DOKUMENTACIJA PROJEKTA IZ ZAŠTITE PODATAKA

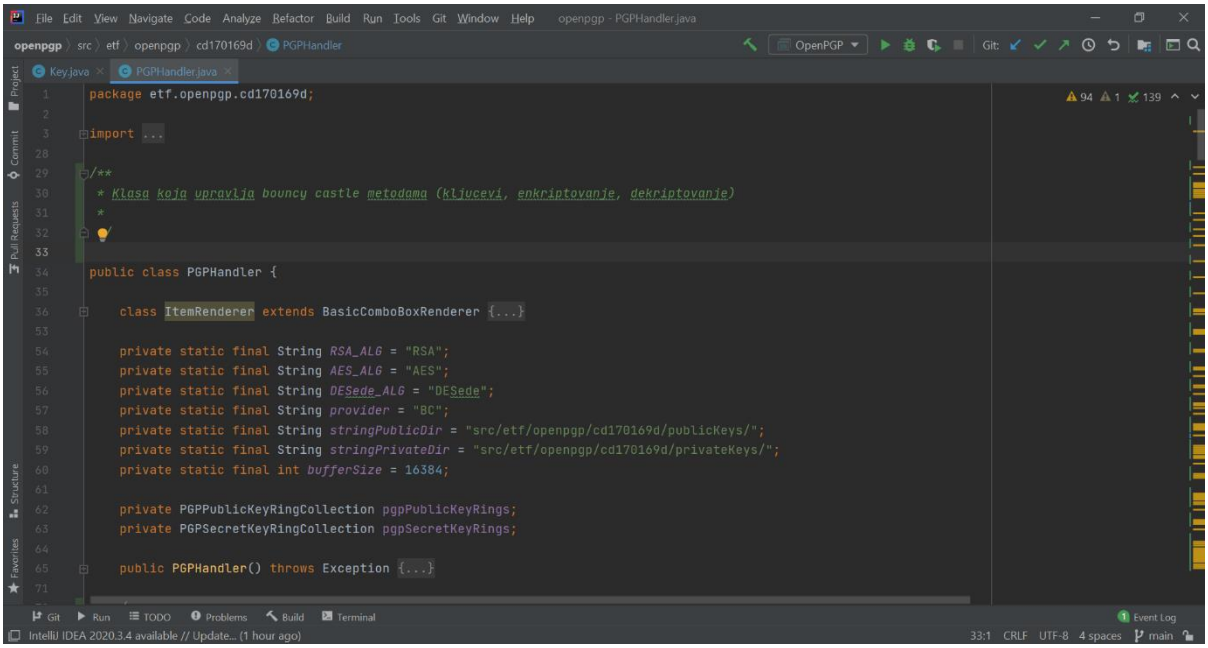
Dušan Cvjetičanin 0169/17

Dokumentacija sadrži screenshotove klasa i potpisa metoda, kao i odgovarajućih komentara.

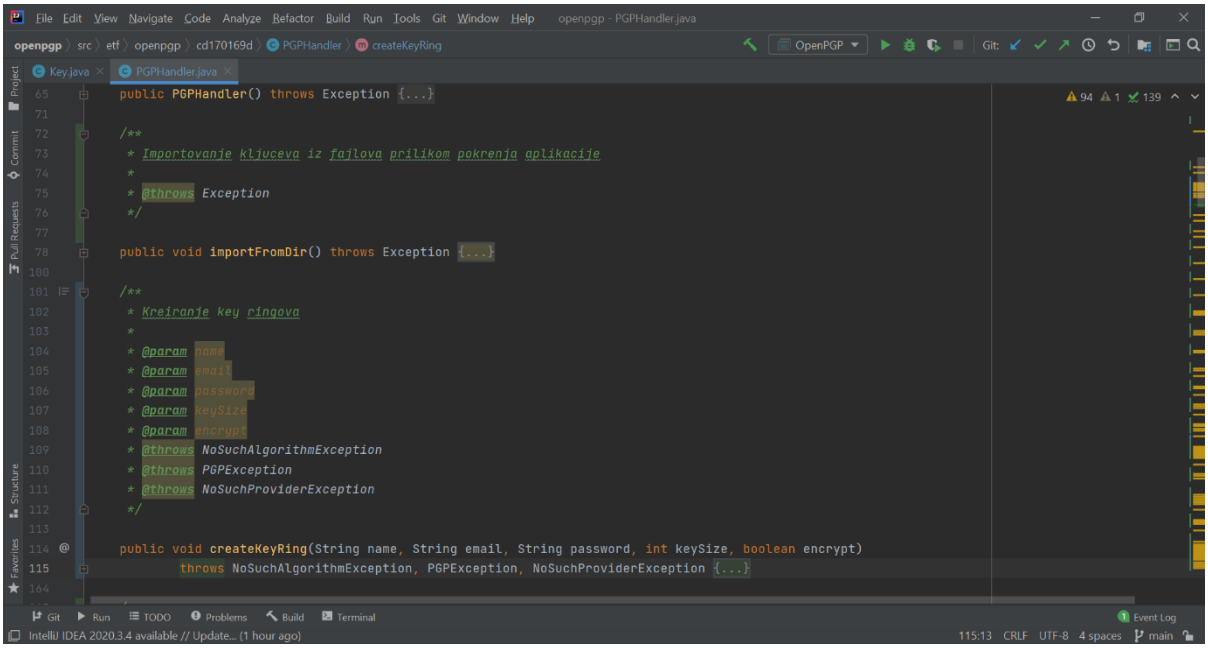
U dokumentaciji su opisanje sledeće klase:

