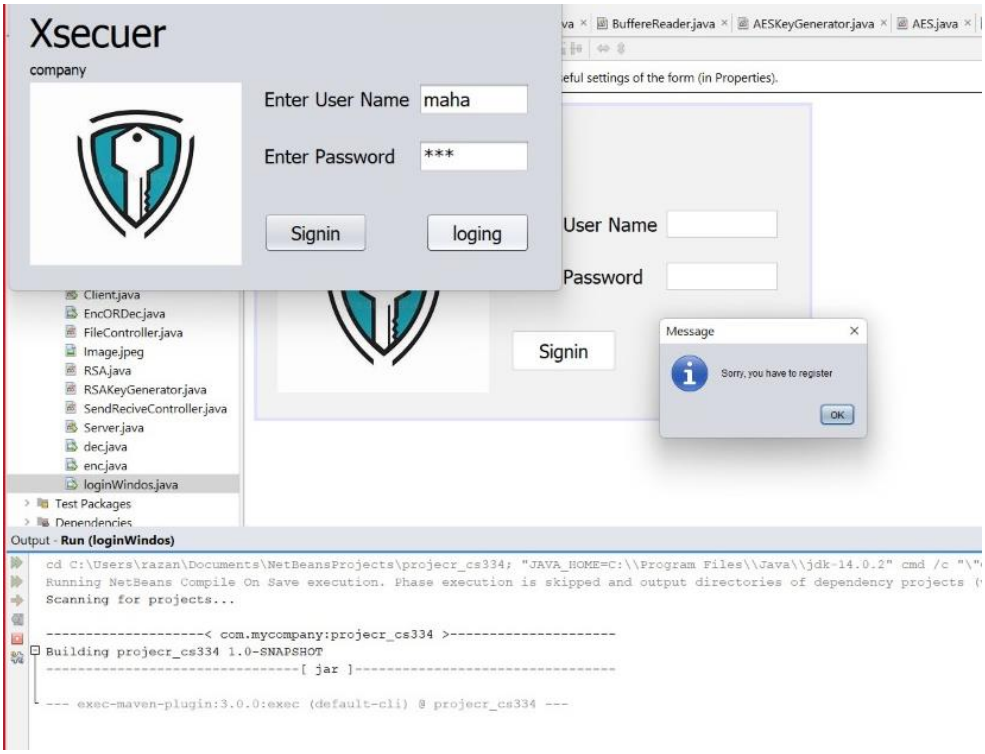
Step 2: user must register to the application.



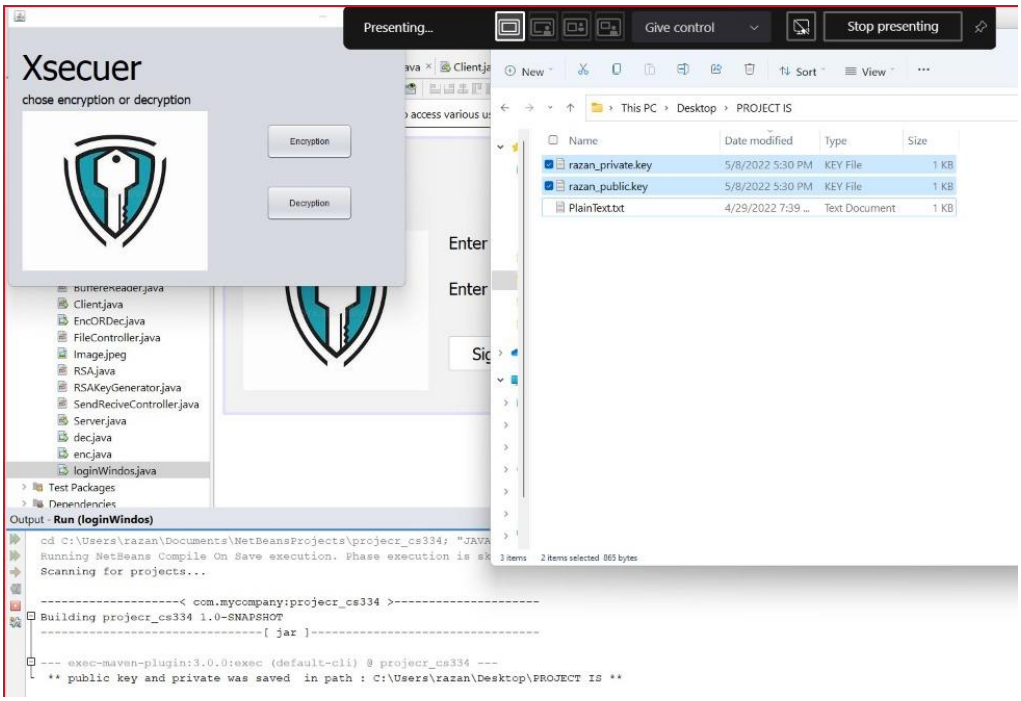
Step 3: after registration user can login to the application.



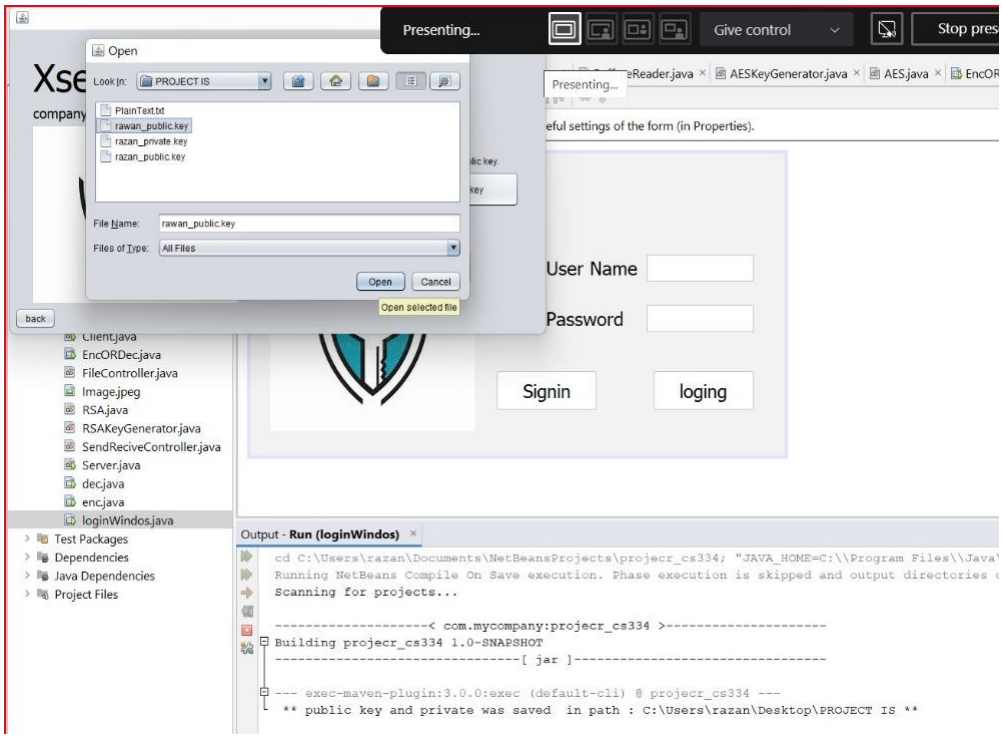
Step 4: if the user tries to login without registration, he will get an error message.



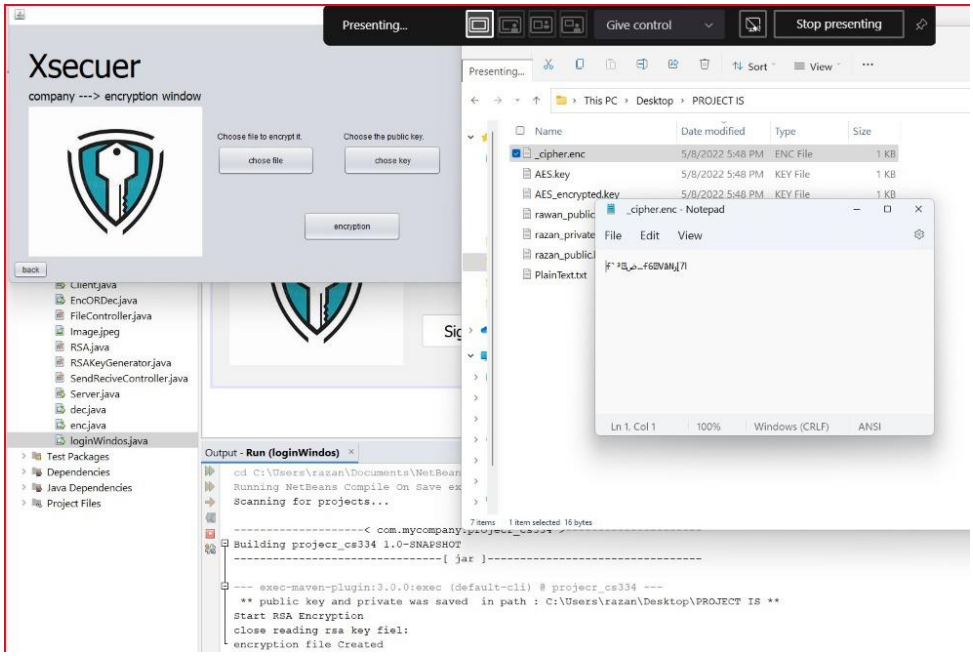
Step 5: the system have both public and private key techniques.



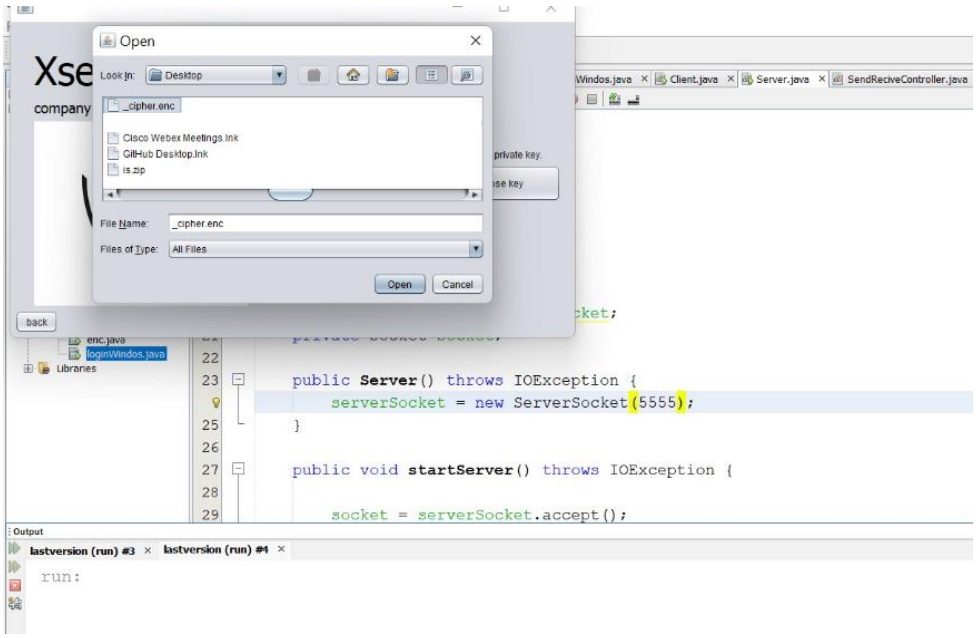
Step 6: the sender chose the public key to encrypt the file.



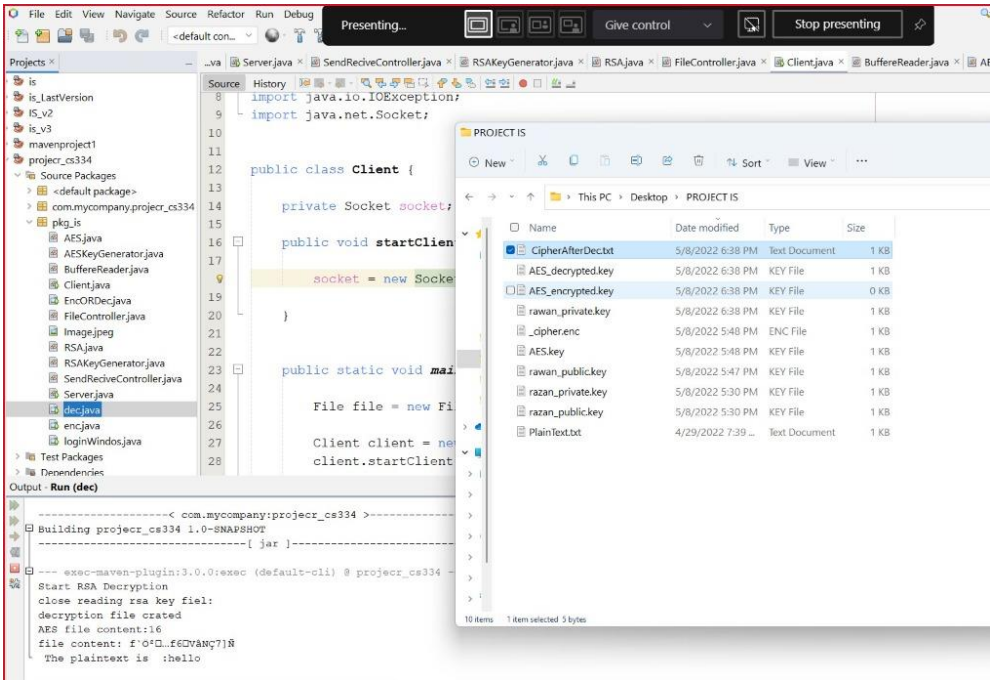
Step 7: the encrypted file.

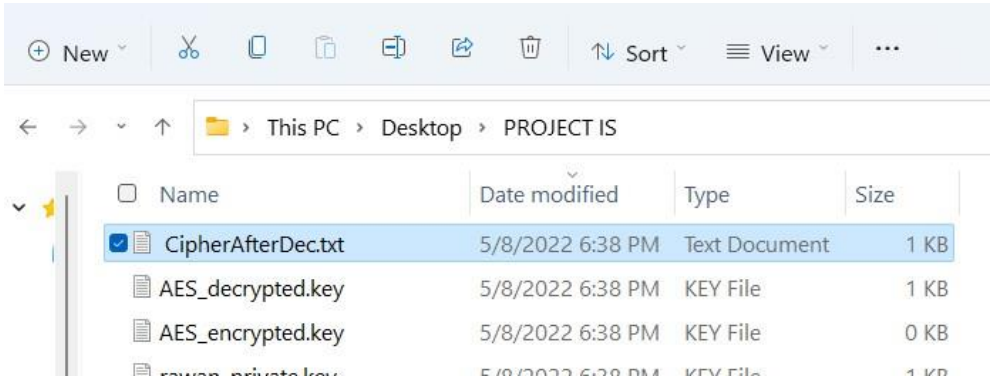


Step 8: decrypting the file.



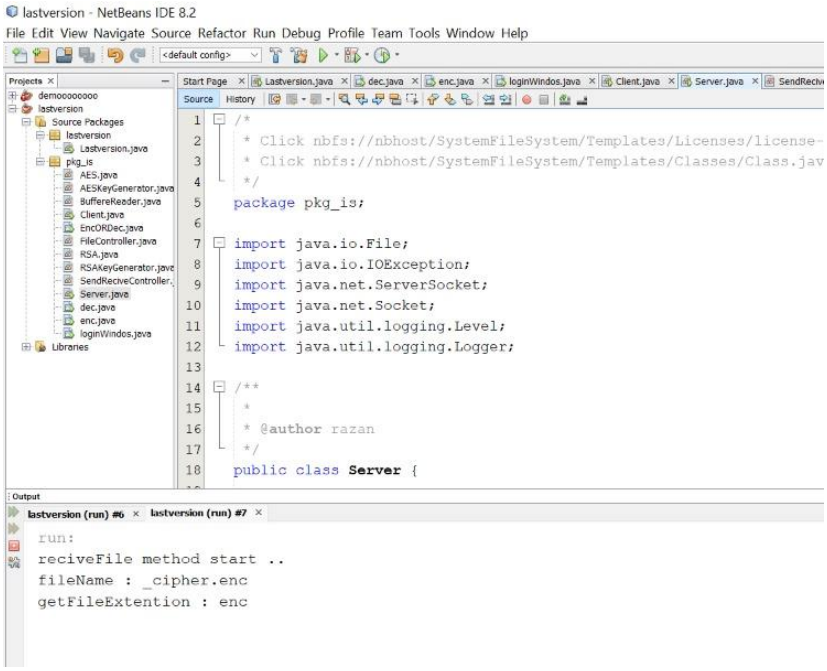
Step 9: after decrypting the file the system saved it for us.