1. PGPHandle
2. OpenPGP
3. Key
4. KeyTableModel
5. Message

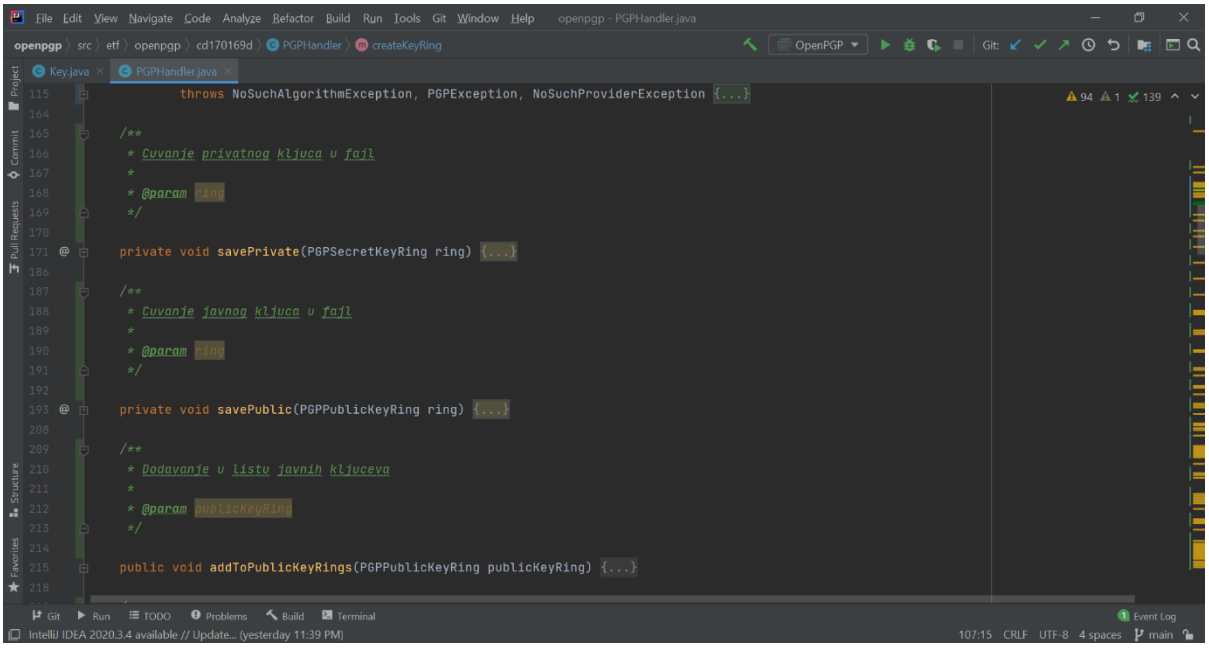
PGPHandler

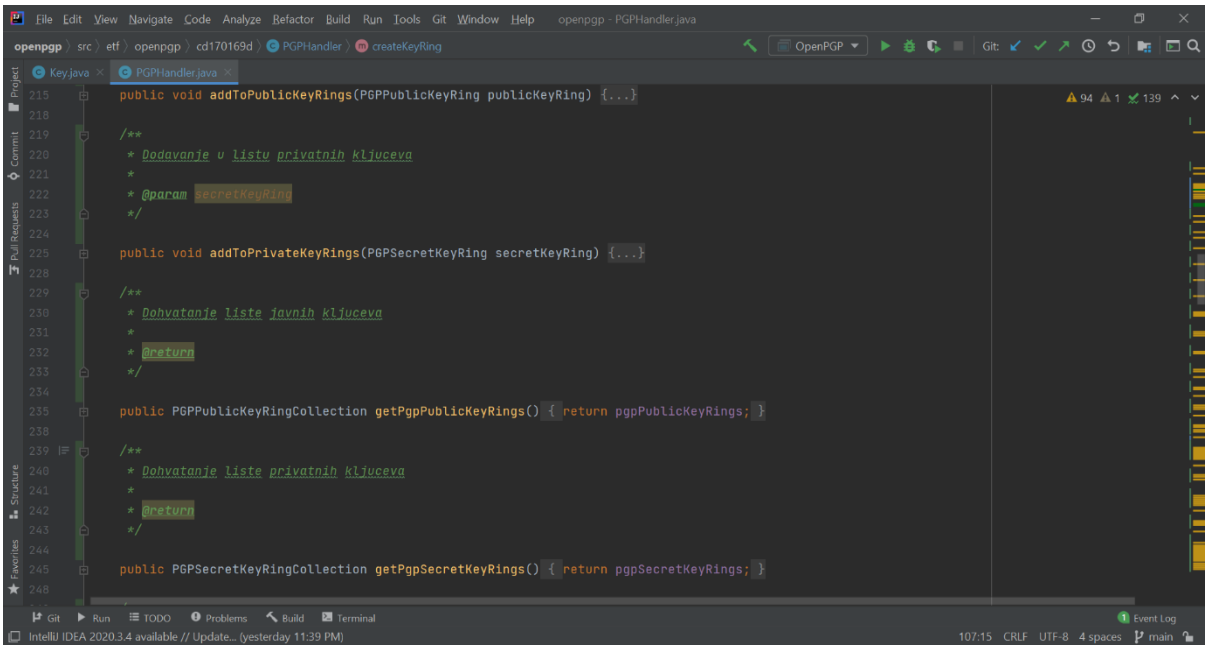


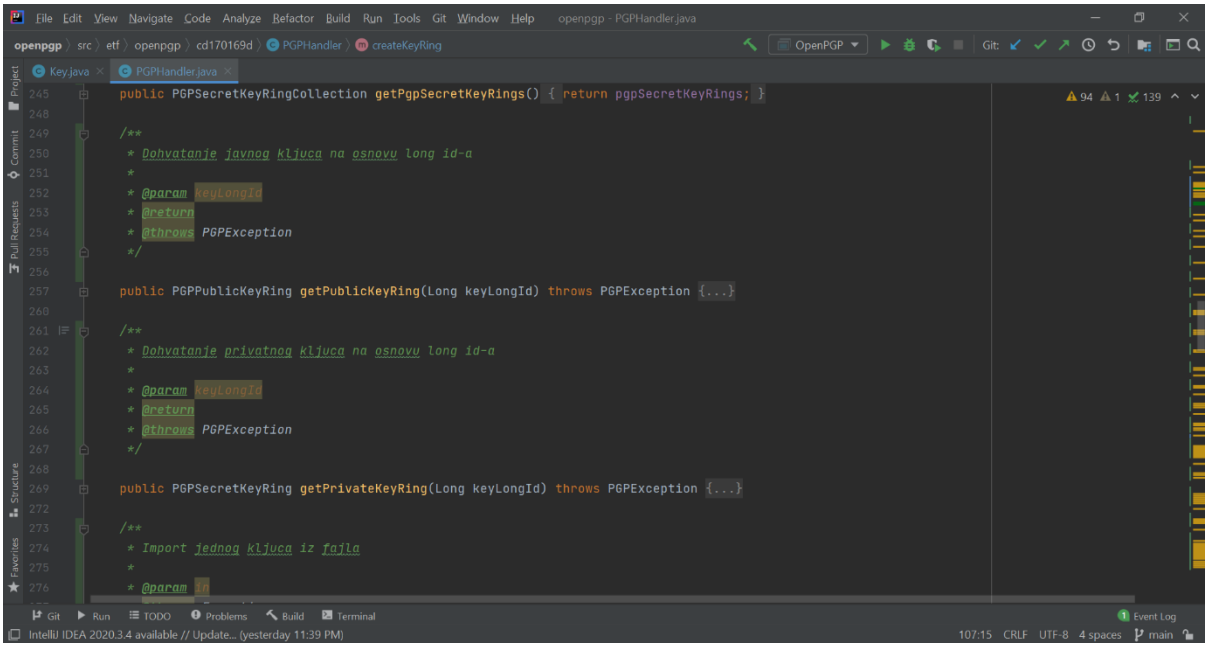
```java
package etf.openpgp.cd170169d;

import ...

/**
 * Klasa koja upravlja bouncy castle metodama (kljucevi, enkriptovanje, dekriptovanje)
 *
 */
public class PGPHandler {

    class ItemRenderer extends BasicComboBoxRenderer {...}

    private static final String RSA_ALG = "RSA";
    private static final String AES_ALG = "AES";
    private static final String DESede_ALG = "DESede";
    private static final String provider = "BC";
    private static final String stringPublicDir = "src/etf/openpgp/cd170169d/publicKeys/";
    private static final String stringPrivateDir = "src/etf/openpgp/cd170169d/privateKeys/";
    private static final int bufferSize = 16384;

    private PGPPublicKeyRingCollection pgpPublicKeyRings;
    private PGPSecretKeyRingCollection pgpSecretKeyRings;

    public PGPHandler() throws Exception {...}
```