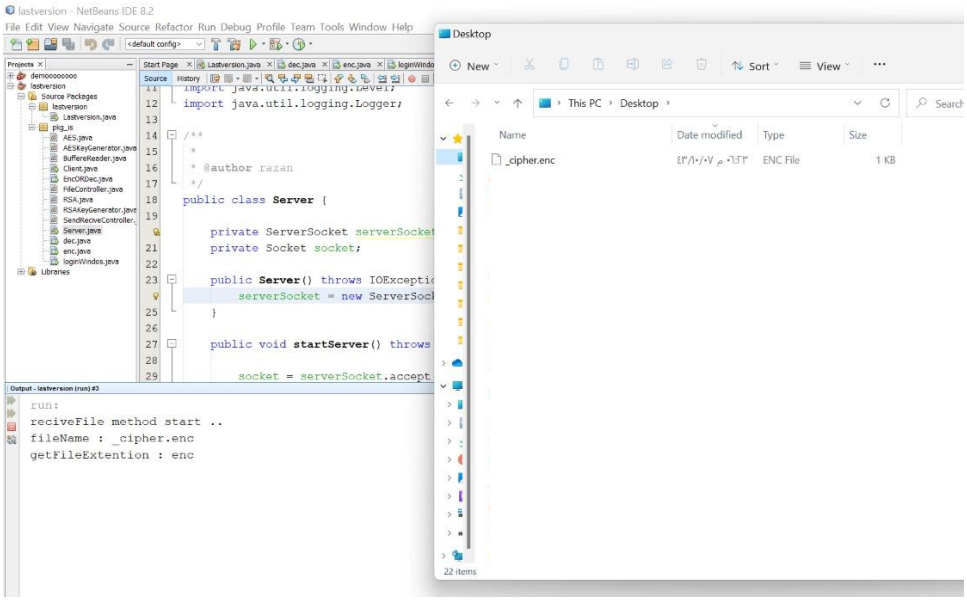




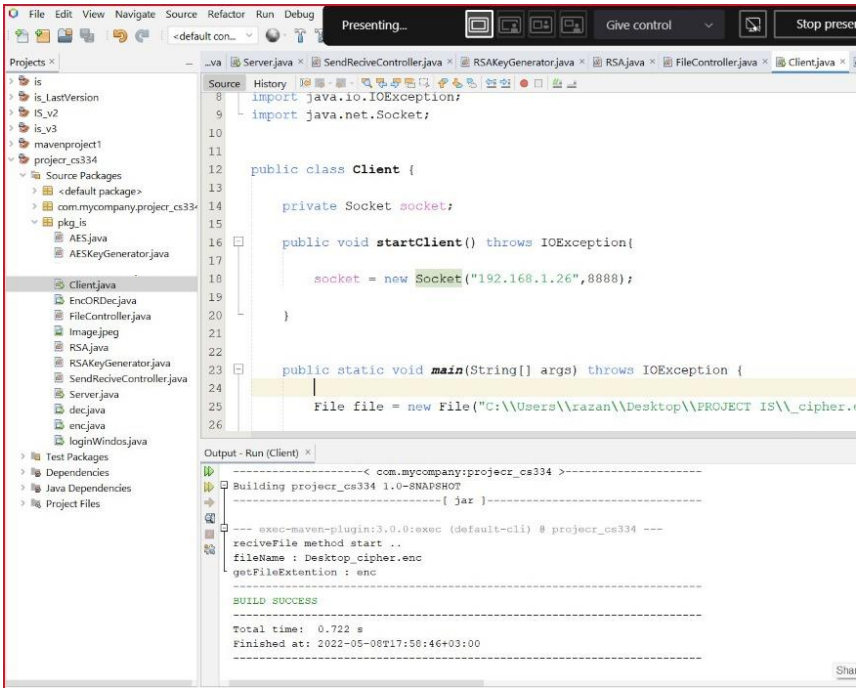
server and clint connection:

1. server

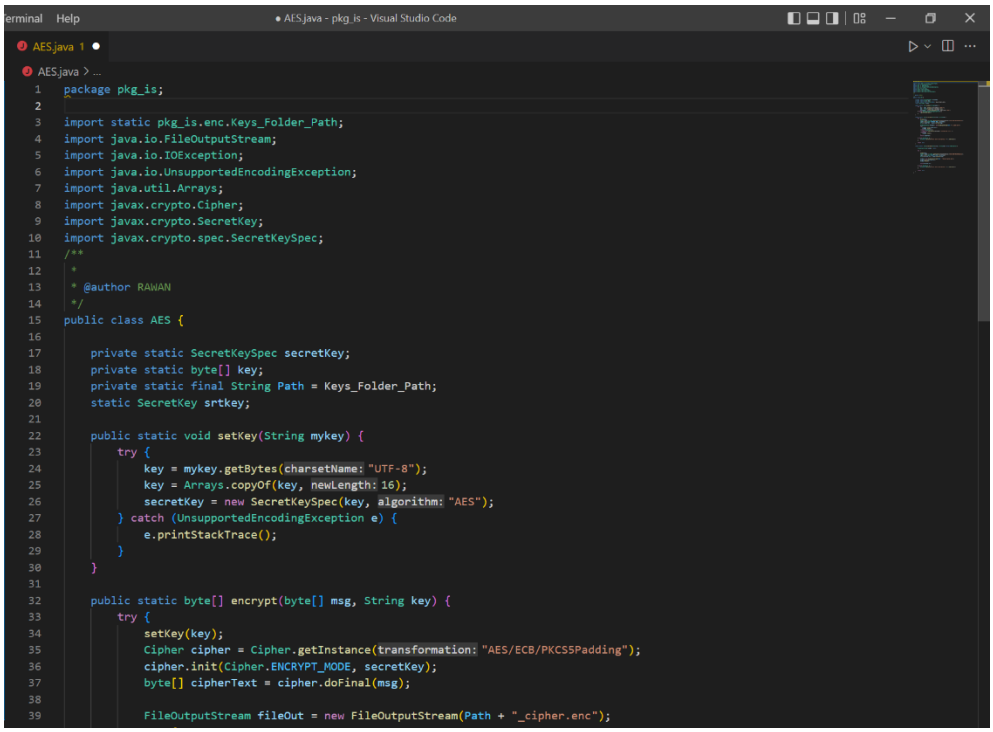




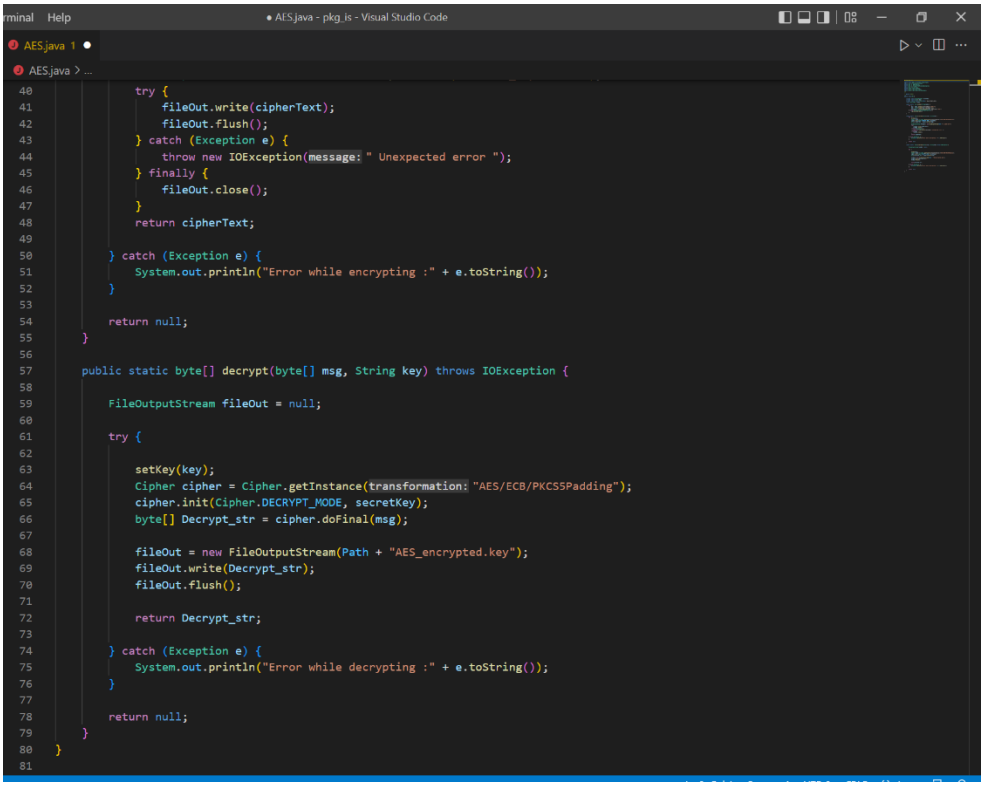
2. client


File Edit View Navigate Source Refactor Run Debug
Presenting...
Give control
Stop prese
Projects
is
is_LastVersion
IS_v2
is_v3
mavenproject1
projecr_cs334
Source Packages
<default package>
com.mycompany.projecr_cs33
pkg_is
AES.java
AESKeyGenerator.java
Client.java
EncORDec.java
FileController.java
Image.jpeg
RSA.java
RSAKeyGenerator.java
SendReciveController.java
Server.java
dec.java
enc.java
loginWindos.java
Test Packages
Dependencies
Java Dependencies
Project Files
Server.java
SendReciveController.java
RSAKeyGenerator.java
RSA.java
FileController.java
Client.java
Source
History
import java.io.IOException;
import java.net.Socket;
public class Client {
private Socket socket;
public void startClient() throws IOException{
socket = new Socket("192.168.1.26",8888);
}
public static void main(String[] args) throws IOException {
File file = new File("C:\\Users\\razan\\Desktop\\PROJECT IS_cipher.
Output - Run (Client)
----------< com.mycompany:projecr_cs334 >----------
Building projecr_cs334 1.0-SNAPSHOT
--------------------------------[jar]---------------------------------
--- exec-maven-plugin:3.0.0:exec (default-cli) @ projecr_cs334 ---
reciveFile method start ..
fileName : Desktop_cipher.enc
getFileExtention : enc
BUILD SUCCESS
Total time: 0.722 s
Finished at: 2022-05-06T17:58:46+03:00

- Code
  1. AES

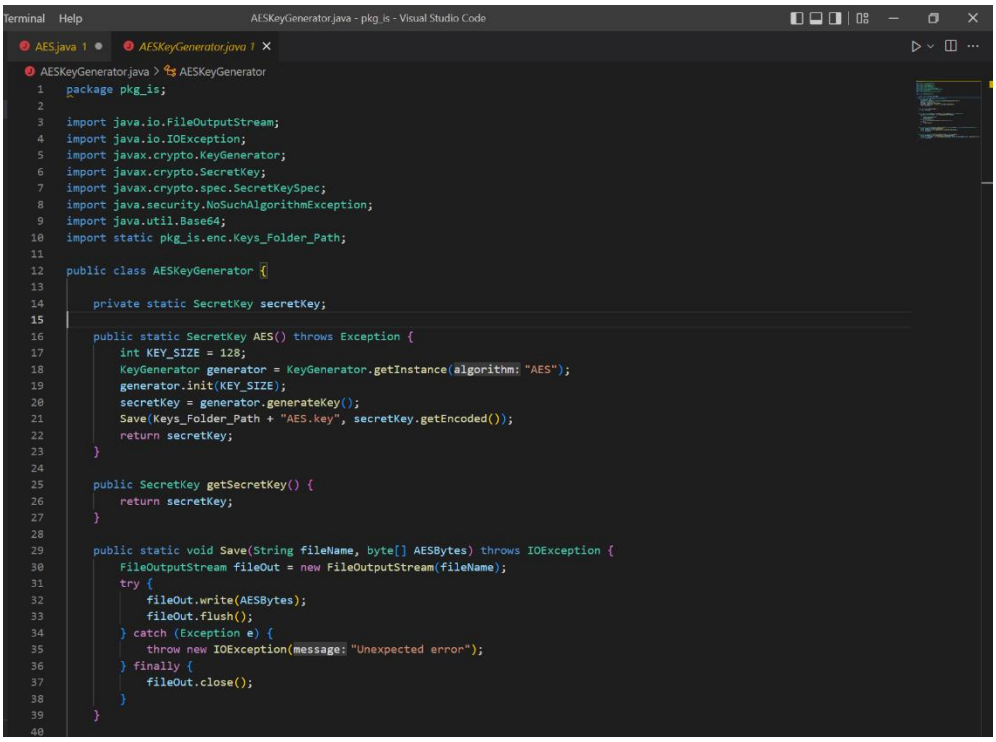


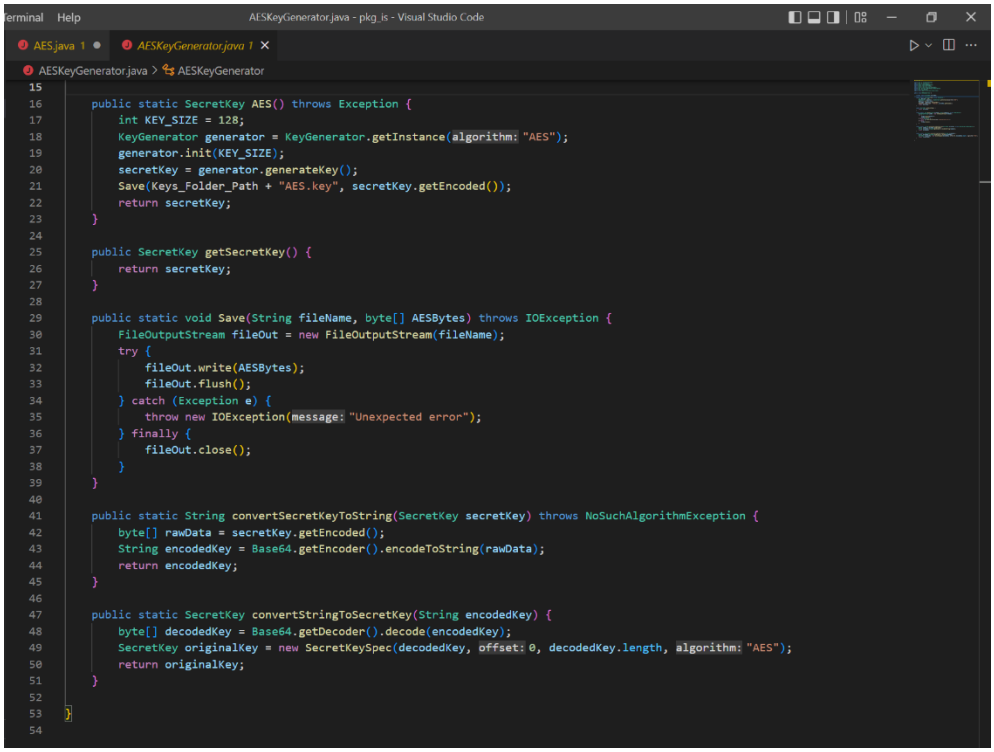

```java
package pkg_is;

import static pkg_is.enc.Keys_Folder_Path;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.UnsupportedEncodingException;
import java.util.Arrays;
import javax.crypto.Cipher;
import javax.crypto.SecretKey;
import javax.crypto.spec.SecretKeySpec;
/**
 *
 * @author RAWAN
 */
public class AES {

    private static SecretKeySpec secretKey;
    private static byte[] key;
    private static final String Path = Keys_Folder_Path;
    static SecretKey srtkey;

    public static void setKey(String mykey) {
        try {
            key = mykey.getBytes(charsetName: "UTF-8");
            key = Arrays.copyOf(key, newLength: 16);
            secretKey = new SecretKeySpec(key, algorithm: "AES");
        } catch (UnsupportedEncodingException e) {
            e.printStackTrace();
        }
    }

    public static byte[] encrypt(byte[] msg, String key) {
        try {
            setKey(key);
            Cipher cipher = Cipher.getInstance(transformation: "AES/ECB/PKCS5Padding");
            cipher.init(Cipher.ENCRYPT_MODE, secretKey);
            byte[] cipherText = cipher.doFinal(msg);

            FileOutputStream fileOut = new FileOutputStream(Path + "_cipher.enc");
```



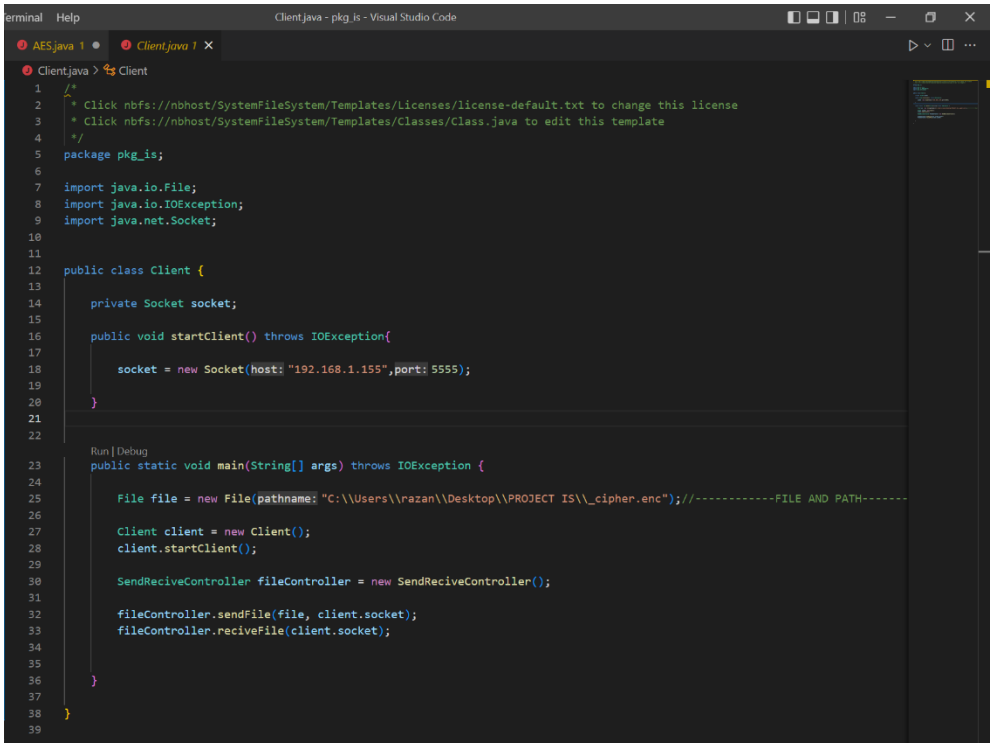

```java
            try {
                fileOut.write(cipherText);
                fileOut.flush();
            } catch (Exception e) {
                throw new IOException(message: " Unexpected error ");
            } finally {
                fileOut.close();
            }
            return cipherText;

        } catch (Exception e) {
            System.out.println("Error while encrypting :" + e.toString());
        }

        return null;
    }

    public static byte[] decrypt(byte[] msg, String key) throws IOException {

        FileOutputStream fileOut = null;

        try {

            setKey(key);
            Cipher cipher = Cipher.getInstance(transformation: "AES/ECB/PKCS5Padding");
            cipher.init(Cipher.DECRYPT_MODE, secretKey);
            byte[] Decrypt_str = cipher.doFinal(msg);

            fileOut = new FileOutputStream(Path + "AES_encrypted.key");
            fileOut.write(Decrypt_str);
            fileOut.flush();

            return Decrypt_str;

        } catch (Exception e) {
            System.out.println("Error while decrypting :" + e.toString());
        }

        return null;
    }
}
```