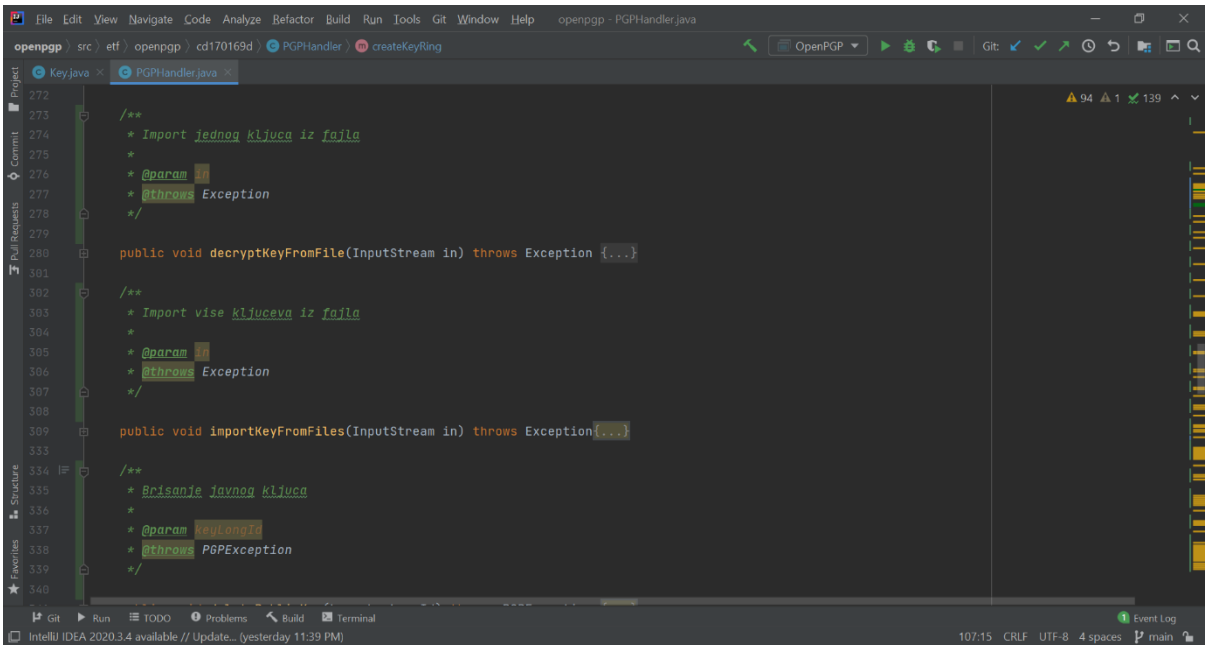


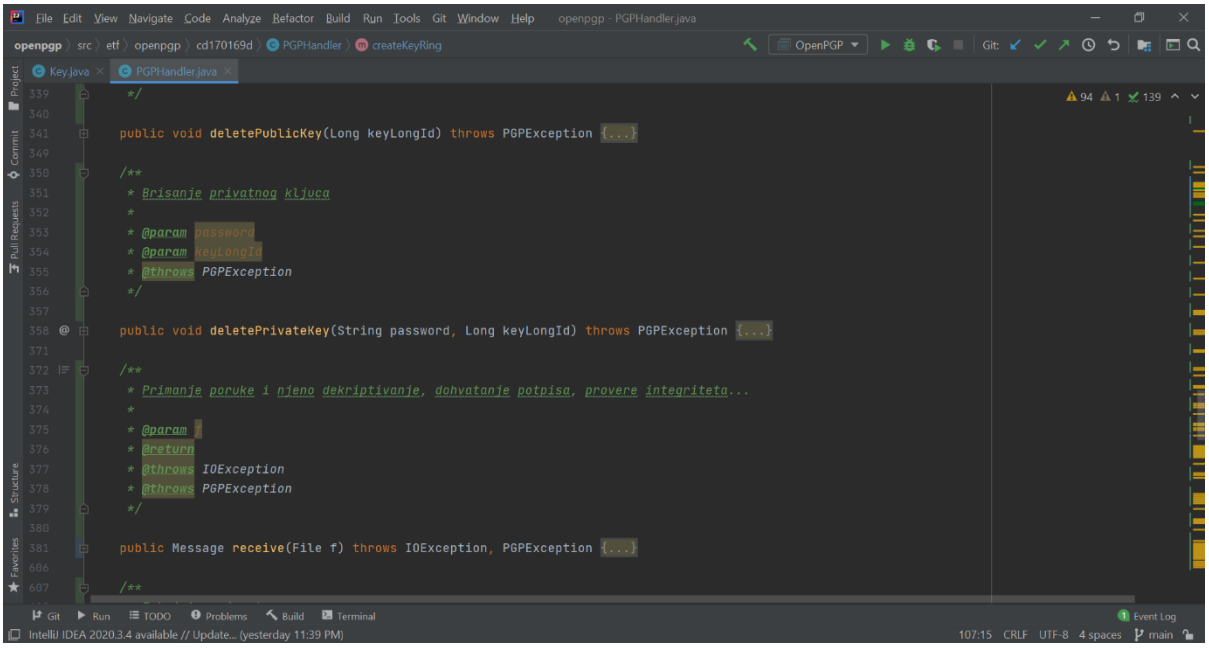
```java
    public PGPHandler() throws Exception {...}

    /**
     * Importovanje kljuceva iz fajlova prilikom pokrenja aplikacije
     *
     * @throws Exception
     */

    public void importFromDir() throws Exception {...}

    /**
     * Kreiranje key ringova
     *
     * @param name
     * @param email
     * @param password
     * @param keySize
     * @param encrypt
     * @throws NoSuchAlgorithmException
     * @throws PGPException
     * @throws NoSuchProviderException
     */

    public void createKeyRing(String name, String email, String password, int keySize, boolean encrypt)
            throws NoSuchAlgorithmException, PGPException, NoSuchProviderException {...}
```

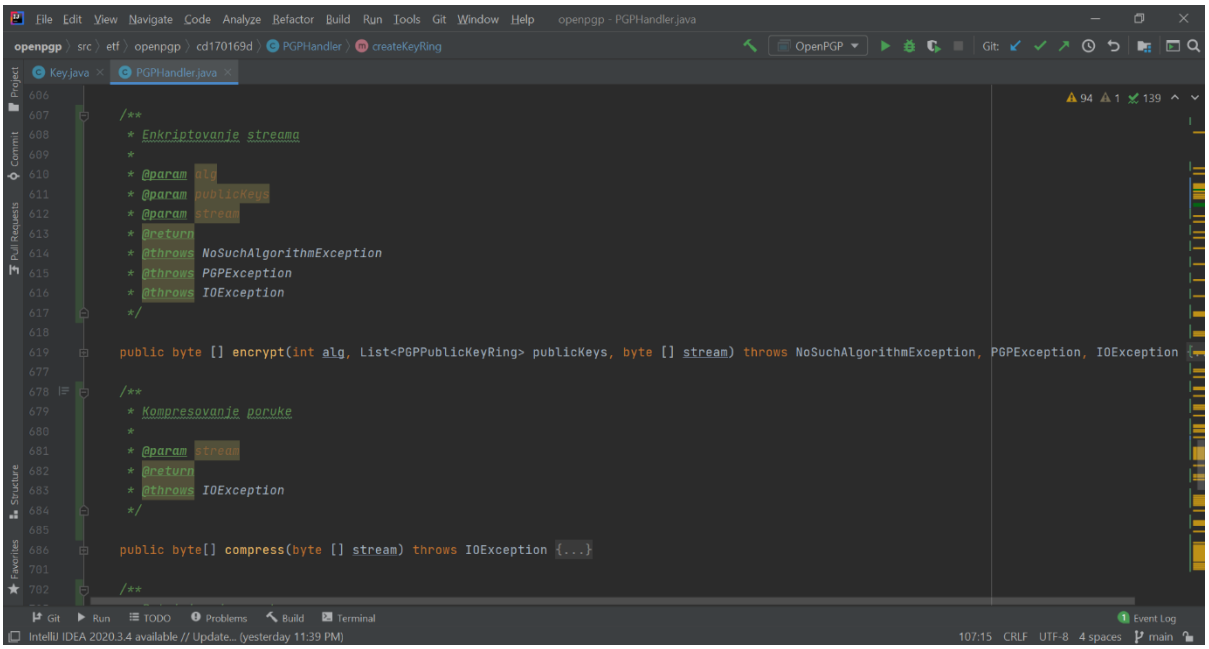

File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
throws NoSuchAlgorithmException, PGPException, NoSuchProviderException {...}
/**
* Cuvanje privatnog kljuca u fajl
*
* @param ring
*/
private void savePrivate(PGPSecretKeyRing ring) {...}
/**
* Cuvanje javnog kljuca u fajl
*
* @param ring
*/
private void savePublic(PGPPublicKeyRing ring) {...}
/**
* Dodavanje u listu javnih kljuceva
*
* @param publicKeyRing
*/
public void addToPublicKeyRings(PGPPublicKeyRing publicKeyRing) {...}
94 1 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main

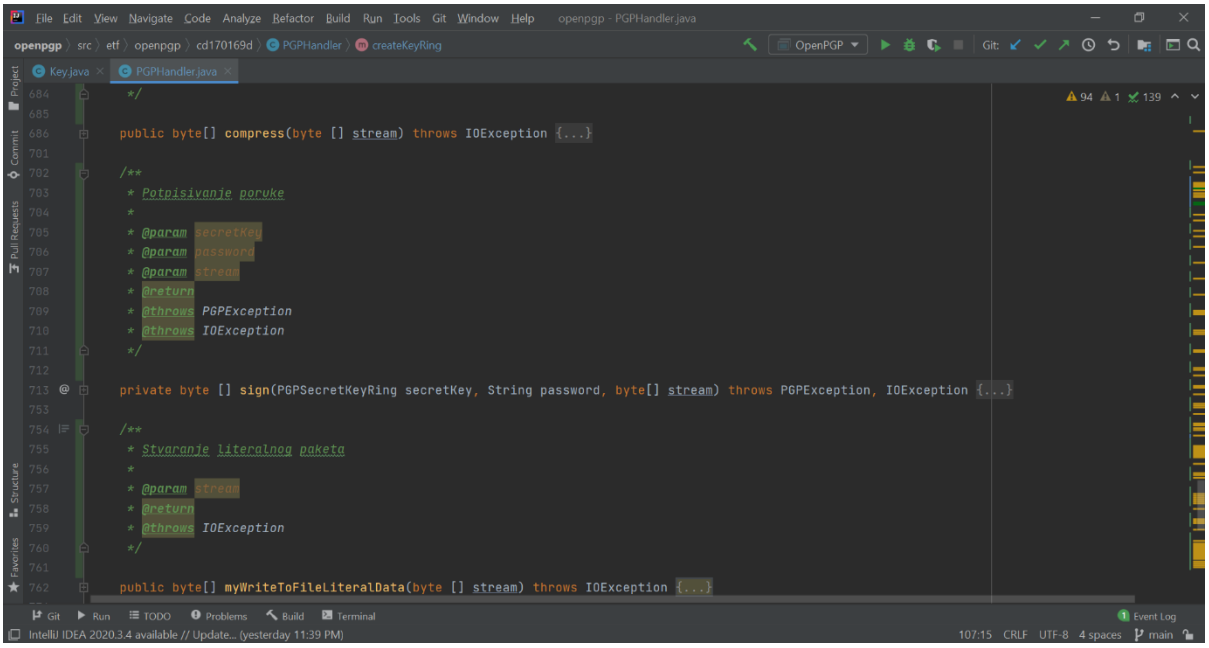

File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
public void addToPublicKeyRings(PGPPublicKeyRing publicKeyRing) {...}
/**
* Dodavanje u listu privatnih kljuceva
*
* @param secretKeyRing
*/
public void addToPrivateKeyRings(PGPSecretKeyRing secretKeyRing) {...}
/**
* Dohvatanje liste javnih kljuceva
*
* @return
*/
public PGPPublicKeyRingCollection getPgpPublicKeyRings() { return pgpPublicKeyRings; }
/**
* Dohvatanje liste privatnih kljuceva
*
* @return
*/
public PGPSecretKeyRingCollection getPgpSecretKeyRings() { return pgpSecretKeyRings; }
94 1 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main

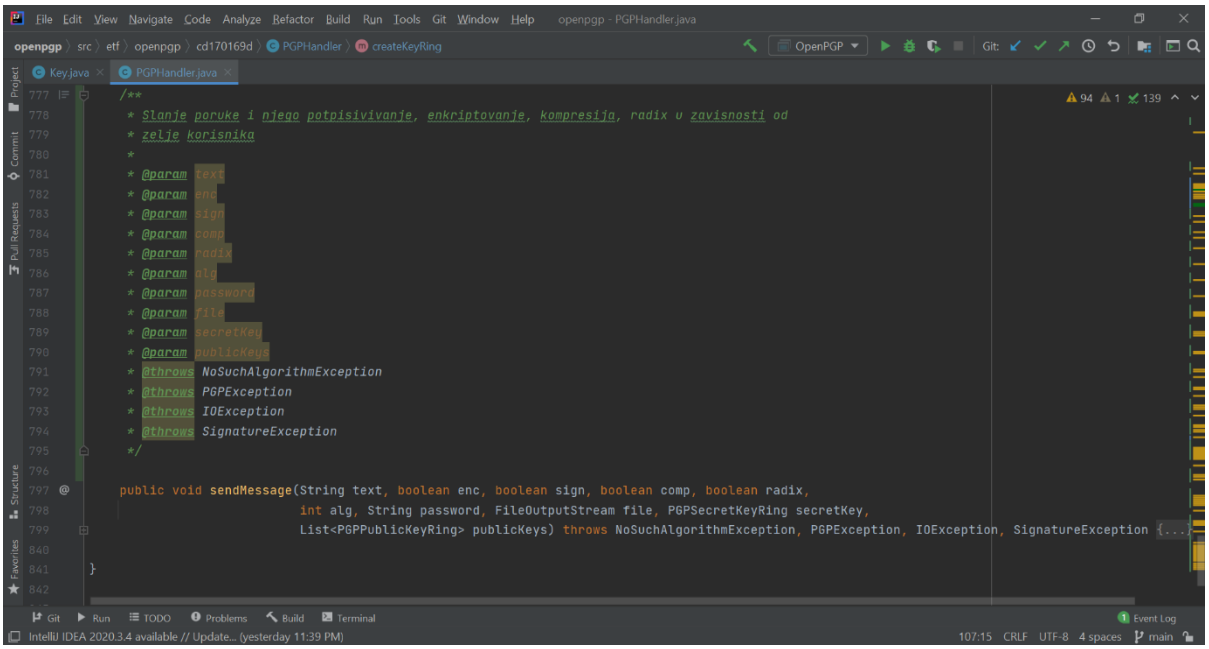

File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
public PGPSecretKeyRingCollection getPgpSecretKeyRings() { return pgpSecretKeyRings; }
/**
* Dohvatanje javnog kljuca na osnovu long id-a
*
* @param keyLongId
* @return
* @throws PGPException
*/
public PGPPublicKeyRing getPublicKeyRing(Long keyLongId) throws PGPException {...}
/**
* Dohvatanje privatnog kljuca na osnovu long id-a
*
* @param keyLongId
* @return
* @throws PGPException
*/
public PGPSecretKeyRing getPrivateKeyRing(Long keyLongId) throws PGPException {...}
/**
* Import jednog kljuca iz fajla
*
* @param in
94 1 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
/**
* Import jednog kljuca iz fajla
*
* @param in
* @throws Exception
*/
public void decryptKeyFromFile(InputStream in) throws Exception {...}
/**
* Import vise kljuceva iz fajla
*
* @param in
* @throws Exception
*/
public void importKeyFromFiles(InputStream in) throws Exception{...}
/**
* Brisanje javnog kljuca
*
* @param keyLongId
* @throws PGPException
*/
94 1 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main

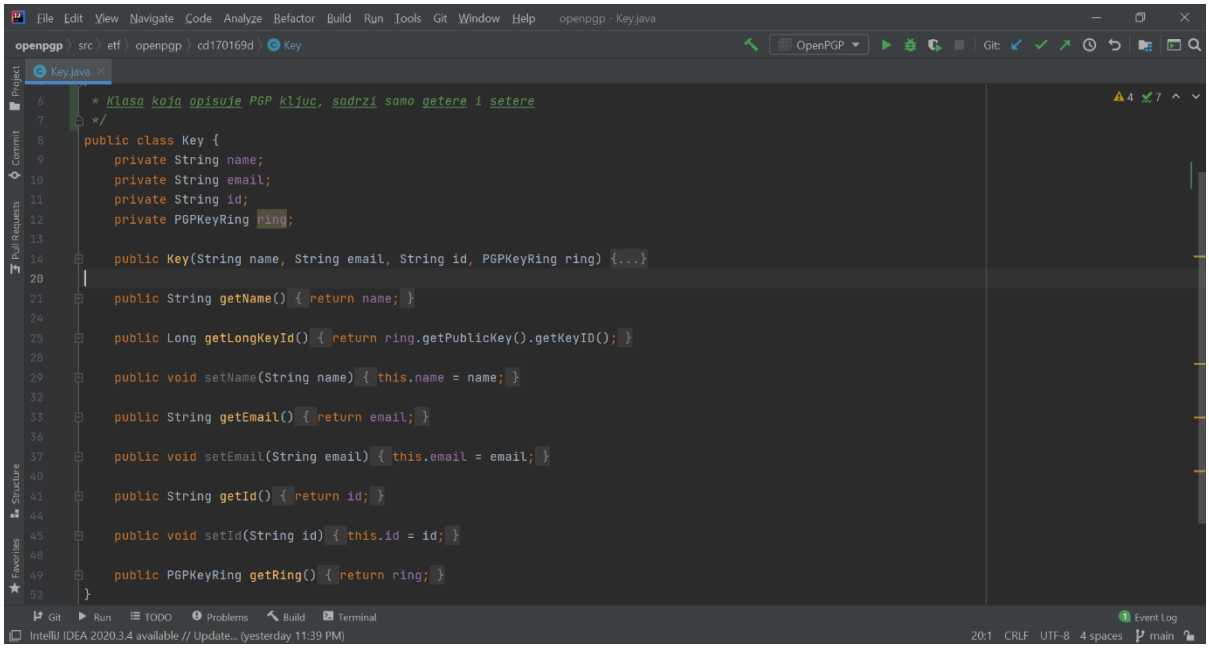

File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
94 1 139
*/
public void deletePublicKey(Long keyLongId) throws PGPException {...}
/**
* Brisanje privatnog kljuca
*
* @param password
* @param keyLongId
* @throws PGPException
*/
public void deletePrivateKey(String password, Long keyLongId) throws PGPException {...}
/**
* Primanje poruke i njeno dekriptivanje, dohvatanje potpisa, provere integriteta...
*
* @param f
* @return
* @throws IOException
* @throws PGPException
*/
public Message receive(File f) throws IOException, PGPException {...}
/**
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
94 1 139
/**
* Enkriptovanje streama
*
* @param alg
* @param publicKeys
* @param stream
* @return
* @throws NoSuchAlgorithmException
* @throws PGPException
* @throws IOException
*/
public byte [] encrypt(int alg, List<PGPPublicKeyRing> publicKeys, byte [] stream) throws NoSuchAlgorithmException, PGPException, IOException
/**
* Kompresovanje poruke
*
* @param stream
* @return
* @throws IOException
*/
public byte[] compress(byte [] stream) throws IOException {...}
/**
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main