2. AESKeyGenerator

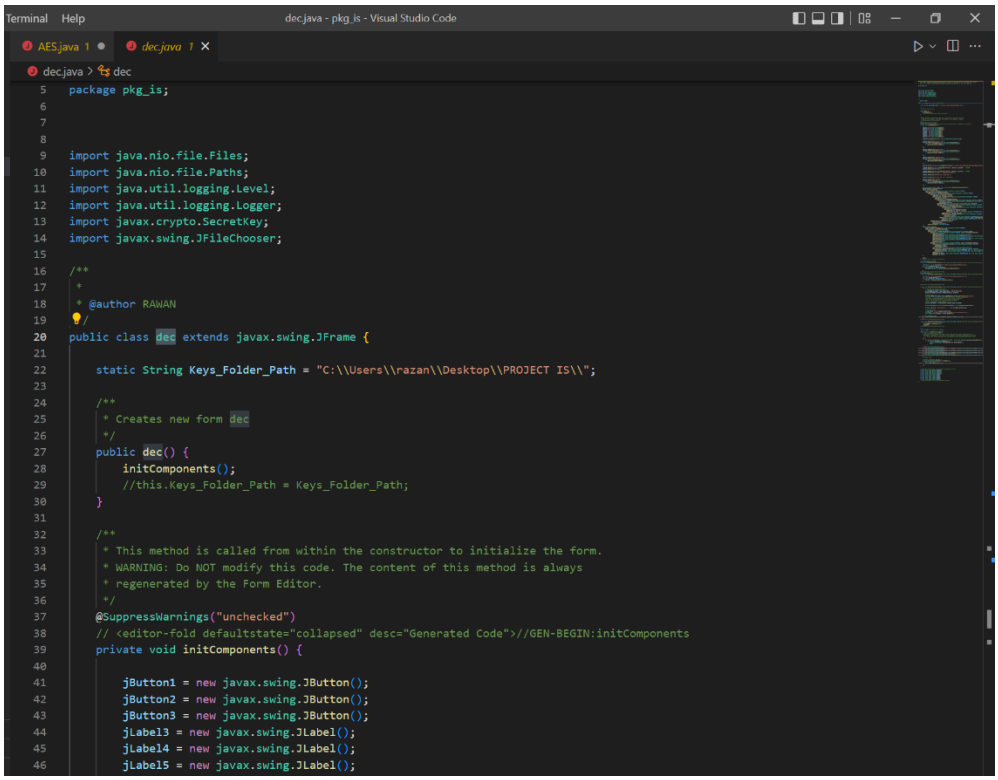


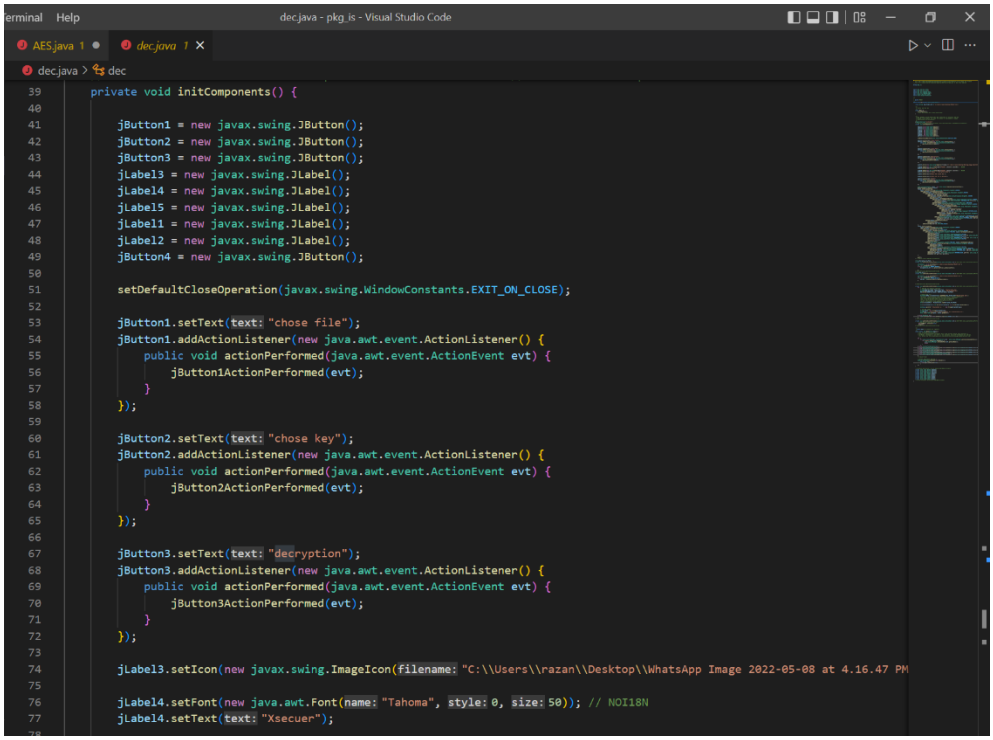


3. Client

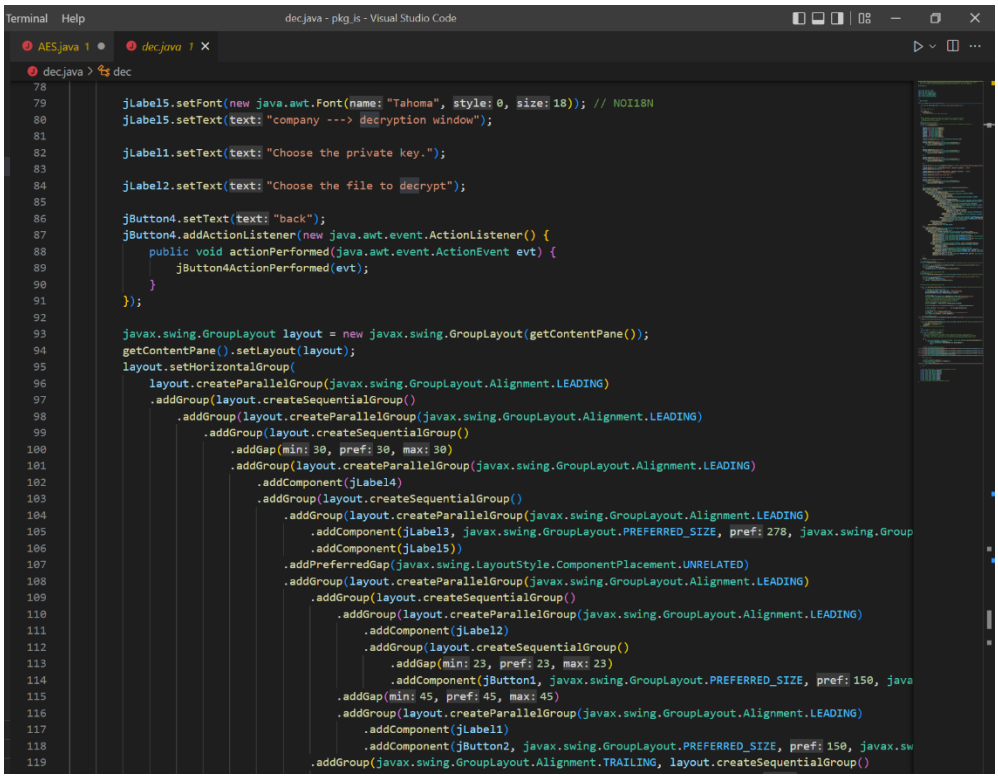


4. Dec

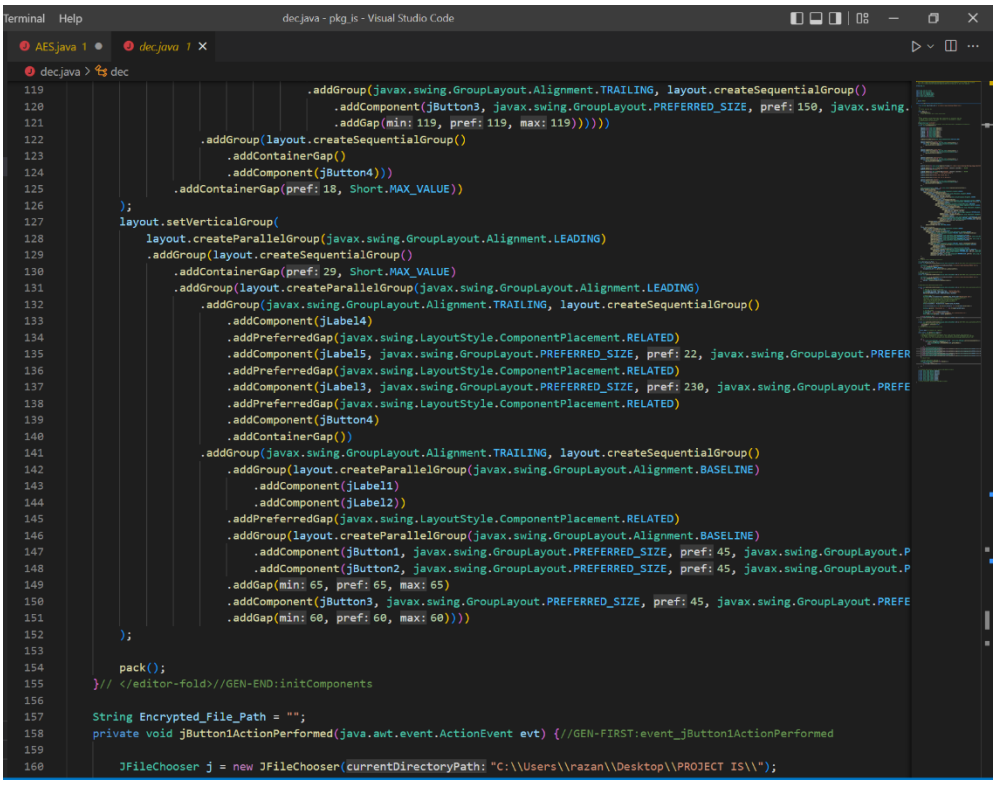




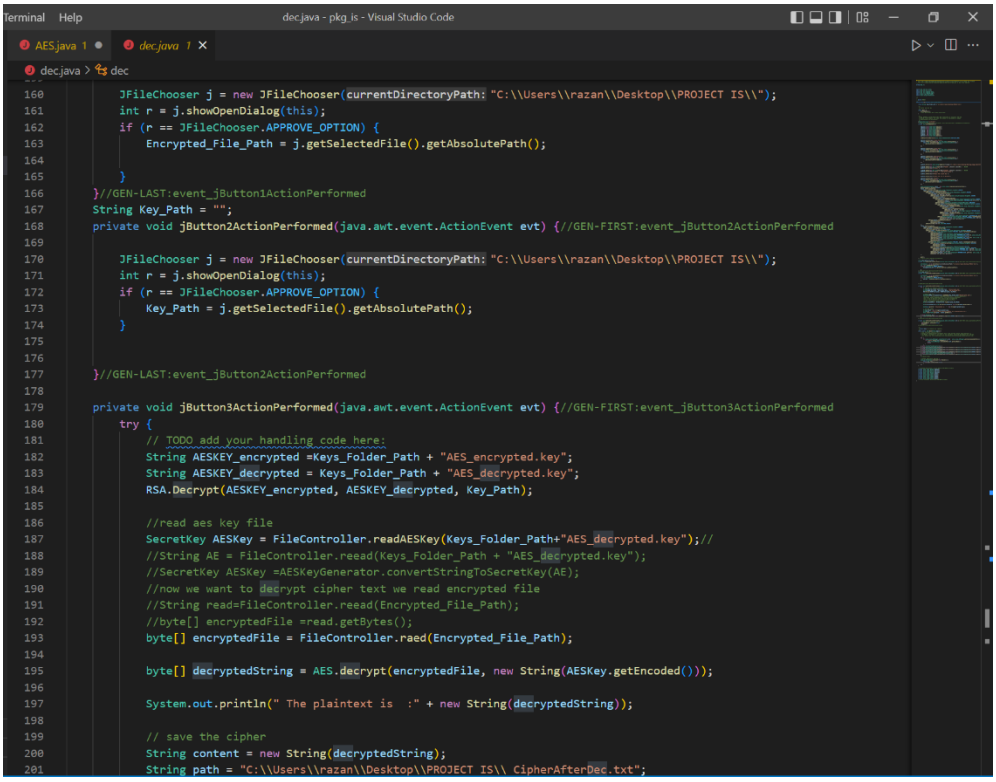

```
39      private void initComponents() {
40
41          jButton1 = new javax.swing.JButton();
42          jButton2 = new javax.swing.JButton();
43          jButton3 = new javax.swing.JButton();
44          jLabel3 = new javax.swing.JLabel();
45          jLabel4 = new javax.swing.JLabel();
46          jLabel5 = new javax.swing.JLabel();
47          jLabel1 = new javax.swing.JLabel();
48          jLabel2 = new javax.swing.JLabel();
49          jButton4 = new javax.swing.JButton();
50
51          setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
52
53          jButton1.setText(text: "chose file");
54          jButton1.addActionListener(new java.awt.event.ActionListener() {
55              public void actionPerformed(java.awt.event.ActionEvent evt) {
56                  jButton1ActionPerformed(evt);
57              }
58          });
59
60          jButton2.setText(text: "chose key");
61          jButton2.addActionListener(new java.awt.event.ActionListener() {
62              public void actionPerformed(java.awt.event.ActionEvent evt) {
63                  jButton2ActionPerformed(evt);
64              }
65          });
66
67          jButton3.setText(text: "decryption");
68          jButton3.addActionListener(new java.awt.event.ActionListener() {
69              public void actionPerformed(java.awt.event.ActionEvent evt) {
70                  jButton3ActionPerformed(evt);
71              }
72          });
73
74          jLabel3.setIcon(new javax.swing.ImageIcon(filename: "C:\\Users\\razan\\Desktop\\WhatsApp Image 2022-05-08 at 4.16.47 PM
75
76          jLabel4.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 50)); // NOI18N
77          jLabel4.setText(text: "Xsecuer");
```



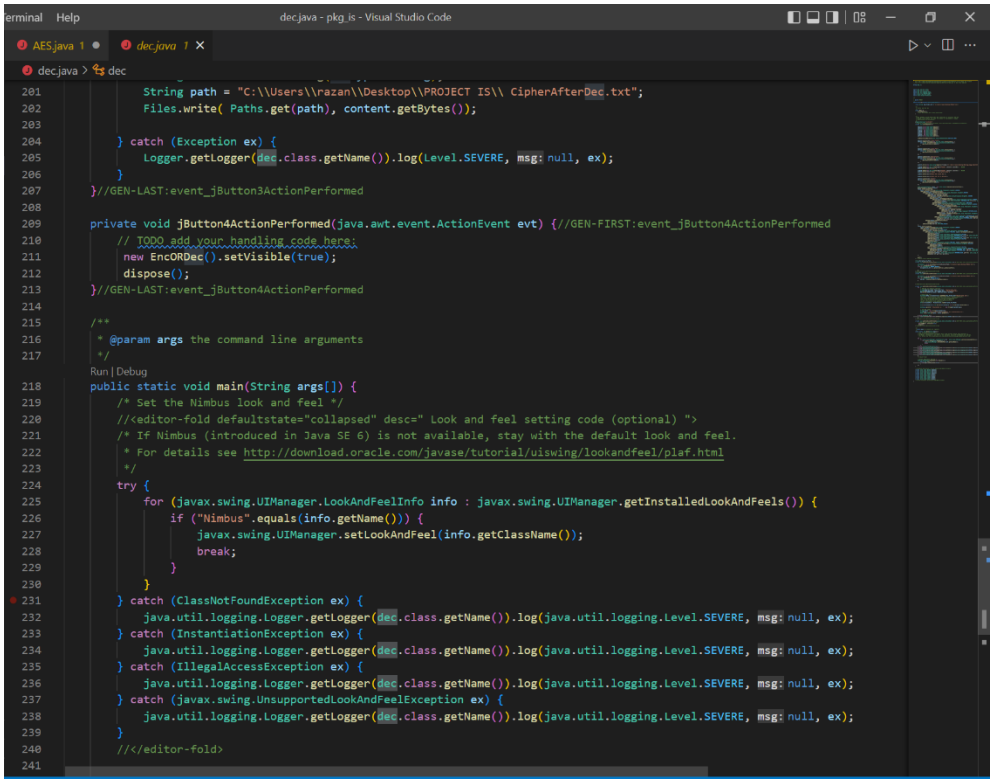

```
78
79          jLabel5.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 18)); // NOI18N
80          jLabel5.setText(text: "company ---> decryption window");
81
82          jLabel1.setText(text: "Choose the private key.");
83
84          jLabel2.setText(text: "Choose the file to decrypt");
85
86          jButton4.setText(text: "back");
87          jButton4.addActionListener(new java.awt.event.ActionListener() {
88              public void actionPerformed(java.awt.event.ActionEvent evt) {
89                  jButton4ActionPerformed(evt);
90              }
91          });
92
93          javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
94          getContentPane().setLayout(layout);
95          layout.setHorizontalGroup(
96              layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
97              .addGroup(layout.createSequentialGroup()
98                  .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
99                      .addGroup(layout.createSequentialGroup()
100                         .addGap(min: 30, pref: 30, max: 30)
101                         .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
102                             .addComponent(jLabel4)
103                             .addGroup(layout.createSequentialGroup()
104                                 .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
105                                     .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 278, javax.swing.Group
106                                     .addComponent(jLabel5))
107                                 .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
108                                 .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
109                                     .addGroup(layout.createSequentialGroup()
110                                         .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
111                                             .addComponent(jLabel2)
112                                             .addGroup(layout.createSequentialGroup()
113                                                 .addGap(min: 23, pref: 23, max: 23)
114                                                 .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 150, java
115                                         .addGap(min: 45, pref: 45, max: 45)
116                                         .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
117                                             .addComponent(jLabel1)
118                                             .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 150, javax.sw
119                                 .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
```



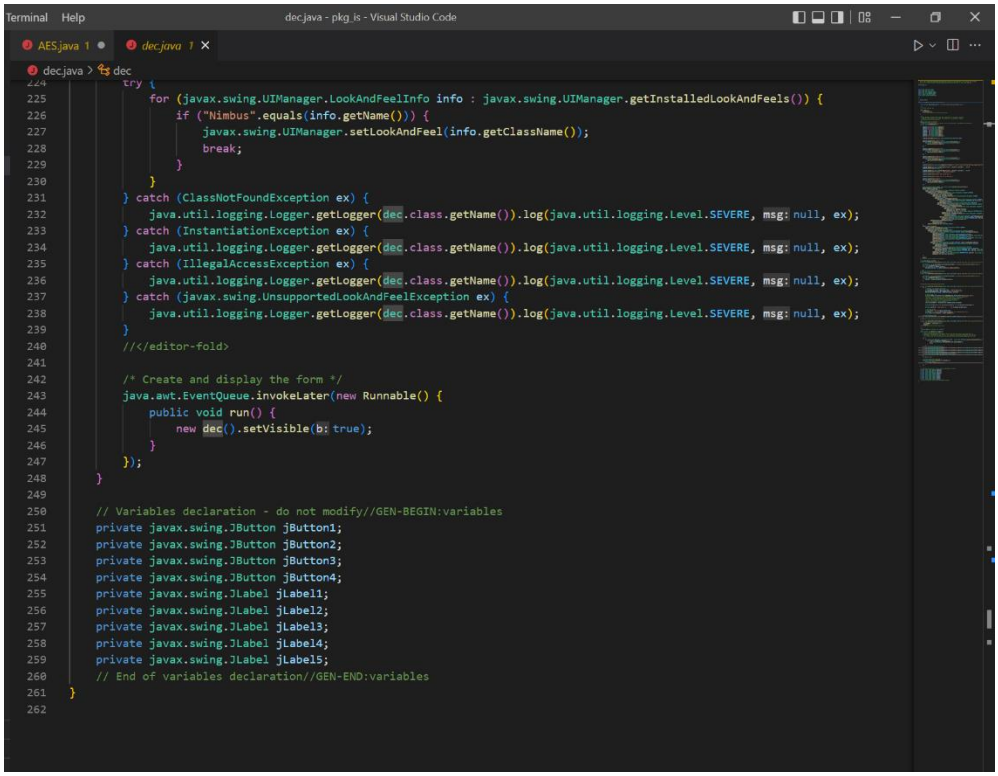

```
                                .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                                    .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 150, javax.swing.
                                    .addGap(min: 119, pref: 119, max: 119)))))
                    .addGroup(layout.createSequentialGroup()
                        .addContainerGap()
                        .addComponent(jButton4)))
                .addContainerGap(pref: 18, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap(pref: 29, Short.MAX_VALUE)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                        .addComponent(jLabel4)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 22, javax.swing.GroupLayout.PREFER
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 230, javax.swing.GroupLayout.PREFE
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jButton4)
                        .addContainerGap())
                    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                            .addComponent(jLabel1)
                            .addComponent(jLabel2))
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                            .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 45, javax.swing.GroupLayout.P
                            .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 45, javax.swing.GroupLayout.P
                        .addGap(min: 65, pref: 65, max: 65)
                        .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 45, javax.swing.GroupLayout.PREFE
                        .addGap(min: 60, pref: 60, max: 60))))
        );

        pack();
    }// </editor-fold>//GEN-END:initComponents

    String Encrypted_File_Path = "";
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton1ActionPerformed

        JFileChooser j = new JFileChooser(currentDirectoryPath: "C:\\Users\\razan\\Desktop\\PROJECT IS\\");
```




```
        JFileChooser j = new JFileChooser(currentDirectoryPath: "C:\\Users\\razan\\Desktop\\PROJECT IS\\");
        int r = j.showOpenDialog(this);
        if (r == JFileChooser.APPROVE_OPTION) {
            Encrypted_File_Path = j.getSelectedFile().getAbsolutePath();

        }
    }//GEN-LAST:event_jButton1ActionPerformed
    String Key_Path = "";
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton2ActionPerformed

        JFileChooser j = new JFileChooser(currentDirectoryPath: "C:\\Users\\razan\\Desktop\\PROJECT IS\\");
        int r = j.showOpenDialog(this);
        if (r == JFileChooser.APPROVE_OPTION) {
            Key_Path = j.getSelectedFile().getAbsolutePath();
        }


    }//GEN-LAST:event_jButton2ActionPerformed

    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton3ActionPerformed
        try {
            // TODO add your handling code here:
            String AESKEY_encrypted =Keys_Folder_Path + "AES_encrypted.key";
            String AESKEY_decrypted = Keys_Folder_Path + "AES_decrypted.key";
            RSA.Decrypt(AESKEY_encrypted, AESKEY_decrypted, Key_Path);

            //read aes key file
            SecretKey AESKey = FileController.readAESKey(Keys_Folder_Path+"AES_decrypted.key");//
            //String AE = FileController.reead(Keys_Folder_Path + "AES_decrypted.key");
            //SecretKey AESKey =AESKeyGenerator.convertStringToSecretKey(AE);
            //now we want to decrypt cipher text we read encrypted file
            //String read=FileController.reead(Encrypted_File_Path);
            //byte[] encryptedFile =read.getBytes();
            byte[] encryptedFile = FileController.raed(Encrypted_File_Path);

            byte[] decryptedString = AES.decrypt(encryptedFile, new String(AESKey.getEncoded()));

            System.out.println(" The plaintext is  :" + new String(decryptedString));

            // save the cipher
            String content = new String(decryptedString);
            String path = "C:\\Users\\razan\\Desktop\\PROJECT IS\\ CipherAfterDec.txt";
```