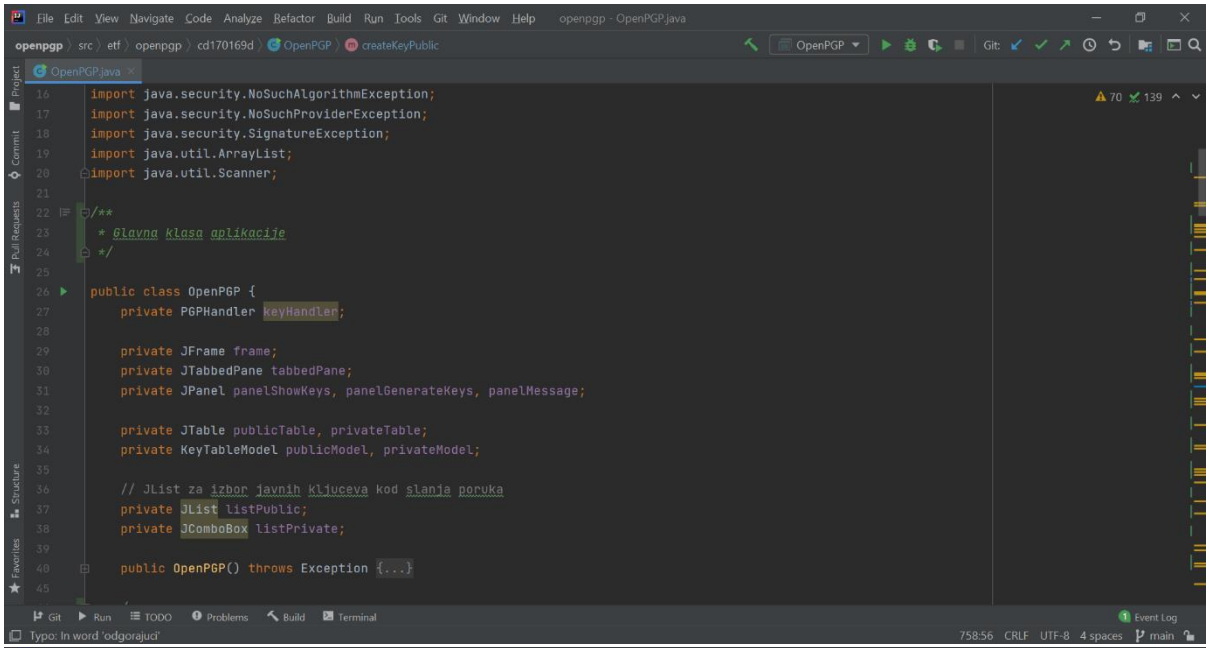

File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
94 1 139
*/
public byte[] compress(byte [] stream) throws IOException {...}
/**
* Potpisivanje poruke
*
* @param secretKey
* @param password
* @param stream
* @return
* @throws PGPException
* @throws IOException
*/
private byte [] sign(PGPSecretKeyRing secretKey, String password, byte[] stream) throws PGPException, IOException {...}
/**
* Stvaranje literalnog paketa
*
* @param stream
* @return
* @throws IOException
*/
public byte[] myWriteToFileLiteralData(byte [] stream) throws IOException {...}
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - PGPHandler.java
openpgp > src > etf > openpgp > cd170169d > PGPHandler > createKeyRing
OpenPGP
Git:
Key.java
PGPHandler.java
94 1 139
/**
* Slanje poruke i njego potpisivanje, enkriptovanje, kompresija, radix u zavisnosti od
* zelje korisnika
*
* @param text
* @param enc
* @param sign
* @param comp
* @param radix
* @param alg
* @param password
* @param file
* @param secretKey
* @param publicKeys
* @throws NoSuchAlgorithmException
* @throws PGPException
* @throws IOException
* @throws SignatureException
*/
public void sendMessage(String text, boolean enc, boolean sign, boolean comp, boolean radix,
int alg, String password, FileOutputStream file, PGPSecretKeyRing secretKey,
List<PGPPublicKeyRing> publicKeys) throws NoSuchAlgorithmException, PGPException, IOException, SignatureException {...}
}
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
107:15 CRLF UTF-8 4 spaces main

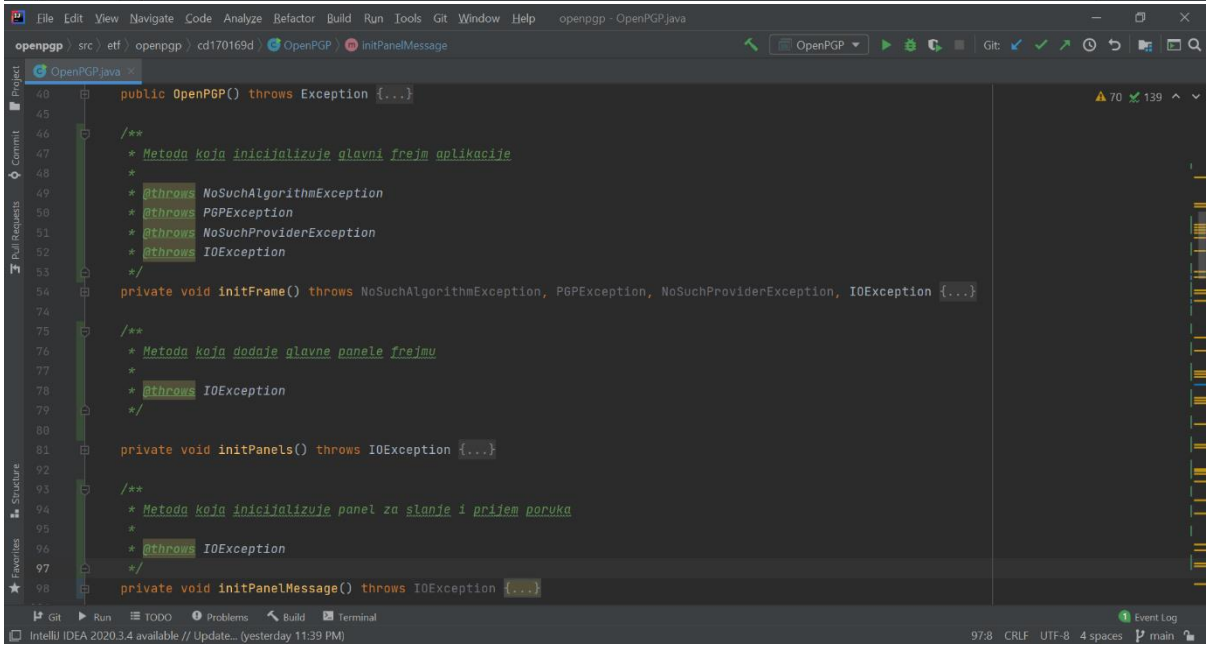
Key


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - Key.java
openpgp src etf openpgp cd170169d Key
OpenPGP
Git:
Key.java
* Klasa koja opisuje PGP kljuc, sadrzi samo getere i setere
*/
public class Key {
private String name;
private String email;
private String id;
private PGPKeyRing ring;
public Key(String name, String email, String id, PGPKeyRing ring) {...}
public String getName() { return name; }
public Long getLongKeyId() { return ring.getPublicKey().getKeyID(); }
public void setName(String name) { this.name = name; }
public String getEmail() { return email; }
public void setEmail(String email) { this.email = email; }
public String getId() { return id; }
public void setId(String id) { this.id = id; }
public PGPKeyRing getRing() { return ring; }
}
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
20:1 CRLF UTF-8 4 spaces main

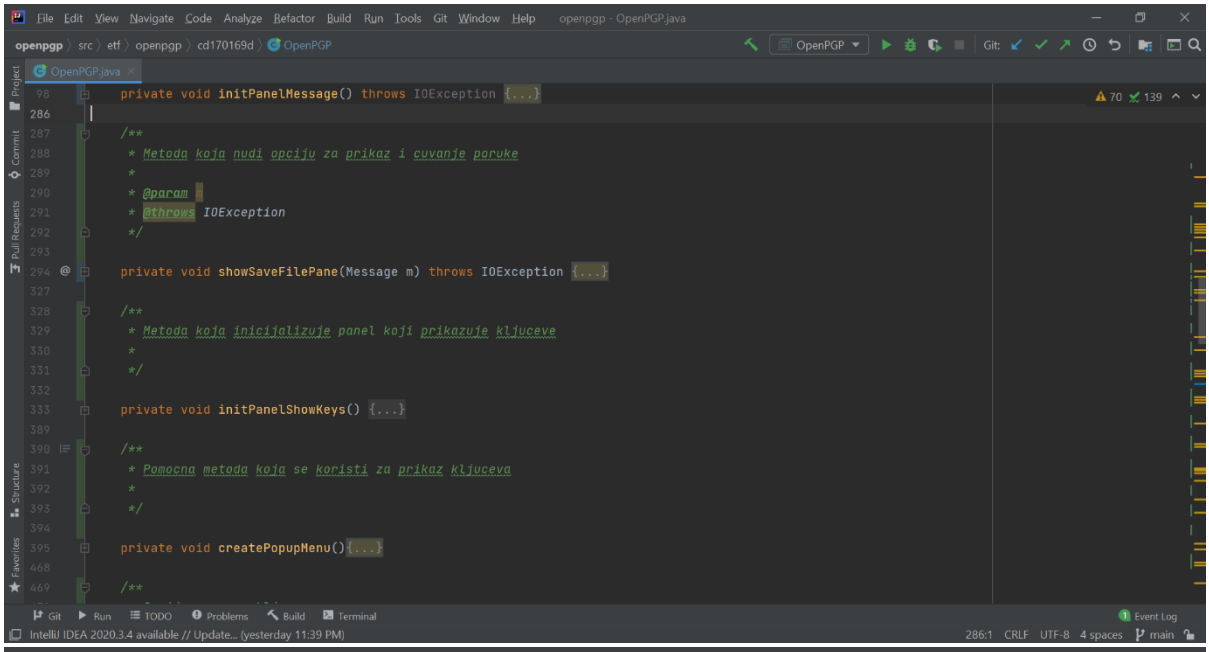
OpenPGP

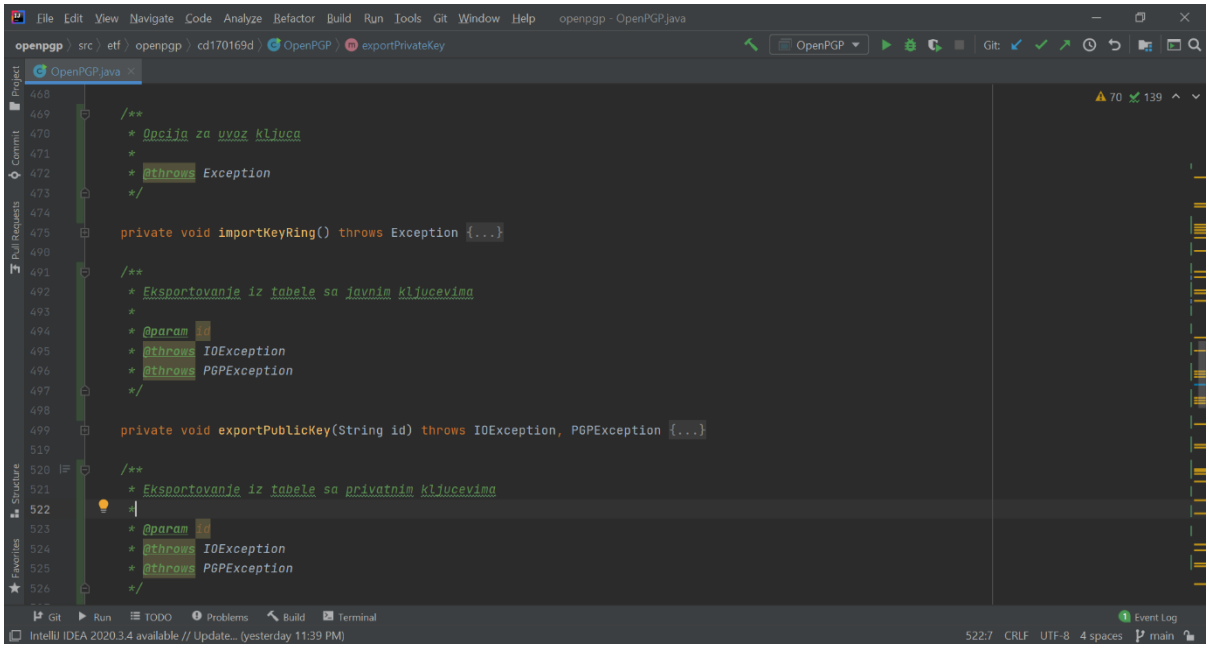


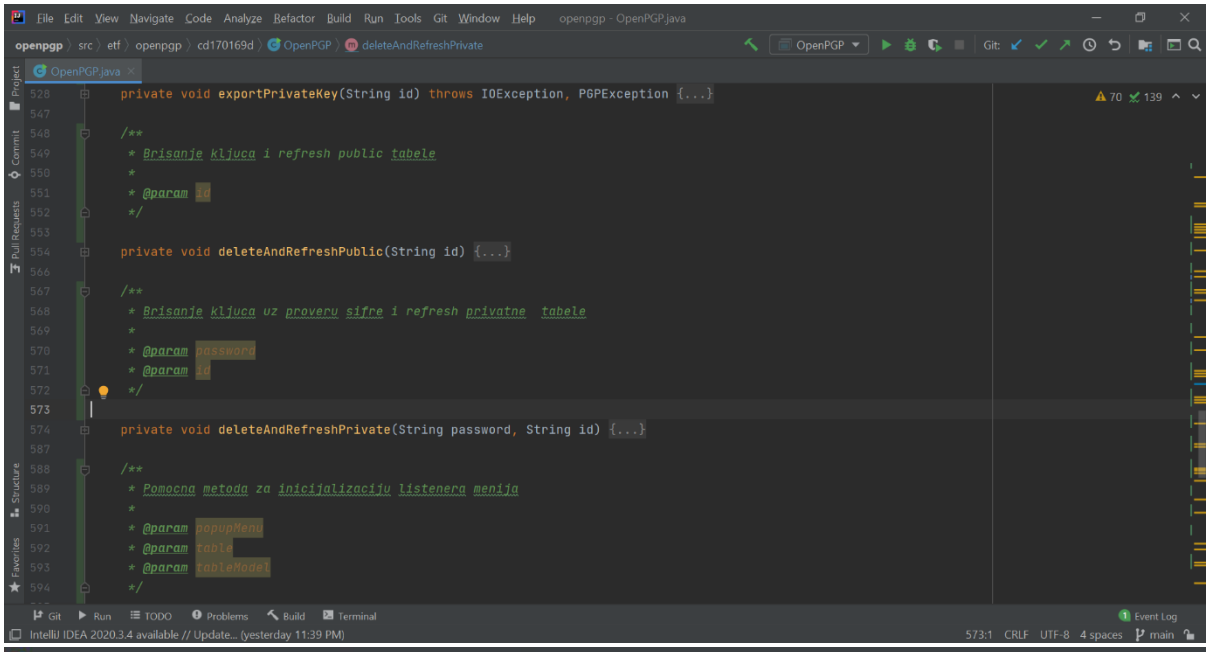
```
import java.security.NoSuchAlgorithmException;
import java.security.NoSuchProviderException;
import java.security.SignatureException;
import java.util.ArrayList;
import java.util.Scanner;

/**
 * Glavna klasa aplikacije
 */

public class OpenPGP {
    private PGPHandler keyHandler;

    private JFrame frame;
    private JTabbedPane tabbedPane;
    private JPanel panelShowKeys, panelGenerateKeys, panelMessage;

    private JTable publicTable, privateTable;
    private KeyTableModel publicModel, privateModel;

    // JList za izbor javnih kljuceva kod slanja poruka
    private JList listPublic;
    private JComboBox listPrivate;

    public OpenPGP() throws Exception {...}
```

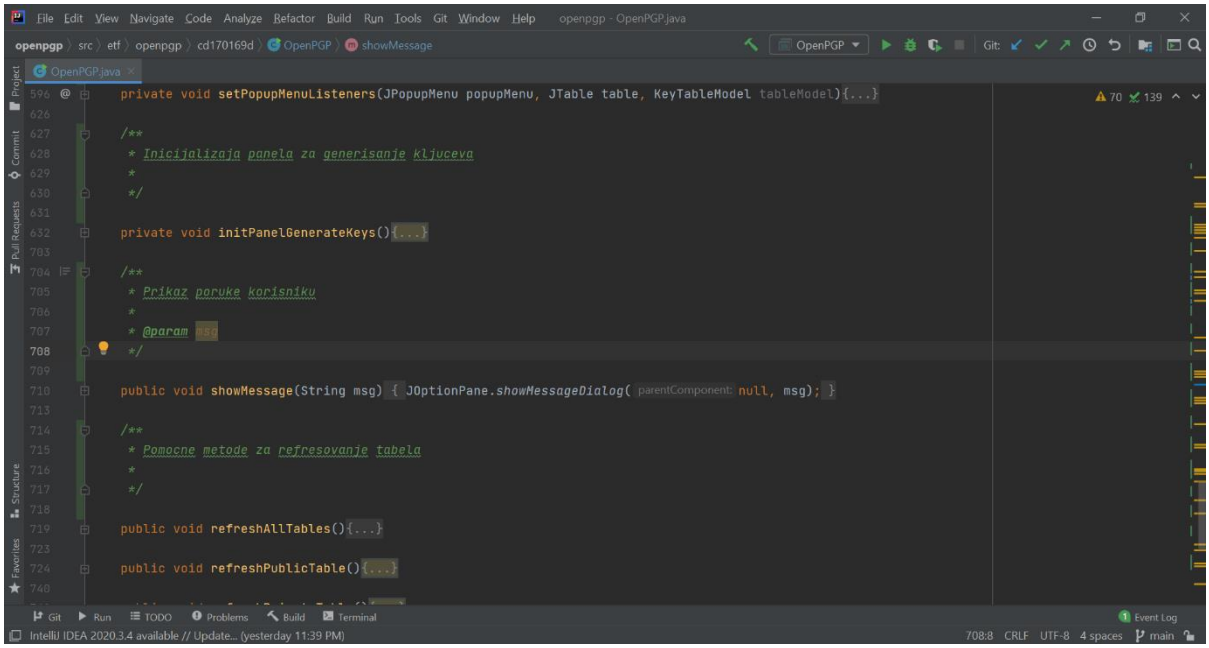


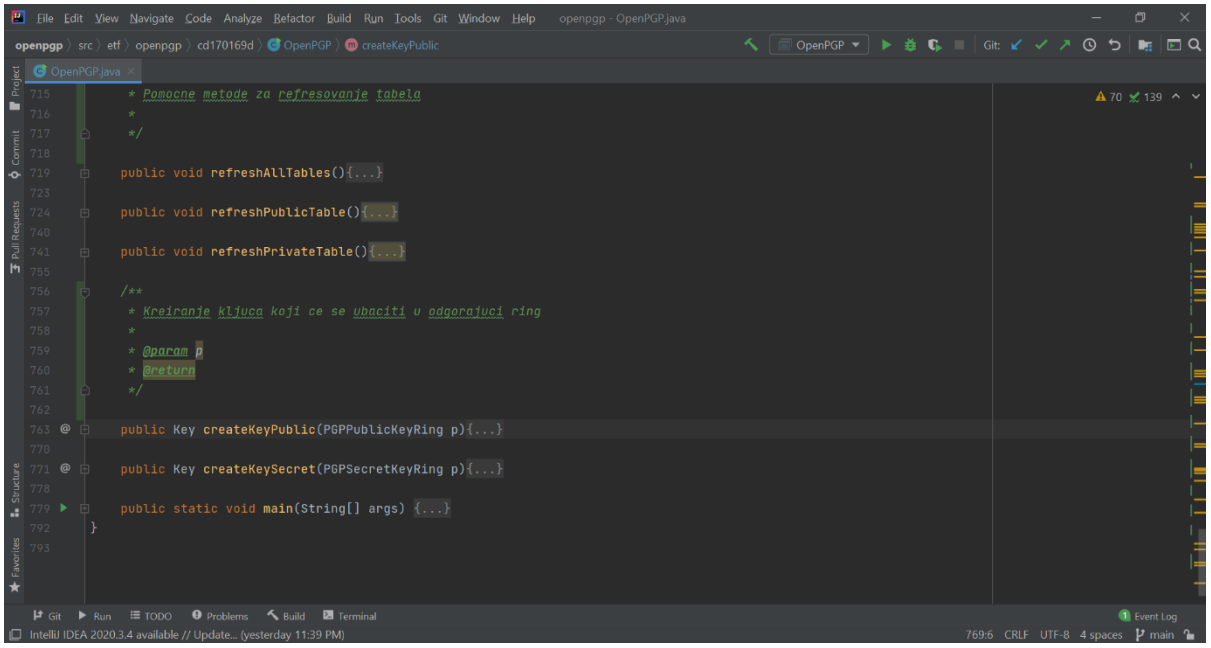
```
    public OpenPGP() throws Exception {...}

    /**
     * Metoda koja inicijalizuje glavni frejm aplikacije
     *
     * @throws NoSuchAlgorithmException
     * @throws PGPException
     * @throws NoSuchProviderException
     * @throws IOException
     */
    private void initFrame() throws NoSuchAlgorithmException, PGPException, NoSuchProviderException, IOException {...}

    /**
     * Metoda koja dodaje glavne panele frejmu
     *
     * @throws IOException
     */

    private void initPanels() throws IOException {...}

    /**
     * Metoda koja inicijalizuje panel za slanje i prijem poruka
     *
     * @throws IOException
     */
    private void initPanelMessage() throws IOException {...}
```