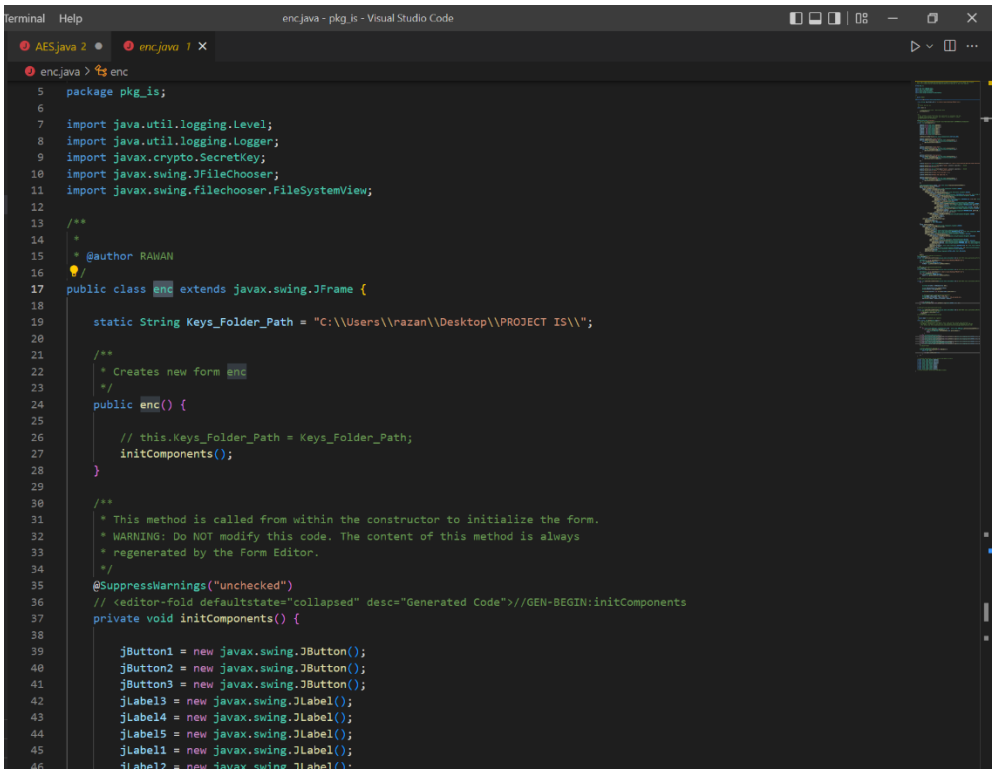


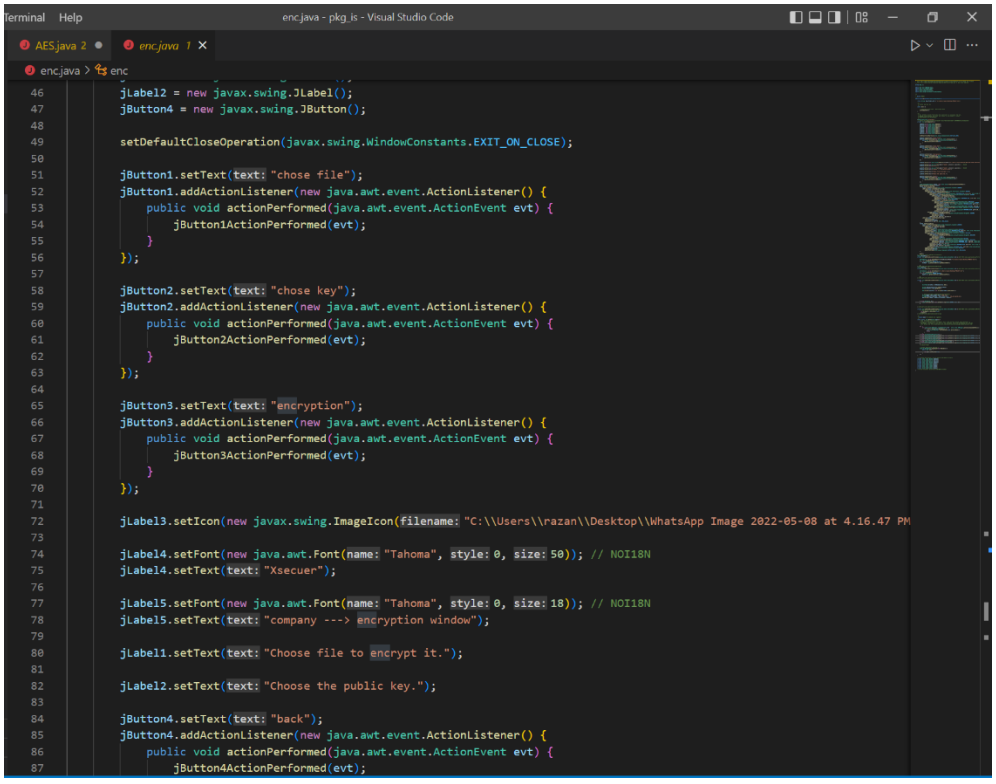
```
            String path = "C:\\Users\\razan\\Desktop\\PROJECT IS\\ CipherAfterDec.txt";
            Files.write( Paths.get(path), content.getBytes());

        } catch (Exception ex) {
            Logger.getLogger(dec.class.getName()).log(Level.SEVERE, msg: null, ex);
        }
    }//GEN-LAST:event_jButton3ActionPerformed

    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton4ActionPerformed
        // TODO add your handling code here:
        new EncORDec().setVisible(true);
        dispose();
    }//GEN-LAST:event_jButton4ActionPerformed

    /**
     * @param args the command line arguments
     */
    Run | Debug
    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(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        }
        //</editor-fold>
```

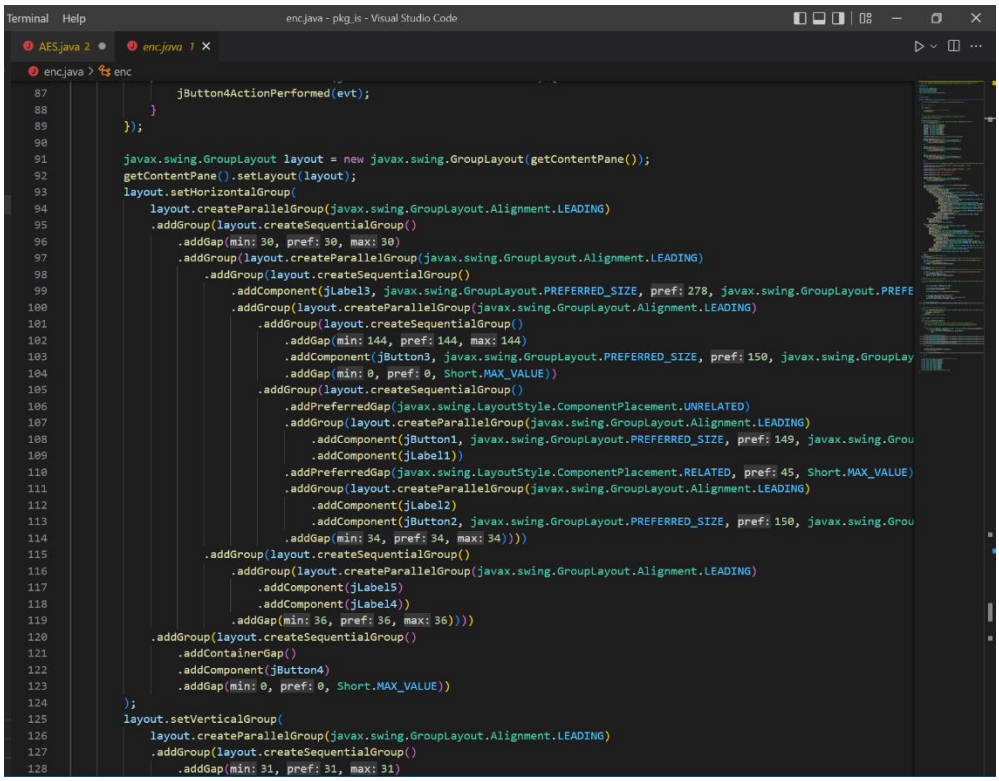


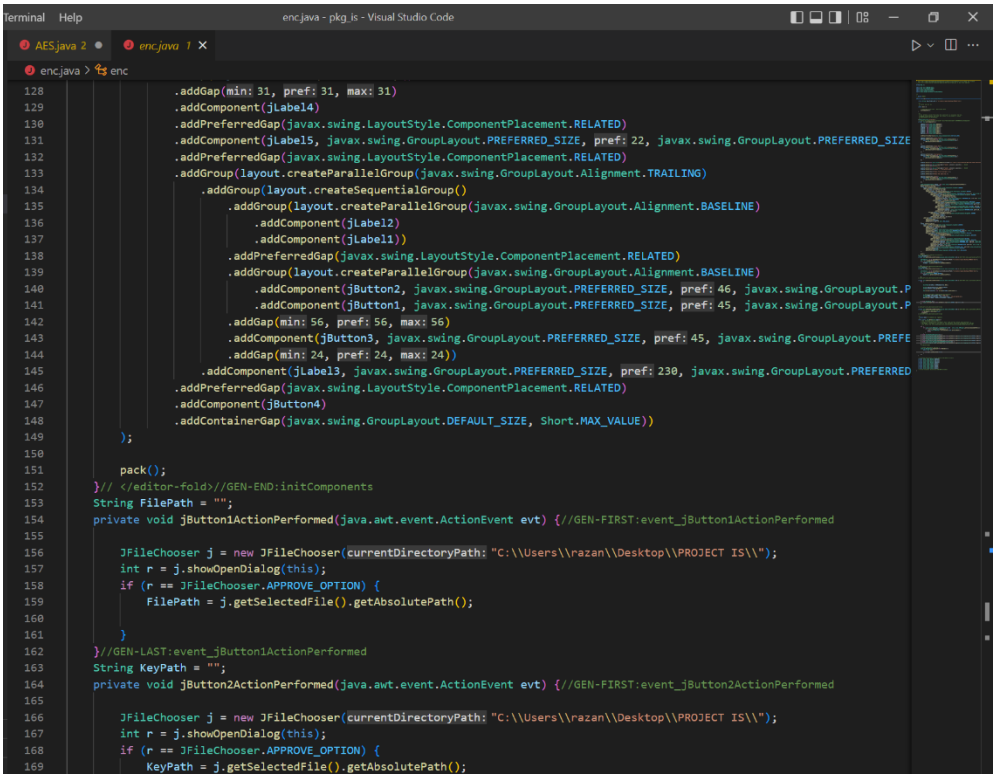
```
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(dec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new dec().setVisible(b: true);
            }
        });
    }

    // Variables declaration - do not modify//GEN-BEGIN:variables
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JButton jButton3;
    private javax.swing.JButton jButton4;
    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;
    // End of variables declaration//GEN-END:variables
}
```

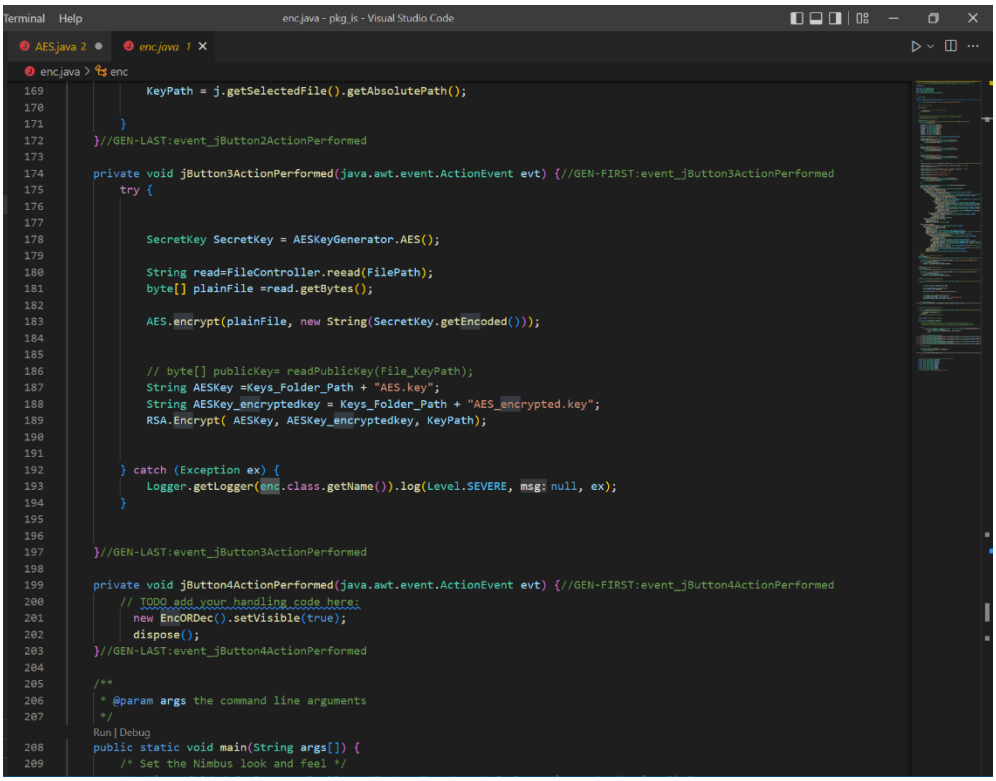
5. Enc

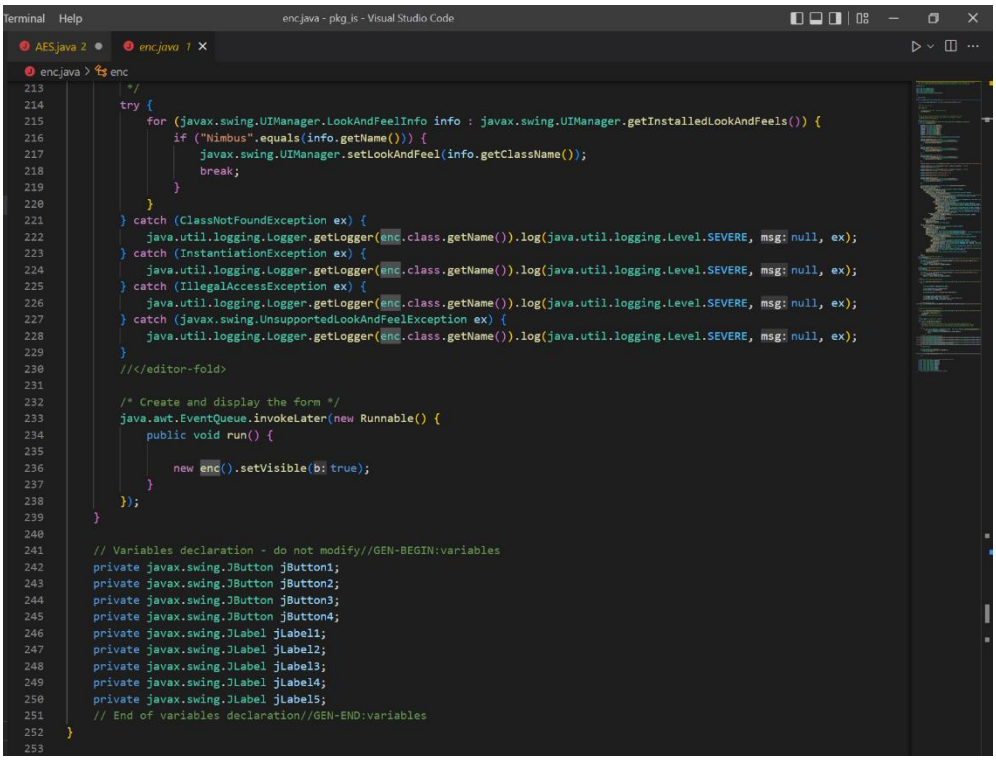

Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
package pkg_is;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.crypto.SecretKey;
import javax.swing.JFileChooser;
import javax.swing.filechooser.FileSystemView;
/**
*
* @author RAWAN
*/
public class enc extends javax.swing.JFrame {
static String Keys_Folder_Path = "C:\\Users\\razan\\Desktop\\PROJECT IS\\";
/**
* Creates new form enc
*/
public enc() {
// this.Keys_Folder_Path = Keys_Folder_Path;
initComponents();
}
/**
* 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() {
jButton1 = new javax.swing.JButton();
jButton2 = new javax.swing.JButton();
jButton3 = new javax.swing.JButton();
jLabel3 = new javax.swing.JLabel();
jLabel4 = new javax.swing.JLabel();
jLabel5 = new javax.swing.JLabel();
jLabel1 = new javax.swing.JLabel();


Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
jLabel2 = new javax.swing.JLabel();
jButton4 = new javax.swing.JButton();
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
jButton1.setText(text: "chose file");
jButton1.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton1ActionPerformed(evt);
}
});
jButton2.setText(text: "chose key");
jButton2.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton2ActionPerformed(evt);
}
});
jButton3.setText(text: "encryption");
jButton3.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton3ActionPerformed(evt);
}
});
jLabel3.setIcon(new javax.swing.ImageIcon(filename: "C:\\Users\\razan\\Desktop\\WhatsApp Image 2022-05-08 at 4.16.47 PM
jLabel4.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 50)); // NOI18N
jLabel4.setText(text: "Xsecuer");
jLabel5.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 18)); // NOI18N
jLabel5.setText(text: "company ---> encryption window");
jLabel1.setText(text: "Choose file to encrypt it.");
jLabel2.setText(text: "Choose the public key.");
jButton4.setText(text: "back");
jButton4.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton4ActionPerformed(evt);