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - OpenPGP.java
openpgp > src > etf > openpgp > cd170169d > OpenPGP
OpenPGP
Git:
OpenPGP.java
private void initPanelMessage() throws IOException {...}
/**
* Metoda koja nudi opciju za prikaz i cuvanje poruke
*
* @param
* @throws IOException
*/
private void showSaveFilePane(Message m) throws IOException {...}
/**
* Metoda koja inicijalizuje panel koji prikazuje kljuceve
*
*/
private void initPanelShowKeys() {...}
/**
* Pomocna metoda koja se koristi za prikaz kljuceva
*
*/
private void createPopupMenu(){...}
/**
70 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
286:1 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - OpenPGP.java
openpgp > src > etf > openpgp > cd170169d > OpenPGP > exportPrivateKey
OpenPGP
Git:
OpenPGP.java
/**
* Opcija za uvoz kljuca
*
* @throws Exception
*/
private void importKeyRing() throws Exception {...}
/**
* Eksportovanje iz tabele sa javnim kljucevima
*
* @param id
* @throws IOException
* @throws PGPException
*/
private void exportPublicKey(String id) throws IOException, PGPException {...}
/**
* Eksportovanje iz tabele sa privatnim kljucevima
*
* @param id
* @throws IOException
* @throws PGPException
*/
70 139
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
522:7 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - OpenPGP.java
openpgp > src > etf > openpgp > cd170169d > OpenPGP > deleteAndRefreshPrivate
OpenPGP
Git:
OpenPGP.java
private void exportPrivateKey(String id) throws IOException, PGPException {...}
/**
* Brisanje kljuca i refresh public tabele
*
* @param id
*/
private void deleteAndRefreshPublic(String id) {...}
/**
* Brisanje kljuca uz proveru sifre i refresh privatne tabele
*
* @param password
* @param id
*/
private void deleteAndRefreshPrivate(String password, String id) {...}
/**
* Pomocna metoda za inicijalizaciju listenera menija
*
* @param popupMenu
* @param table
* @param tableModel
*/
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
573:1 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - OpenPGP.java
openpgp > src > etf > openpgp > cd170169d > OpenPGP > showMessage
OpenPGP
Git:
OpenPGP.java
private void setPopupMenuListeners(JPopupMenu popupMenu, JTable table, KeyTableModel tableModel){...}
/**
* Inicijalizaja panela za generisanje kljuceva
*
*/
private void initPanelGenerateKeys(){...}
/**
* Prikaz poruke korisniku
*
* @param msg
*/
public void showMessage(String msg) { JOptionPane.showMessageDialog(parentComponent: null, msg); }
/**
* Pomocne metode za refresovanje tabela
*
*/
public void refreshAllTables(){...}
public void refreshPublicTable(){...}
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
708:8 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - OpenPGP.java
openpgp src etf openpgp cd170169d OpenPGP createKeyPublic
OpenPGP
Git:
OpenPGP.java
* Pomocne metode za refresovanje tabela
*
*/
public void refreshAllTables(){...}
public void refreshPublicTable(){...}
public void refreshPrivateTable(){...}
/**
* Kreiranje kljuca koji ce se ubaciti u odgovarajuci ring
*
* @param p
* @return
*/
public Key createKeyPublic(PGPPublicKeyRing p){...}
public Key createKeySecret(PGPSecretKeyRing p){...}
public static void main(String[] args) {...}
}
70 139
Project
Commit
Pull Requests
Structure
Favorites
Git Run TODO Problems Build Terminal
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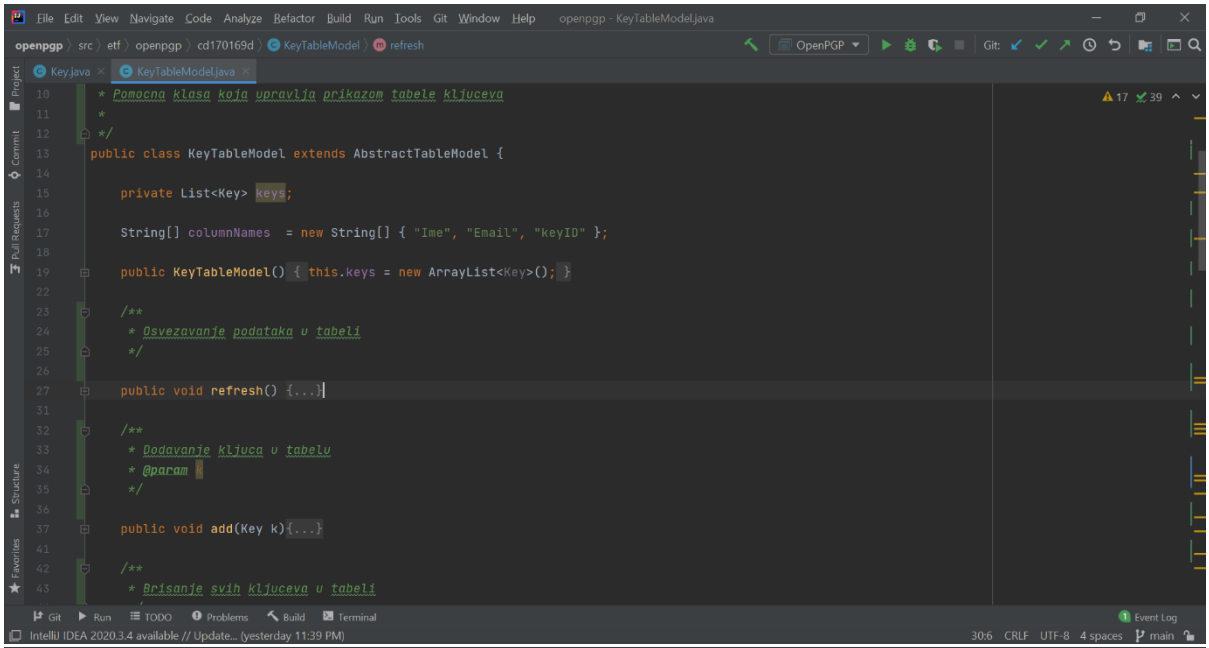
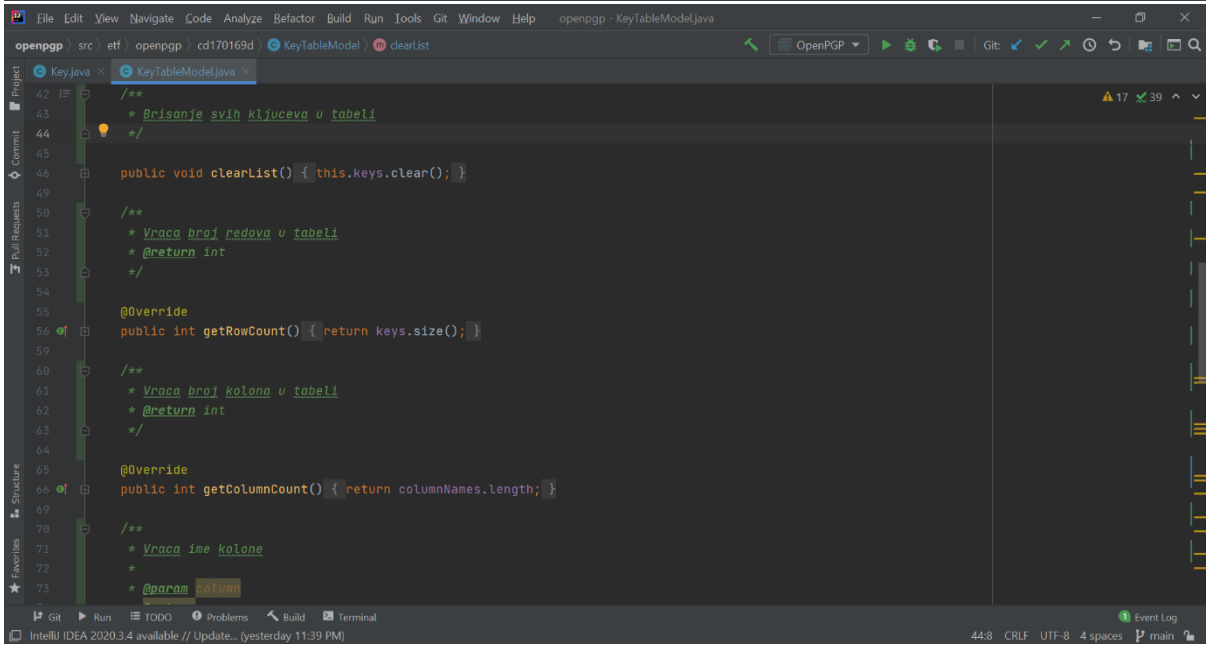
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
769:6 CRLF UTF-8 4 spaces main