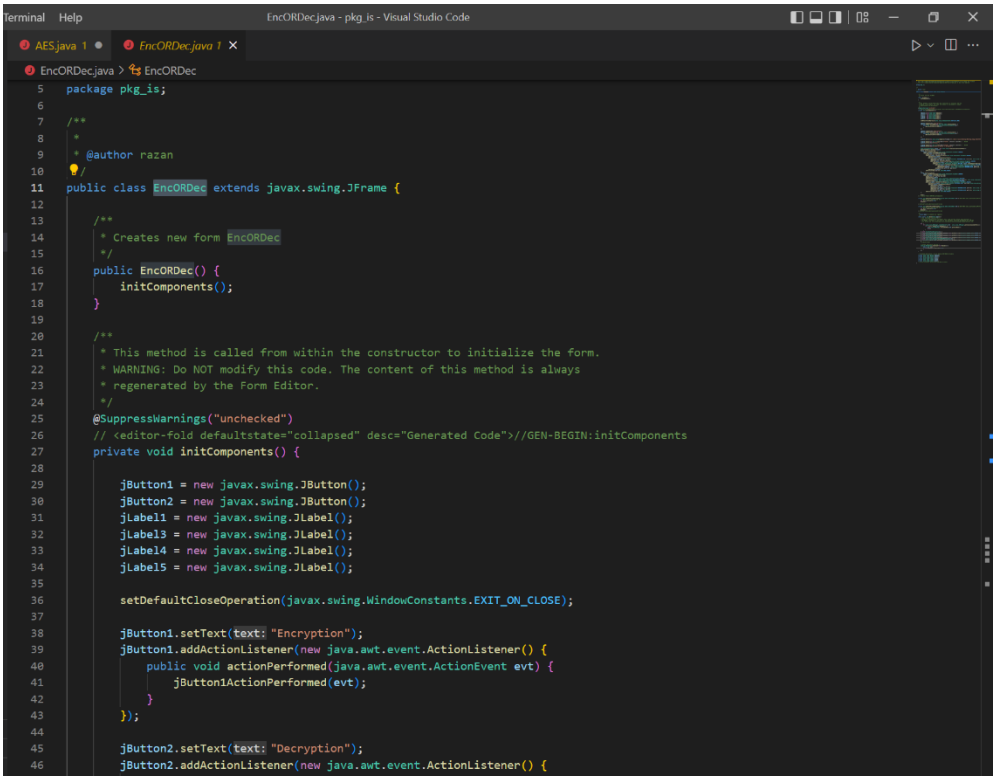

Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
jButton4ActionPerformed(evt);
}
});
javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGap(min: 30, pref: 30, max: 30)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 278, javax.swing.GroupLayout.PREFE
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGap(min: 144, pref: 144, max: 144)
.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 150, javax.swing.GroupLay
.addGap(min: 0, pref: 0, Short.MAX_VALUE))
.addGroup(layout.createSequentialGroup()
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 149, javax.swing.Grou
.addComponent(jLabel1))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, pref: 45, Short.MAX_VALUE)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel2)
.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 150, javax.swing.Grou
.addGap(min: 34, pref: 34, max: 34))))
.addGroup(layout.createSequentialGroup()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel5)
.addComponent(jLabel4))
.addGap(min: 36, pref: 36, max: 36))))
.addGroup(layout.createSequentialGroup()
.addContainerGap()
.addComponent(jButton4)
.addGap(min: 0, pref: 0, Short.MAX_VALUE))
);
layout.setVerticalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGap(min: 31, pref: 31, max: 31)

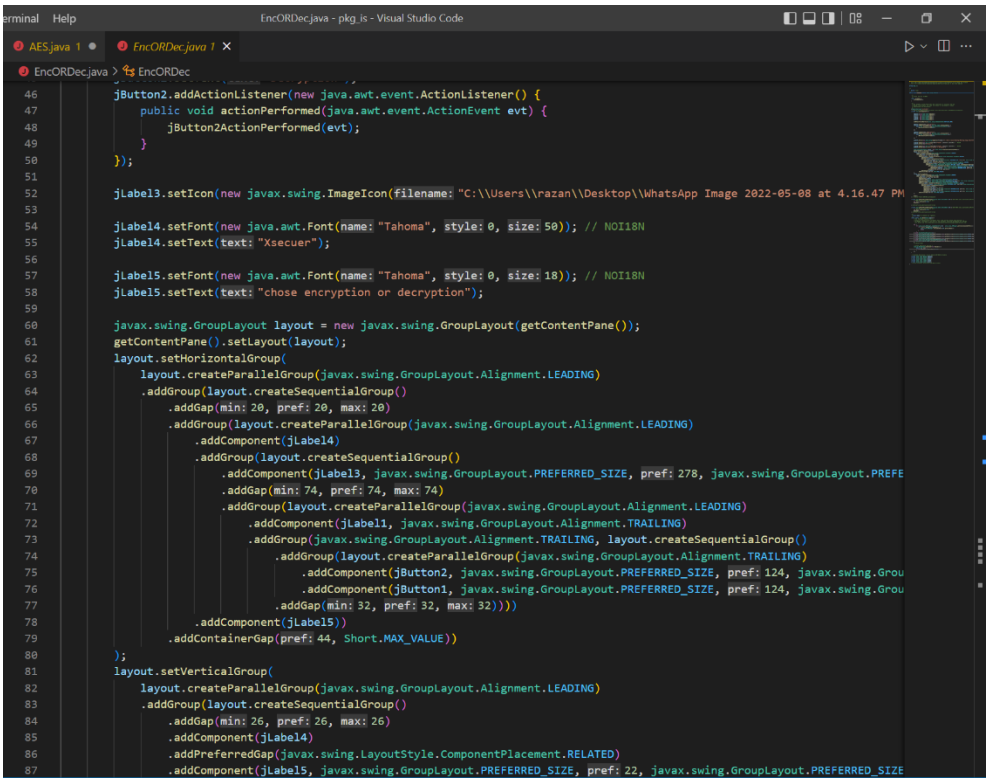

Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
.addGap(min: 31, pref: 31, max: 31)
.addComponent(jLabel4)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 22, javax.swing.GroupLayout.PREFERRED_SIZE
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
.addGroup(layout.createSequentialGroup()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
.addComponent(jLabel2)
.addComponent(jLabel1))
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 46, javax.swing.GroupLayout.P
.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 45, javax.swing.GroupLayout.P
.addGap(min: 56, pref: 56, max: 56)
.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 45, javax.swing.GroupLayout.PREFE
.addGap(min: 24, pref: 24, max: 24))
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 230, javax.swing.GroupLayout.PREFERRED
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addComponent(jButton4)
.addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
);
pack();
}// </editor-fold>//GEN-END:initComponents
String FilePath = "";
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton1ActionPerformed
JFileChooser j = new JFileChooser(currentDirectoryPath: "C:\\Users\\razan\\Desktop\\PROJECT IS\\");
int r = j.showOpenDialog(this);
if (r == JFileChooser.APPROVE_OPTION) {
FilePath = j.getSelectedFile().getAbsolutePath();
}
}//GEN-LAST:event_jButton1ActionPerformed
String KeyPath = "";
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton2ActionPerformed
JFileChooser j = new JFileChooser(currentDirectoryPath: "C:\\Users\\razan\\Desktop\\PROJECT IS\\");
int r = j.showOpenDialog(this);
if (r == JFileChooser.APPROVE_OPTION) {
KeyPath = j.getSelectedFile().getAbsolutePath();

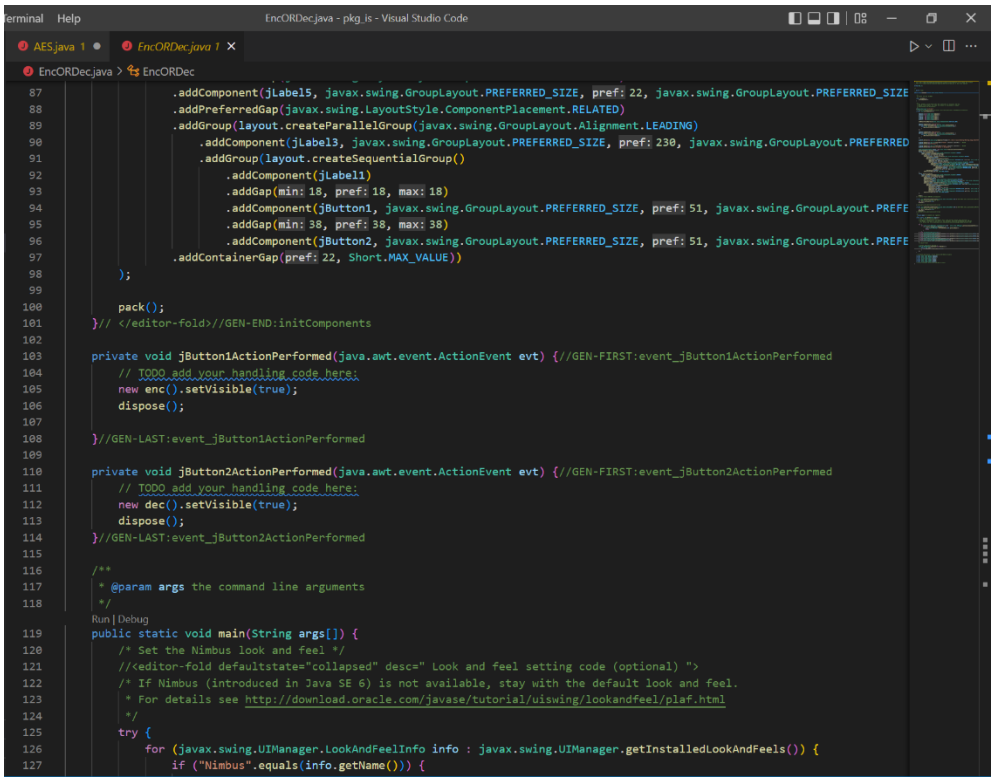

Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
KeyPath = j.getSelectedFile().getAbsolutePath();
}//GEN-LAST:event_jButton2ActionPerformed
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton3ActionPerformed
try {
SecretKey SecretKey = AESKeyGenerator.AES();
String read=FileController.reead(FilePath);
byte[] plainFile =read.getBytes();
AES.encrypt(plainFile, new String(SecretKey.getEncoded()));
// byte[] publicKey= readPublicKey(File_KeyPath);
String AESKey =Keys_Folder_Path + "AES.key";
String AESKey_encryptedkey = Keys_Folder_Path + "AES_encrypted.key";
RSA.Encrypt(AESKey, AESKey_encryptedkey, KeyPath);
} catch (Exception ex) {
Logger.getLogger(enc.class.getName()).log(Level.SEVERE, msg: null, ex);
}
}//GEN-LAST:event_jButton3ActionPerformed
private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton4ActionPerformed
// TODO add your handling code here:
new EncORDec().setVisible(true);
dispose();
}//GEN-LAST:event_jButton4ActionPerformed
/**
* @param args the command line arguments
*/
Run | Debug
public static void main(String args[]) {
/* Set the Nimbus look and feel */

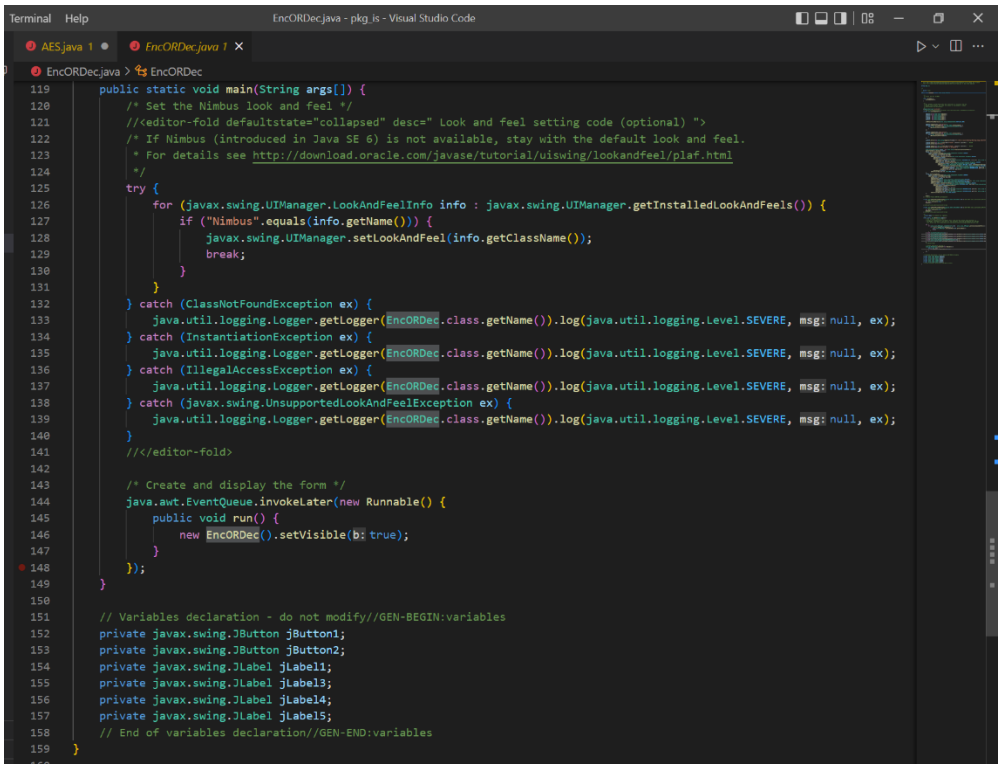

Terminal Help
enc.java - pkg_is - Visual Studio Code
AES.java 2
enc.java 1
enc.java > enc
*/
try {
for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
if ("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFeel(info.getClassName());
break;
}
}
} catch (ClassNotFoundException ex) {
java.util.logging.Logger.getLogger(enc.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(enc.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(enc.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(enc.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
}
//</editor-fold>
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
public void run() {
new enc().setVisible(b: true);
}
});
}
// Variables declaration - do not modify//GEN-BEGIN:variables
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
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;
// End of variables declaration//GEN-END:variables
}

6. EncORDec

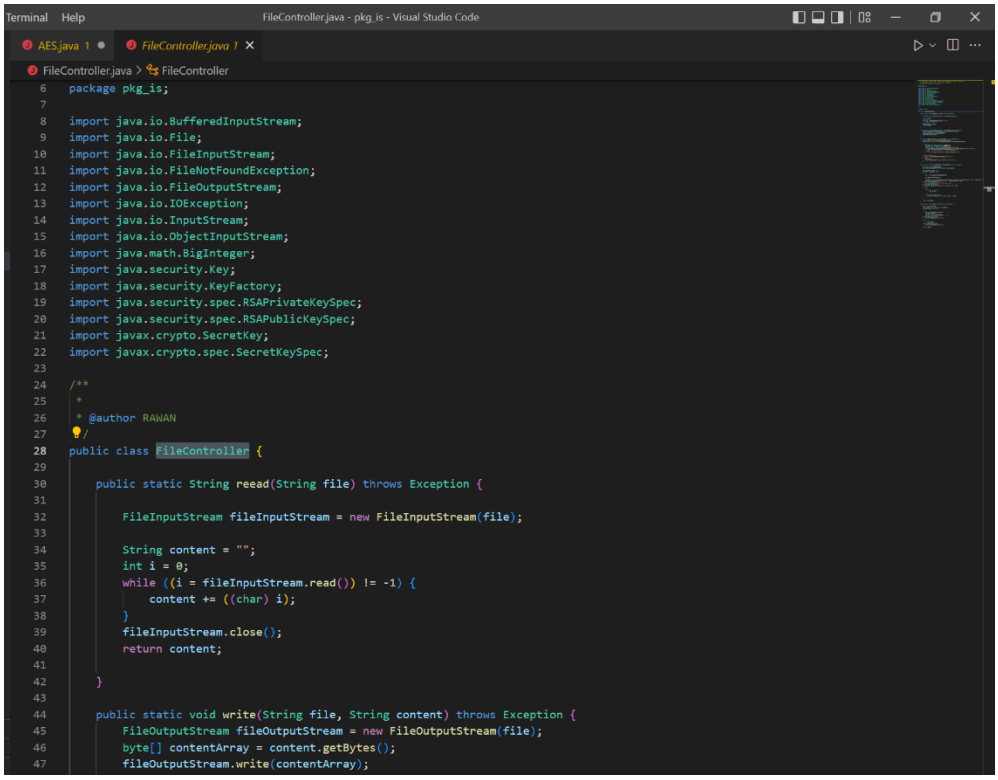

Terminal Help
EncORDec.java - pkg_is - Visual Studio Code
AES.java 1
EncORDec.java 1
EncORDec.java > EncORDec
package pkg_is;
/**
*
* @author razan
*/
public class EncORDec extends javax.swing.JFrame {
/**
* Creates new form EncORDec
*/
public EncORDec() {
initComponents();
}
/**
* This method is called 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() {
jButton1 = new javax.swing.JButton();
jButton2 = new javax.swing.JButton();
jLabel1 = new javax.swing.JLabel();
jLabel3 = new javax.swing.JLabel();
jLabel4 = new javax.swing.JLabel();
jLabel5 = new javax.swing.JLabel();
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
jButton1.setText(text: "Encryption");
jButton1.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton1ActionPerformed(evt);
}
});
jButton2.setText(text: "Decryption");
jButton2.addActionListener(new java.awt.event.ActionListener() {


Terminal Help
EncORDec.java - pkg_is - Visual Studio Code
AES.java 1
EncORDec.java 1
EncORDec.java > EncORDec
jButton2.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton2ActionPerformed(evt);
}
});
jLabel3.setIcon(new javax.swing.ImageIcon(filename: "C:\\Users\\razan\\Desktop\\WhatsApp Image 2022-05-08 at 4.16.47 PM
jLabel4.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 50)); // NOI18N
jLabel4.setText(text: "Xsecuer");
jLabel5.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 18)); // NOI18N
jLabel5.setText(text: "chose encryption or decryption");
javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGap(min: 20, pref: 20, max: 20)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel4)
.addGroup(layout.createSequentialGroup()
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 278, javax.swing.GroupLayout.PREFE
.addGap(min: 74, pref: 74, max: 74)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel1, javax.swing.GroupLayout.Alignment.TRAILING)
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 124, javax.swing.Grou
.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 124, javax.swing.Grou
.addGap(min: 32, pref: 32, max: 32))))
.addComponent(jLabel5))
.addContainerGap(pref: 44, Short.MAX_VALUE))
);
layout.setVerticalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGap(min: 26, pref: 26, max: 26)
.addComponent(jLabel4)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 22, javax.swing.GroupLayout.PREFERRED_SIZE

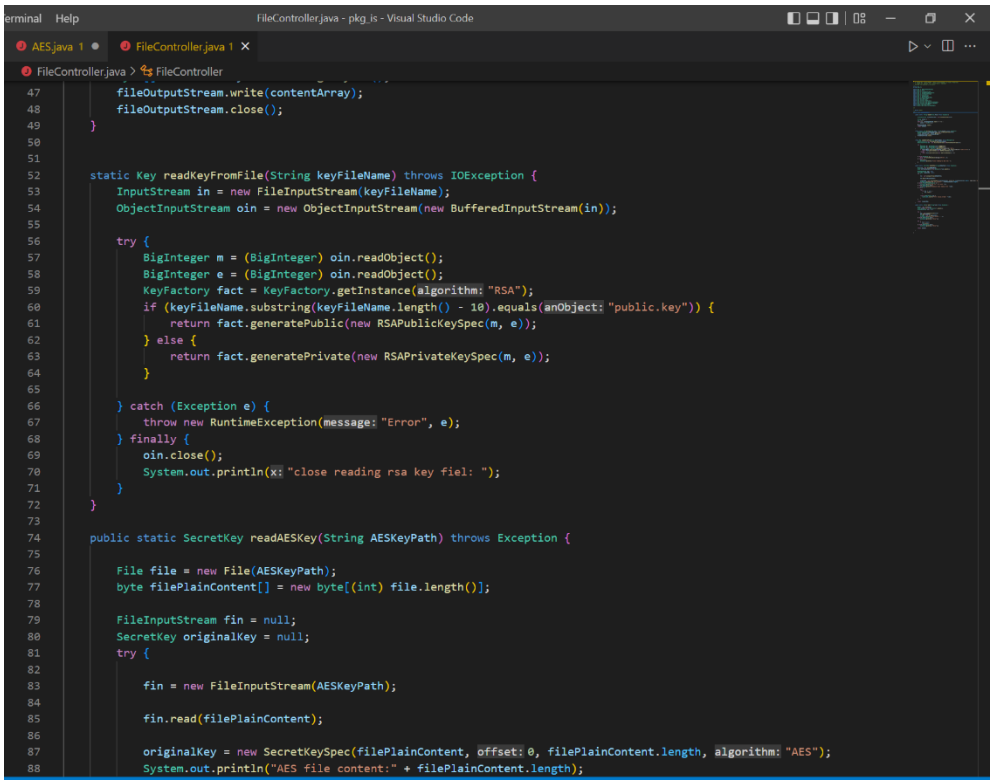

Terminal Help
EncORDec.java - pkg_is - Visual Studio Code
AES.java 1
EncORDec.java 1
EncORDec.java > EncORDec
.addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 22, javax.swing.GroupLayout.PREFERRED_SIZE
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 230, javax.swing.GroupLayout.PREFERRED
.addGroup(layout.createSequentialGroup()
.addComponent(jLabel1)
.addGap(min: 18, pref: 18, max: 18)
.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 51, javax.swing.GroupLayout.PREFE
.addGap(min: 38, pref: 38, max: 38)
.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 51, javax.swing.GroupLayout.PREFE
.addContainerGap(pref: 22, Short.MAX_VALUE))
);
pack();
}// </editor-fold>//GEN-END:initComponents
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton1ActionPerformed
// TODO add your handling code here:
new enc().setVisible(true);
dispose();
}//GEN-LAST:event_jButton1ActionPerformed
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton2ActionPerformed
// TODO add your handling code here:
new dec().setVisible(true);
dispose();
}//GEN-LAST:event_jButton2ActionPerformed
/**
* @param args the command line arguments
*/
Run | Debug
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())) {


Terminal Help
EncORDec.java - pkg_is - Visual Studio Code
AES.java 1
EncORDec.java 1
EncORDec.java > EncORDec
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(EncORDec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(EncORDec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(EncORDec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(EncORDec.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
}
//</editor-fold>
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
public void run() {
new EncORDec().setVisible(b: true);
}
});
}
// Variables declaration - do not modify//GEN-BEGIN:variables
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
// End of variables declaration//GEN-END:variables
}

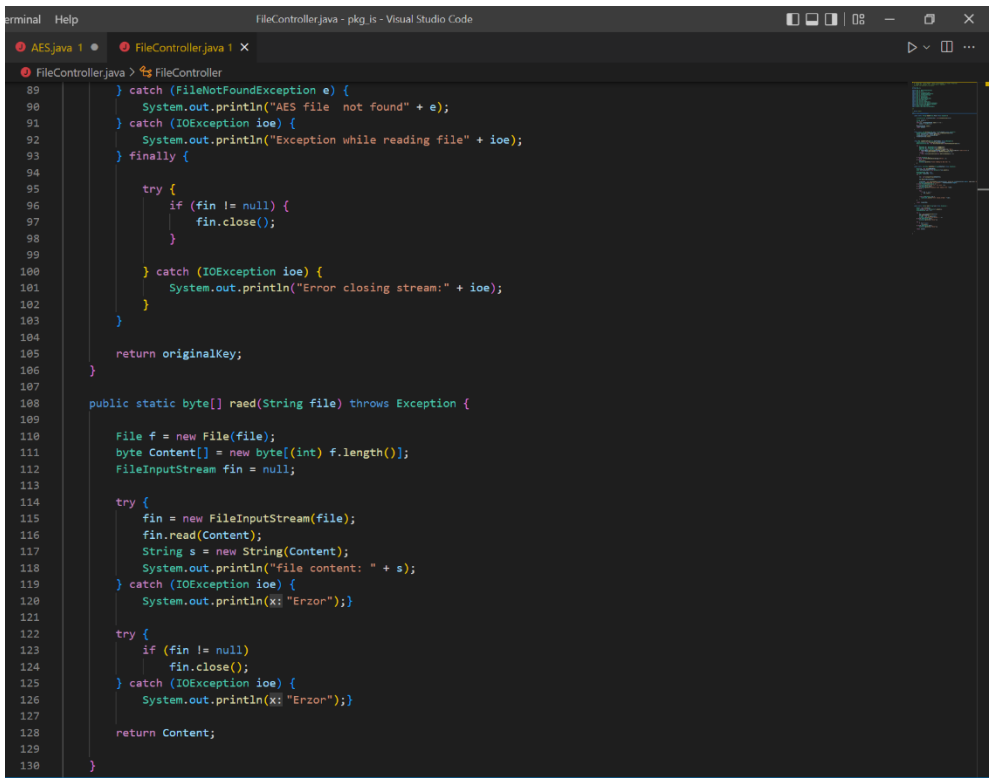
7. FileController



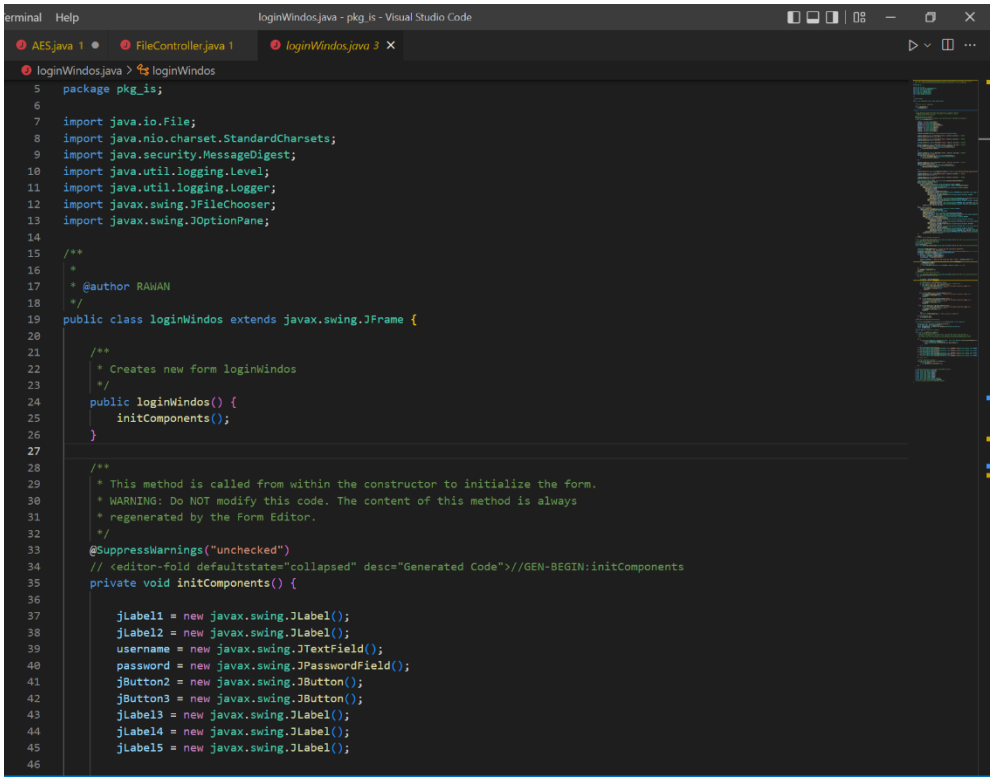
```java
package pkg_is;

import java.io.BufferedInputStream;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStream;
import java.io.ObjectInputStream;
import java.math.BigInteger;
import java.security.Key;
import java.security.KeyFactory;
import java.security.spec.RSAPrivateKeySpec;
import java.security.spec.RSAPublicKeySpec;
import javax.crypto.SecretKey;
import javax.crypto.spec.SecretKeySpec;

/**
 *
 * @author RAWAN
 */
public class FileController {

    public static String reead(String file) throws Exception {

        FileInputStream fileInputStream = new FileInputStream(file);

        String content = "";
        int i = 0;
        while ((i = fileInputStream.read()) != -1) {
            content += ((char) i);
        }
        fileInputStream.close();
        return content;

    }

    public static void write(String file, String content) throws Exception {
        FileOutputStream fileOutputStream = new FileOutputStream(file);
        byte[] contentArray = content.getBytes();
        fileOutputStream.write(contentArray);
```

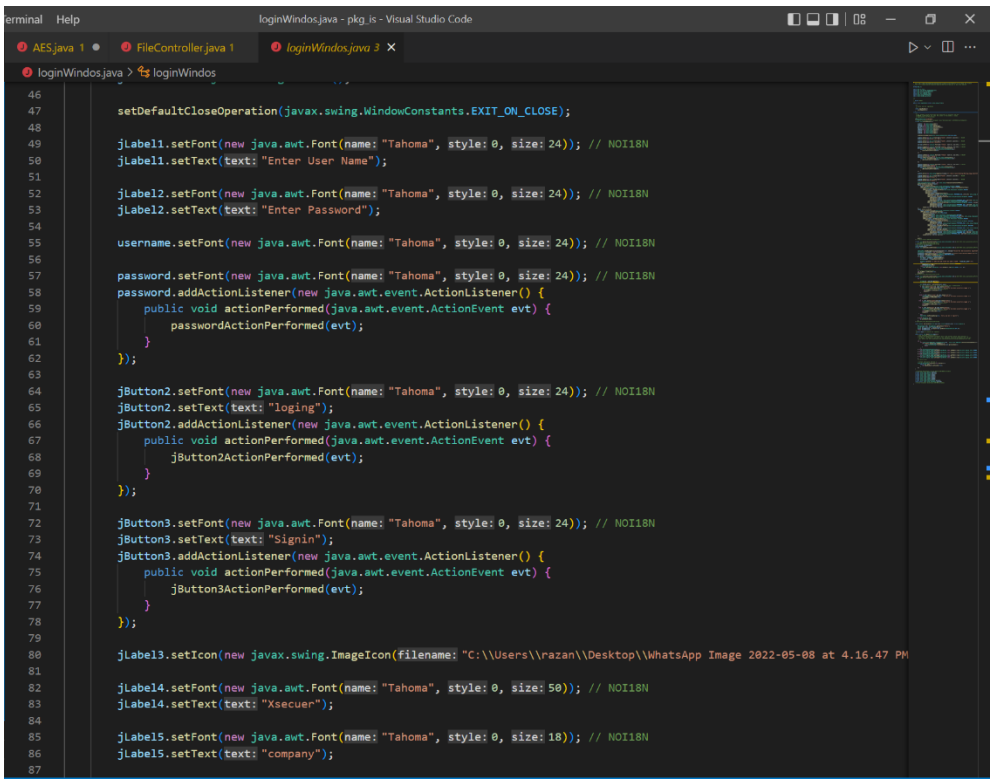


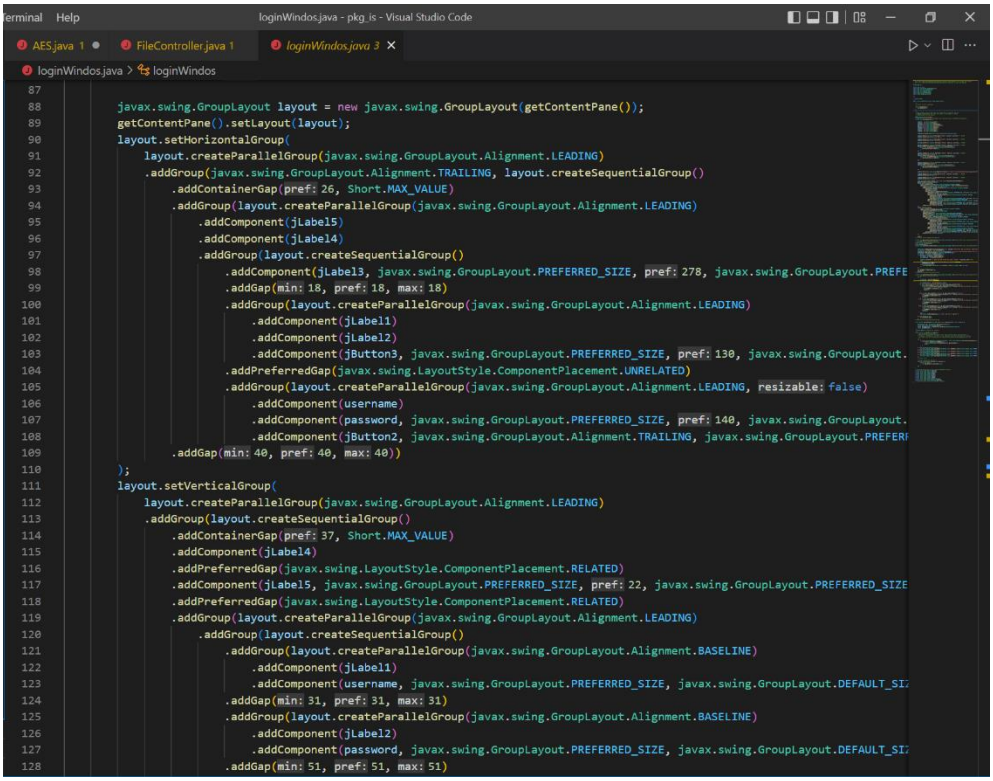
```java
        fileOutputStream.write(contentArray);
        fileOutputStream.close();
    }


    static Key readKeyFromFile(String keyFileName) throws IOException {
        InputStream in = new FileInputStream(keyFileName);
        ObjectInputStream oin = new ObjectInputStream(new BufferedInputStream(in));

        try {
            BigInteger m = (BigInteger) oin.readObject();
            BigInteger e = (BigInteger) oin.readObject();
            KeyFactory fact = KeyFactory.getInstance(algorithm: "RSA");
            if (keyFileName.substring(keyFileName.length() - 10).equals(anObject: "public.key")) {
                return fact.generatePublic(new RSAPublicKeySpec(m, e));
            } else {
                return fact.generatePrivate(new RSAPrivateKeySpec(m, e));
            }

        } catch (Exception e) {
            throw new RuntimeException(message: "Error", e);
        } finally {
            oin.close();
            System.out.println(x: "close reading rsa key fiel: ");
        }
    }

    public static SecretKey readAESKey(String AESKeyPath) throws Exception {

        File file = new File(AESKeyPath);
        byte filePlainContent[] = new byte[(int) file.length()];

        FileInputStream fin = null;
        SecretKey originalKey = null;
        try {

            fin = new FileInputStream(AESKeyPath);

            fin.read(filePlainContent);

            originalKey = new SecretKeySpec(filePlainContent, offset: 0, filePlainContent.length, algorithm: "AES");
            System.out.println("AES file content:" + filePlainContent.length);
```

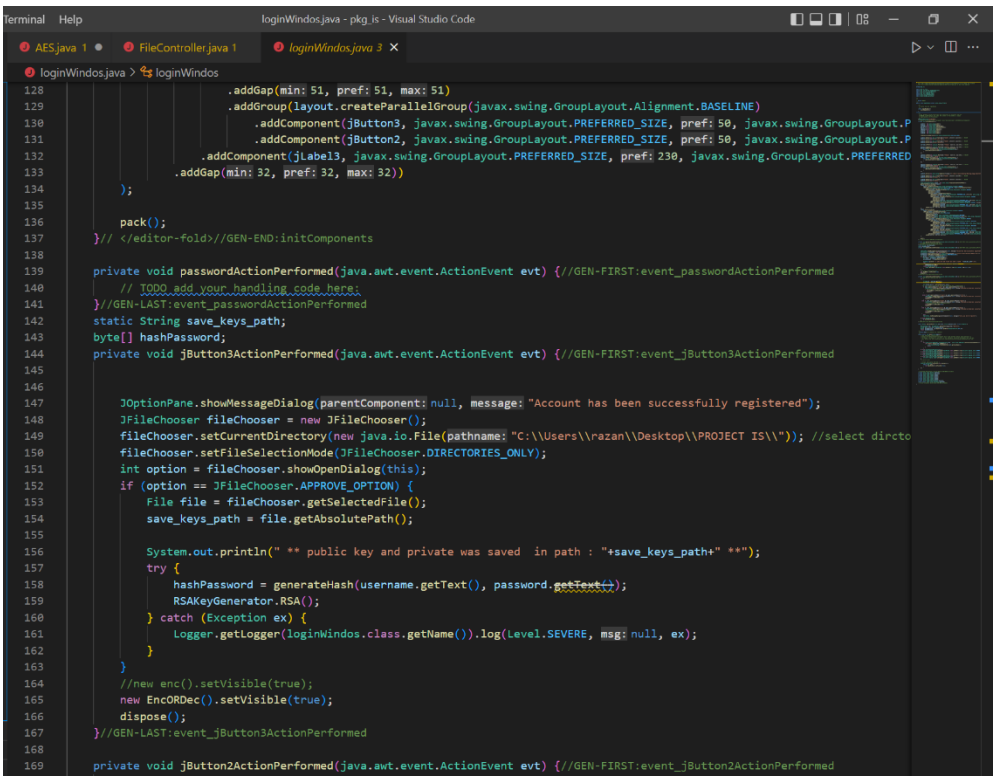


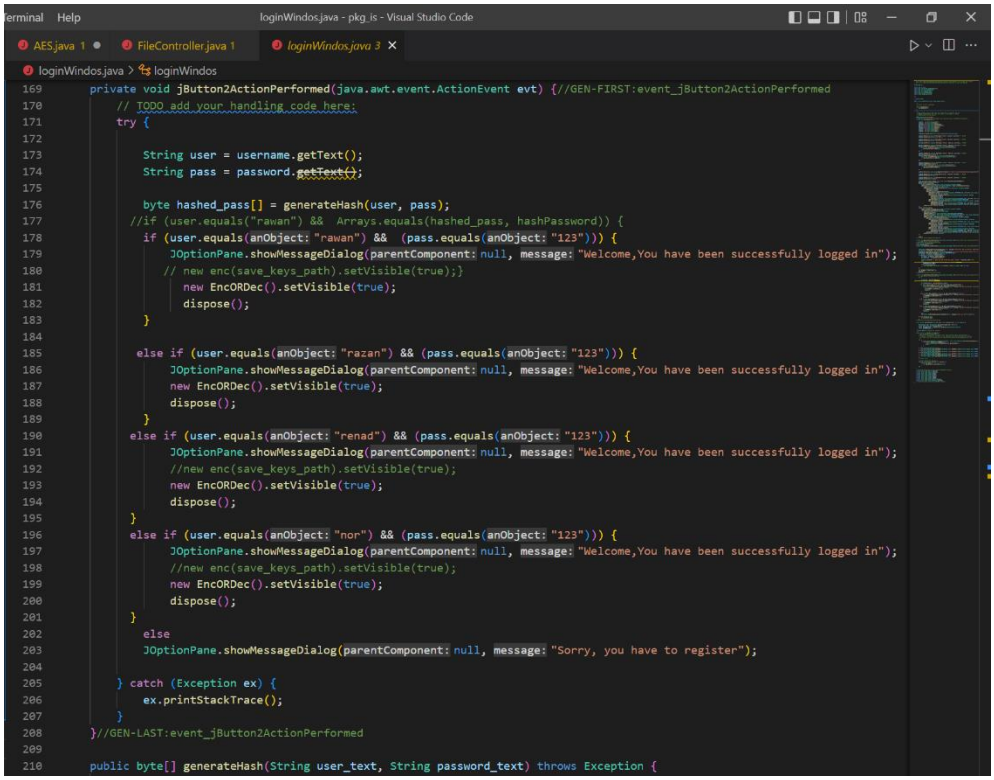
8. loginWindos

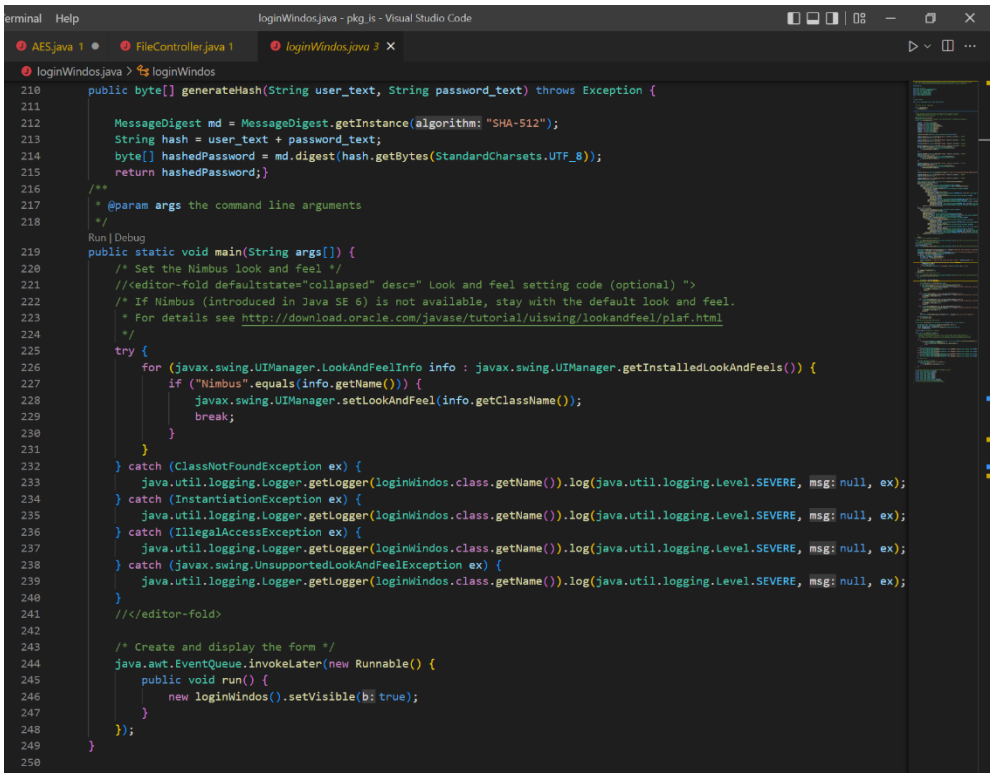


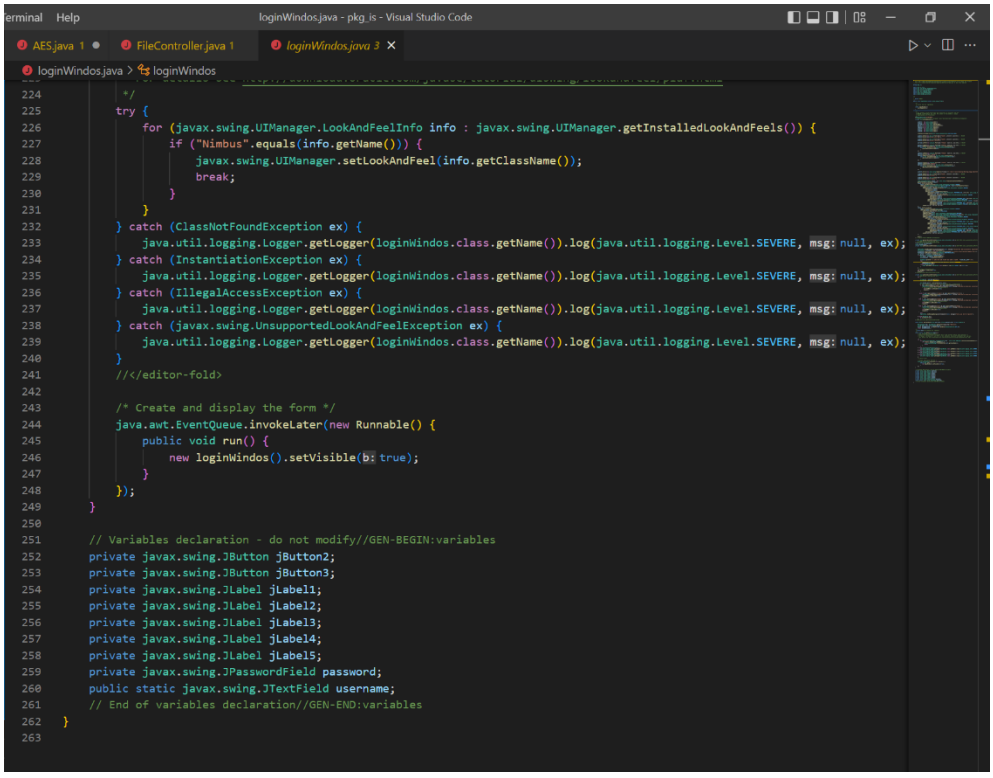

Terminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
jLabel1.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
jLabel1.setText(text: "Enter User Name");
jLabel2.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
jLabel2.setText(text: "Enter Password");
username.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
password.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
password.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
passwordActionPerformed(evt);
}
});
jButton2.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
jButton2.setText(text: "loging");
jButton2.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton2ActionPerformed(evt);
}
});
jButton3.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 24)); // NOI18N
jButton3.setText(text: "Signin");
jButton3.addActionListener(new java.awt.event.ActionListener() {
public void actionPerformed(java.awt.event.ActionEvent evt) {
jButton3ActionPerformed(evt);
}
});
jLabel3.setIcon(new javax.swing.ImageIcon(filename: "C:\\Users\\razan\\Desktop\\WhatsApp Image 2022-05-08 at 4.16.47 PM
jLabel4.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 50)); // NOI18N
jLabel4.setText(text: "Xsecuer");
jLabel5.setFont(new java.awt.Font(name: "Tahoma", style: 0, size: 18)); // NOI18N
jLabel5.setText(text: "company");


Terminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
.addContainerGap(pref: 26, Short.MAX_VALUE)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel5)
.addComponent(jLabel4)
.addGroup(layout.createSequentialGroup()
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 278, javax.swing.GroupLayout.PREFE
.addGap(min: 18, pref: 18, max: 18)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addComponent(jLabel1)
.addComponent(jLabel2)
.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 130, javax.swing.GroupLayout.
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, resizable: false)
.addComponent(username)
.addComponent(password, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 140, javax.swing.GroupLayout.
.addComponent(jButton2, javax.swing.GroupLayout.Alignment.TRAILING, javax.swing.GroupLayout.PREFERR
.addGap(min: 40, pref: 40, max: 40))
);
layout.setVerticalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addContainerGap(pref: 37, Short.MAX_VALUE)
.addComponent(jLabel4)
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 22, javax.swing.GroupLayout.PREFERRED_SIZE
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(layout.createSequentialGroup()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
.addComponent(jLabel1)
.addComponent(username, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SI
.addGap(min: 31, pref: 31, max: 31)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
.addComponent(jLabel2)
.addComponent(password, javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SI
.addGap(min: 51, pref: 51, max: 51)

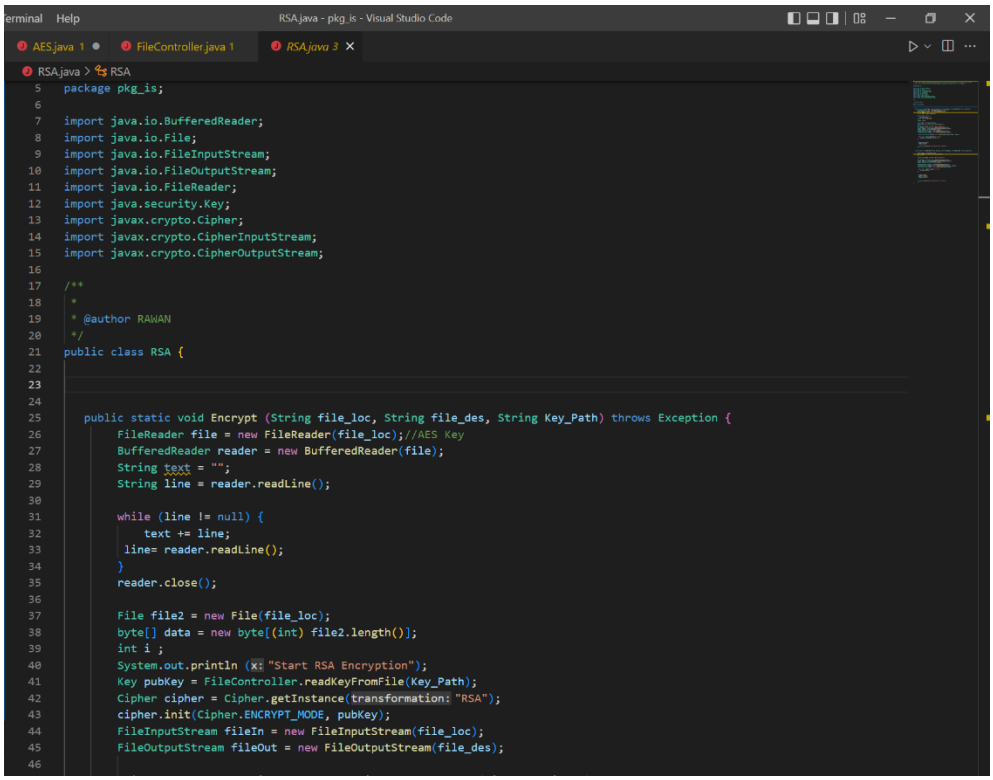

Terminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
.addGap(min: 51, pref: 51, max: 51)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 50, javax.swing.GroupLayout.P
.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 50, javax.swing.GroupLayout.P
.addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, pref: 230, javax.swing.GroupLayout.PREFERRED
.addGap(min: 32, pref: 32, max: 32))
);
pack();
}// </editor-fold>//GEN-END:initComponents
private void passwordActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_passwordActionPerformed
// TODO add your handling code here:
}//GEN-LAST:event_passwordActionPerformed
static String save_keys_path;
byte[] hashPassword;
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton3ActionPerformed
JOptionPane.showMessageDialog(parentComponent: null, message: "Account has been successfully registered");
JFileChooser fileChooser = new JFileChooser();
fileChooser.setCurrentDirectory(new java.io.File(pathname: "C:\\Users\\razan\\Desktop\\PROJECT IS\\")); //select dircto
fileChooser.setFileSelectionMode(JFileChooser.DIRECTORIES_ONLY);
int option = fileChooser.showOpenDialog(this);
if (option == JFileChooser.APPROVE_OPTION) {
File file = fileChooser.getSelectedFile();
save_keys_path = file.getAbsolutePath();
System.out.println(" ** public key and private was saved in path : "+save_keys_path+" **");
try {
hashPassword = generateHash(username.getText(), password.getText());
RSAKeyGenerator.RSA();
} catch (Exception ex) {
Logger.getLogger(loginWindos.class.getName()).log(Level.SEVERE, msg: null, ex);
}
}
//new enc().setVisible(true);
new EncORDec().setVisible(true);
dispose();
}//GEN-LAST:event_jButton3ActionPerformed
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton2ActionPerformed

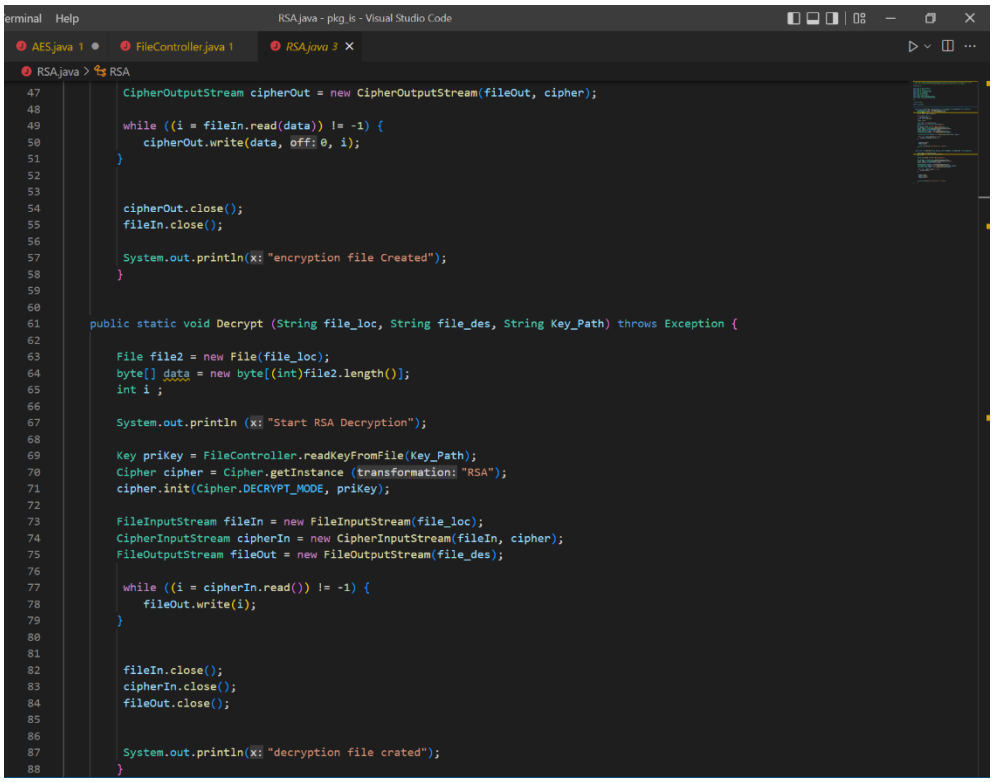

Terminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event_jButton2ActionPerformed
// TODO add your handling code here:
try {
String user = username.getText();
String pass = password.getText();
byte hashed_pass[] = generateHash(user, pass);
//if (user.equals("rawan") && Arrays.equals(hashed_pass, hashPassword)) {
if (user.equals(anObject: "rawan") && (pass.equals(anObject: "123"))) {
JOptionPane.showMessageDialog(parentComponent: null, message: "Welcome,You have been successfully logged in");
// new enc(save_keys_path).setVisible(true);}
new EncORDec().setVisible(true);
dispose();
}
else if (user.equals(anObject: "razan") && (pass.equals(anObject: "123"))) {
JOptionPane.showMessageDialog(parentComponent: null, message: "Welcome,You have been successfully logged in");
new EncORDec().setVisible(true);
dispose();
}
else if (user.equals(anObject: "renad") && (pass.equals(anObject: "123"))) {
JOptionPane.showMessageDialog(parentComponent: null, message: "Welcome,You have been successfully logged in");
//new enc(save_keys_path).setVisible(true);
new EncORDec().setVisible(true);
dispose();
}
else if (user.equals(anObject: "nor") && (pass.equals(anObject: "123"))) {
JOptionPane.showMessageDialog(parentComponent: null, message: "Welcome,You have been successfully logged in");
//new enc(save_keys_path).setVisible(true);
new EncORDec().setVisible(true);
dispose();
}
else
JOptionPane.showMessageDialog(parentComponent: null, message: "Sorry, you have to register");
} catch (Exception ex) {
ex.printStackTrace();
}
}//GEN-LAST:event_jButton2ActionPerformed
public byte[] generateHash(String user_text, String password_text) throws Exception {


erminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
public byte[] generateHash(String user_text, String password_text) throws Exception {
MessageDigest md = MessageDigest.getInstance(algorithm: "SHA-512");
String hash = user_text + password_text;
byte[] hashedPassword = md.digest(hash.getBytes(StandardCharsets.UTF_8));
return hashedPassword;}
/**
* @param args the command line arguments
*/
Run | Debug
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(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
}
//</editor-fold>
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
public void run() {
new loginWindos().setVisible(b: true);
}
});
}

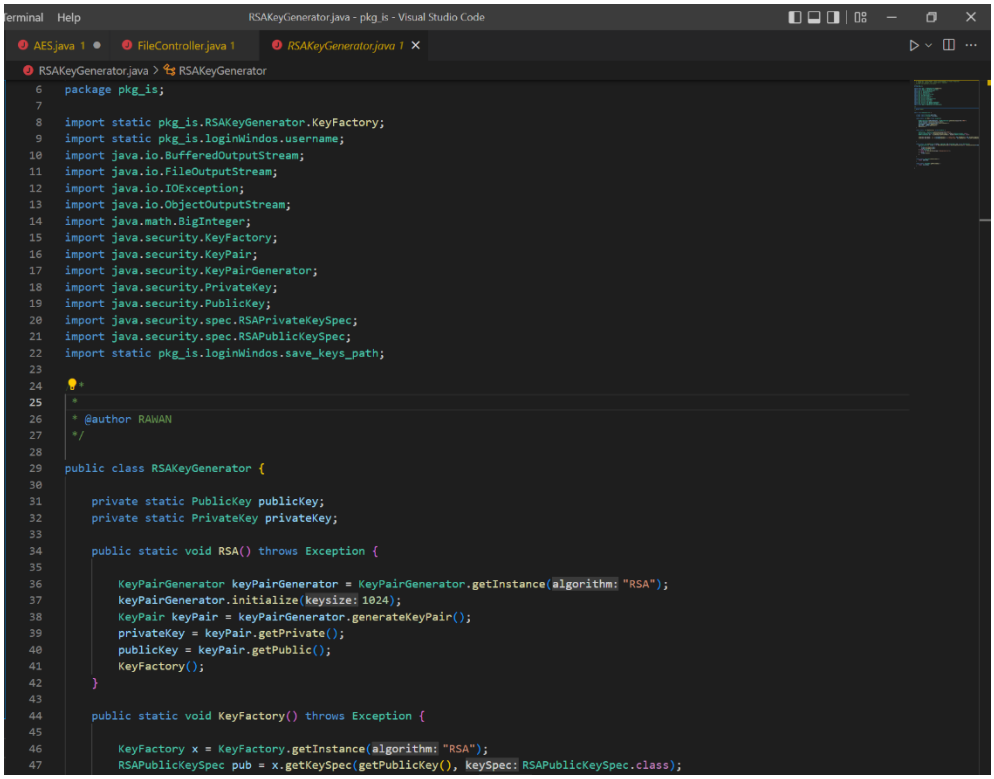

erminal Help
loginWindos.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
loginWindos.java 3
loginWindos.java > loginWindos
*/
try {
for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
if ("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFeel(info.getClassName());
break;
}
}
} catch (ClassNotFoundException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (InstantiationException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
} catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(loginWindos.class.getName()).log(java.util.logging.Level.SEVERE, msg: null, ex);
}
//</editor-fold>
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
public void run() {
new loginWindos().setVisible(b: true);
}
});
}
// Variables declaration - do not modify//GEN-BEGIN:variables
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
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.JPasswordField password;
public static javax.swing.JTextField username;
// End of variables declaration//GEN-END:variables
}

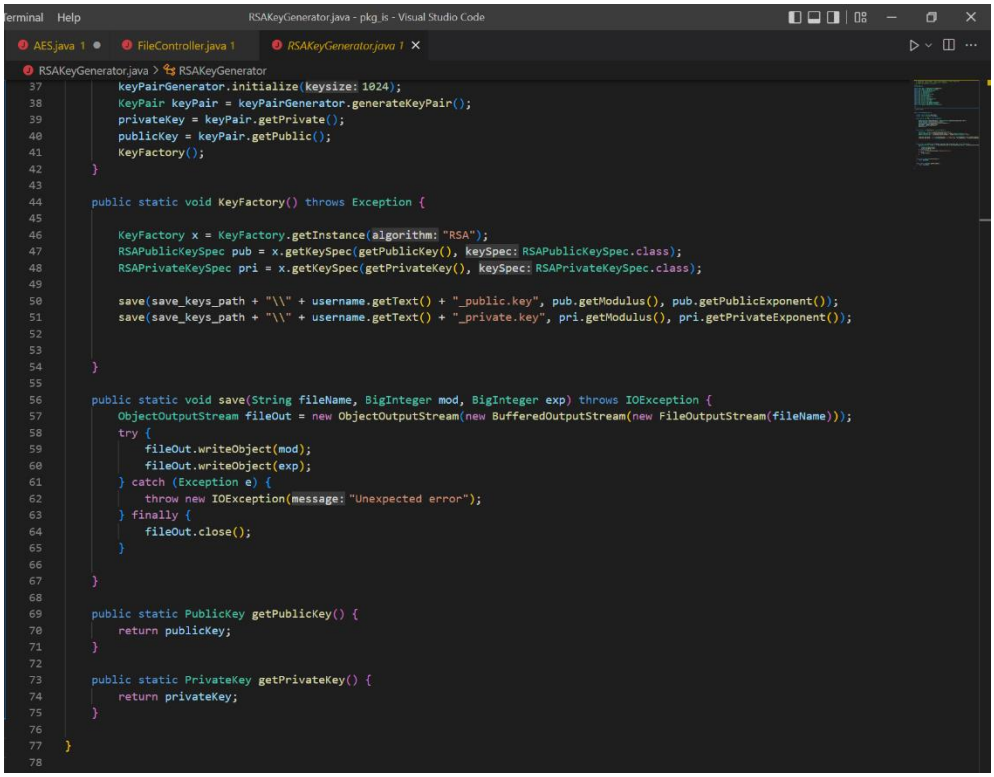
9. RSA


erminal Help
RSA.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
RSA.java 3
RSA.java > RSA
5 package pkg_is;
7 import java.io.BufferedReader;
8 import java.io.File;
9 import java.io.FileInputStream;
10 import java.io.FileOutputStream;
11 import java.io.FileReader;
12 import java.security.Key;
13 import javax.crypto.Cipher;
14 import javax.crypto.CipherInputStream;
15 import javax.crypto.CipherOutputStream;
17 /**
18 *
19 * @author RAWAN
20 */
21 public class RSA {
25 public static void Encrypt (String file_loc, String file_des, String Key_Path) throws Exception {
26 FileReader file = new FileReader(file_loc);//AES Key
27 BufferedReader reader = new BufferedReader(file);
28 String text = "";
29 String line = reader.readLine();
31 while (line != null) {
32 text += line;
33 line= reader.readLine();
34 }
35 reader.close();
37 File file2 = new File(file_loc);
38 byte[] data = new byte[(int) file2.length()];
39 int i ;
40 System.out.println (x: "Start RSA Encryption");
41 Key pubKey = FileController.readKeyFromFile(Key_Path);
42 Cipher cipher = Cipher.getInstance(transformation: "RSA");
43 cipher.init(Cipher.ENCRYPT_MODE, pubKey);
44 FileInputStream fileIn = new FileInputStream(file_loc);
45 FileOutputStream fileOut = new FileOutputStream(file_des);

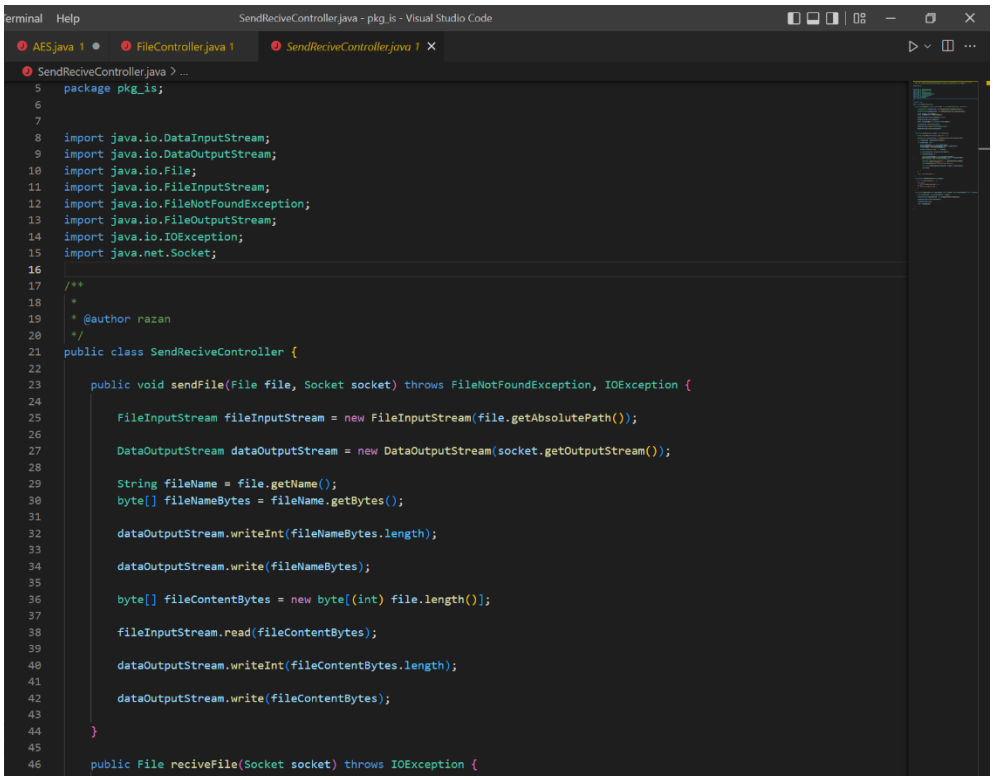

erminal Help
RSA.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
RSA.java 3
RSA.java > RSA
47 CipherOutputStream cipherOut = new CipherOutputStream(fileOut, cipher);
49 while ((i = fileIn.read(data)) != -1) {
50 cipherOut.write(data, off: 0, i);
51 }
54 cipherOut.close();
55 fileIn.close();
57 System.out.println(x: "encryption file Created");
58 }
61 public static void Decrypt (String file_loc, String file_des, String Key_Path) throws Exception {
63 File file2 = new File(file_loc);
64 byte[] data = new byte[(int)file2.length()];
65 int i ;
67 System.out.println (x: "Start RSA Decryption");
69 Key priKey = FileController.readKeyFromFile(Key_Path);
70 Cipher cipher = Cipher.getInstance (transformation: "RSA");
71 cipher.init(Cipher.DECRYPT_MODE, priKey);
73 FileInputStream fileIn = new FileInputStream(file_loc);
74 CipherInputStream cipherIn = new CipherInputStream(fileIn, cipher);
75 FileOutputStream fileOut = new FileOutputStream(file_des);
77 while ((i = cipherIn.read()) != -1) {
78 fileOut.write(i);
79 }
82 fileIn.close();
83 cipherIn.close();
84 fileOut.close();
87 System.out.println(x: "decryption file crated");
88 }

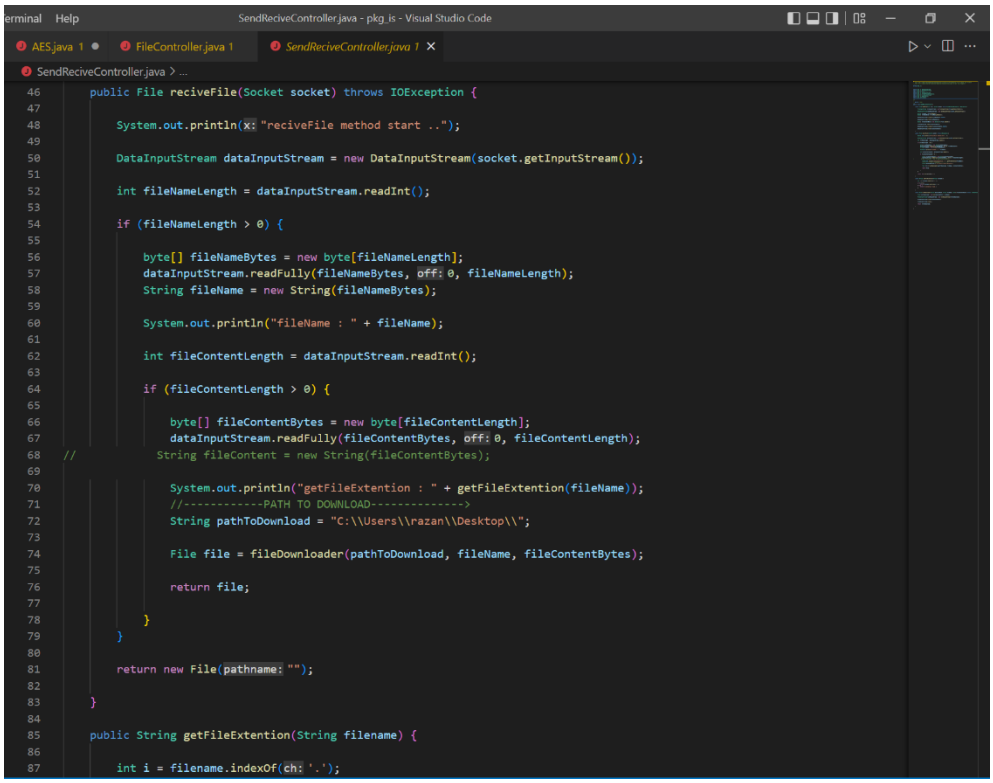
10. RSAKeyGenerator

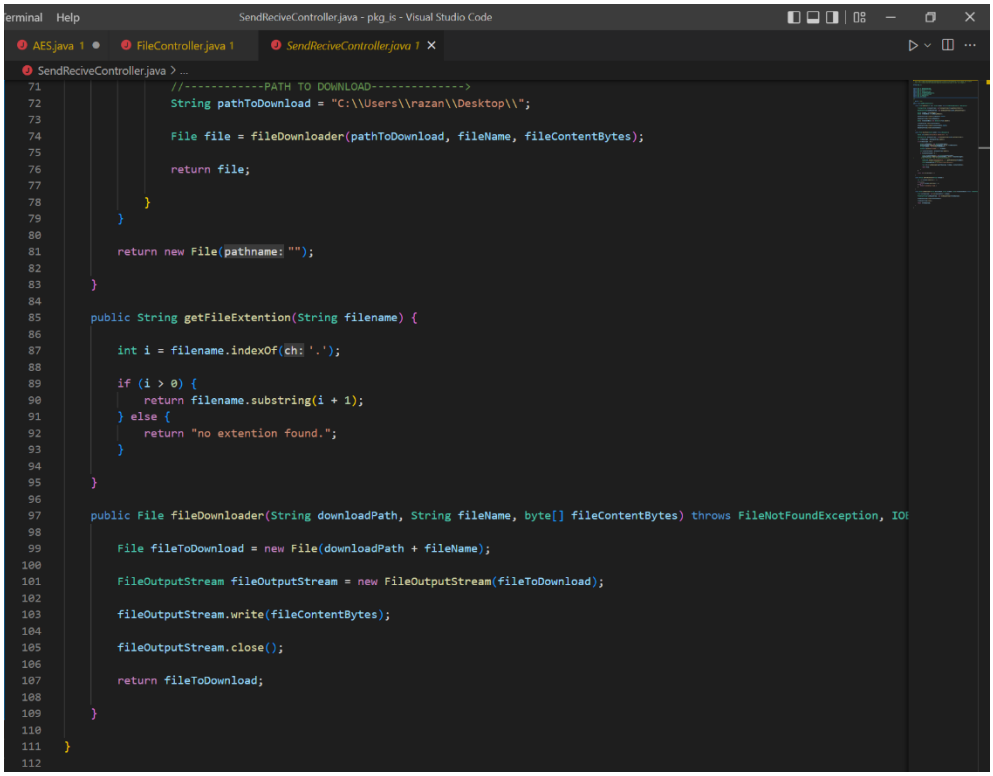




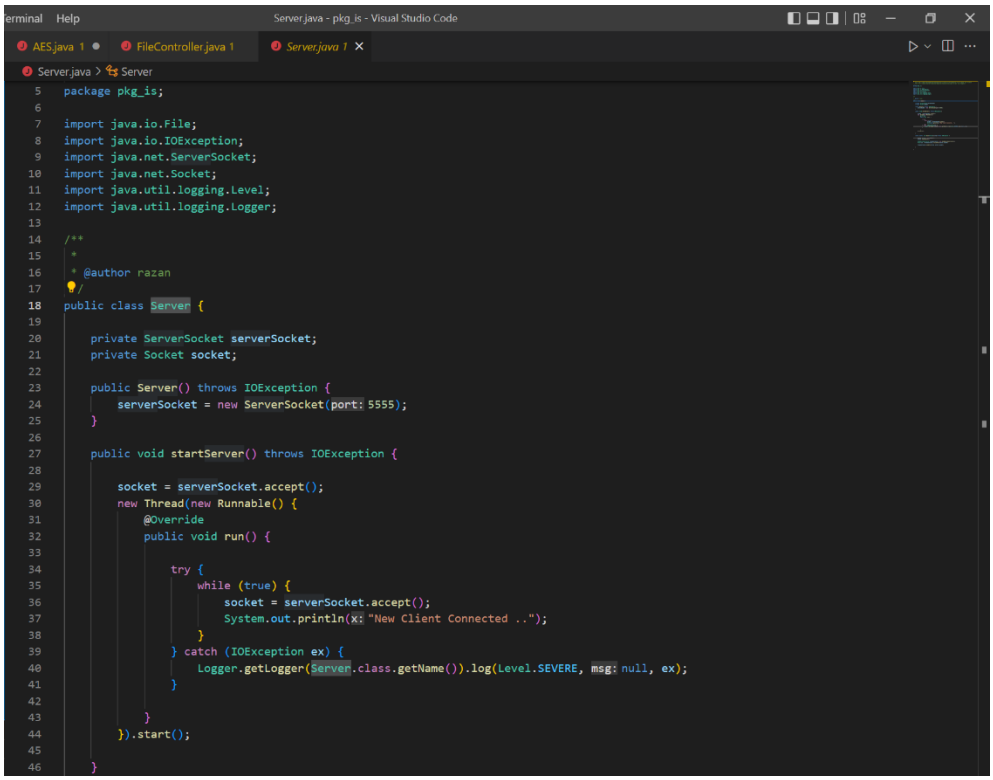
11. SendReciveController

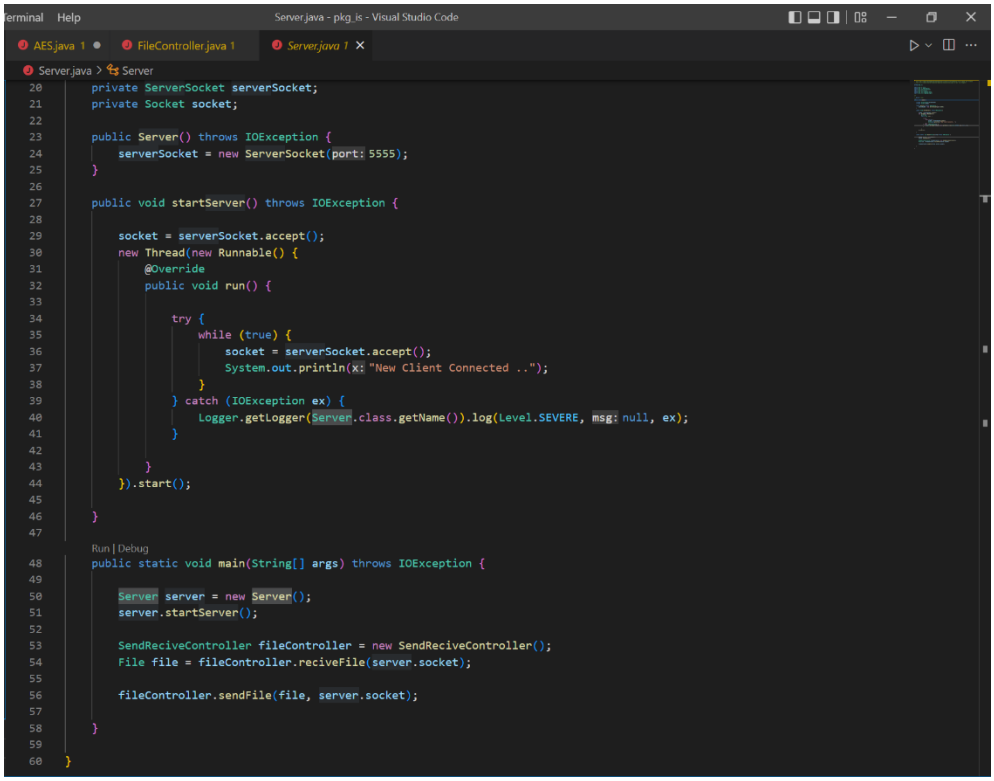





erminal Help
SendReciveController.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
SendReciveController.java 1
SendReciveController.java > ...
//------------PATH TO DOWNLOAD------------>
String pathToDownload = "C:\\Users\\razan\\Desktop\\";
File file = fileDownloader(pathToDownload, fileName, fileContentBytes);
return file;
return new File(pathname: "");
public String getFileExtention(String filename) {
int i = filename.indexOf(ch: '.');
if (i > 0) {
return filename.substring(i + 1);
} else {
return "no extention found.";
public File fileDownloader(String downloadPath, String fileName, byte[] fileContentBytes) throws FileNotFoundException, IO
File fileToDownload = new File(downloadPath + fileName);
FileOutputStream fileOutputStream = new FileOutputStream(fileToDownload);
fileOutputStream.write(fileContentBytes);
fileOutputStream.close();
return fileToDownload;

12. Server


erminal Help
Server.java - pkg_is - Visual Studio Code
AES.java 1
FileController.java 1
Server.java 1
Server.java > Server
package pkg_is;
import java.io.File;
import java.io.IOException;
import java.net.ServerSocket;
import java.net.Socket;
import java.util.logging.Level;
import java.util.logging.Logger;
/**
*
* @author razan
*/
public class Server {
private ServerSocket serverSocket;
private Socket socket;
public Server() throws IOException {
serverSocket = new ServerSocket(port: 5555);
public void startServer() throws IOException {
socket = serverSocket.accept();
new Thread(new Runnable() {
@Override
public void run() {
try {
while (true) {
socket = serverSocket.accept();
System.out.println(x: "New Client Connected ..");
} catch (IOException ex) {
Logger.getLogger(Server.class.getName()).log(Level.SEVERE, msg: null, ex);
}).start();



○ Challenges

- how to Read the plaintext file
- Save the encrypted file as a file
- Create a TCP connection between sender and receiver
- How to connect the algorithm RSA and AES with our code
- how to protect password

○ Note

You must change the path in the code to the path in your device so it can work correctly with you.

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