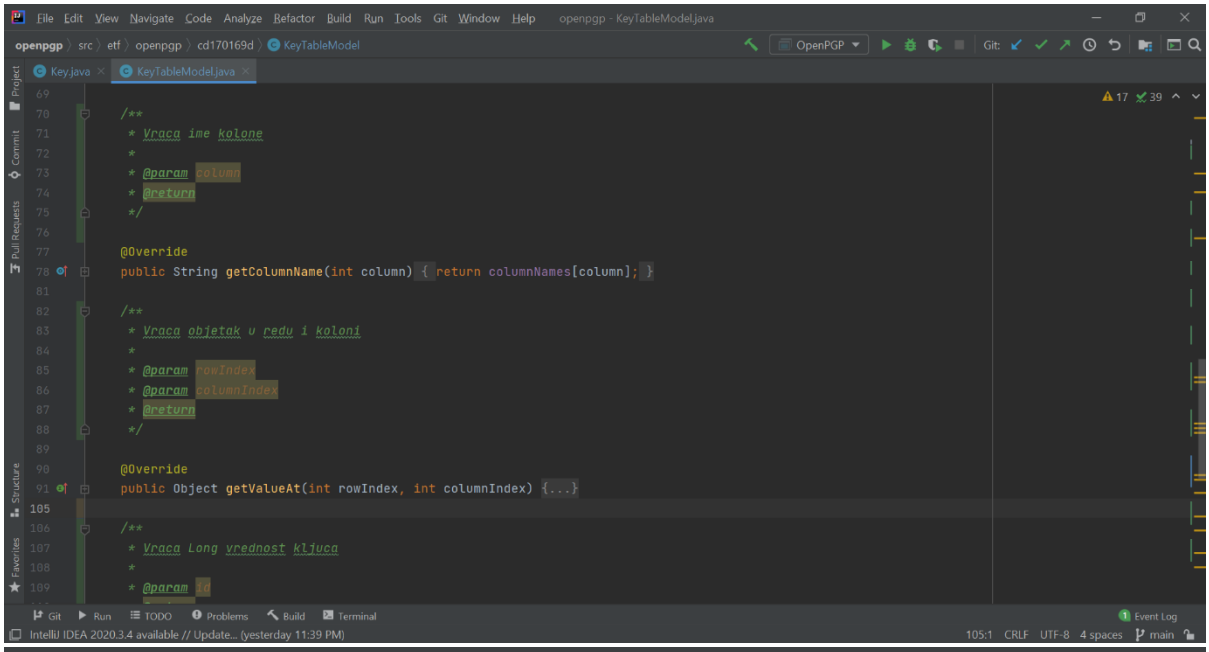
KeyTableModel

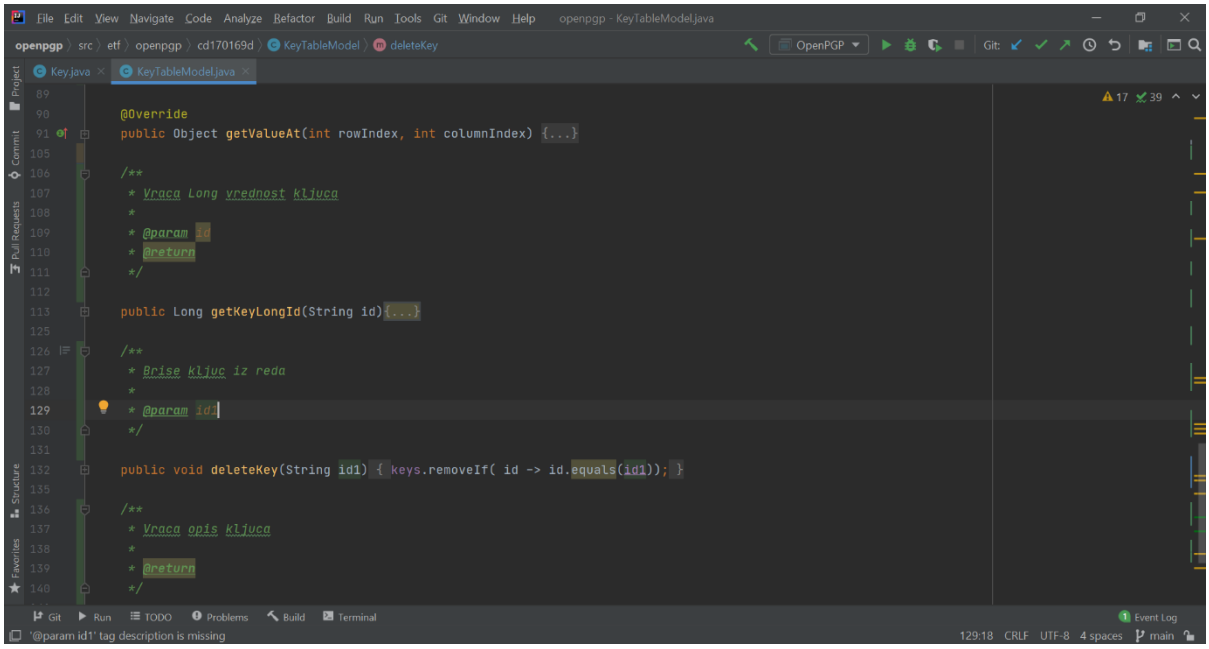


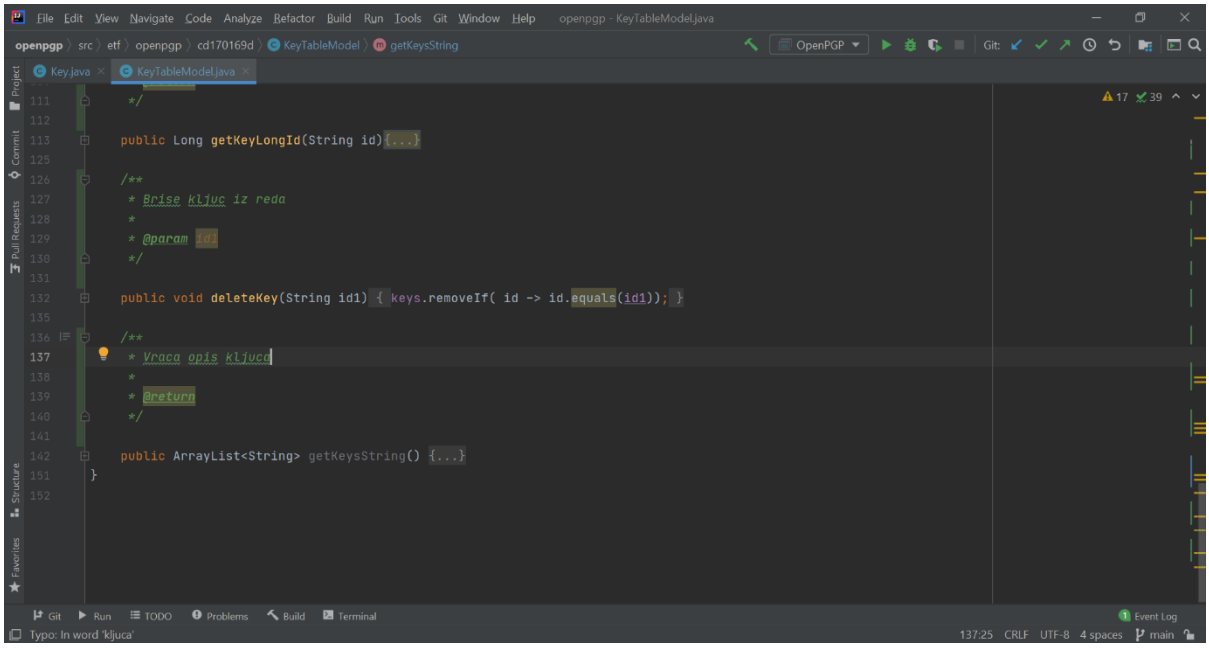
```java
/*
 * Pomocna klasa koja upravlja prikazom tabele kljuceva
 *
 */
public class KeyTableModel extends AbstractTableModel {

    private List<Key> keys;

    String[] columnNames  = new String[] { "Ime", "Email", "keyID" };

    public KeyTableModel() { this.keys = new ArrayList<Key>(); }

    /**
     * Osvezavanje podataka u tabeli
     */

    public void refresh() {...}

    /**
     * Dodavanje kljuca u tabelu
     * @param k
     */

    public void add(Key k){...}

    /**
     * Brisanje svih kljuceva u tabeli
```



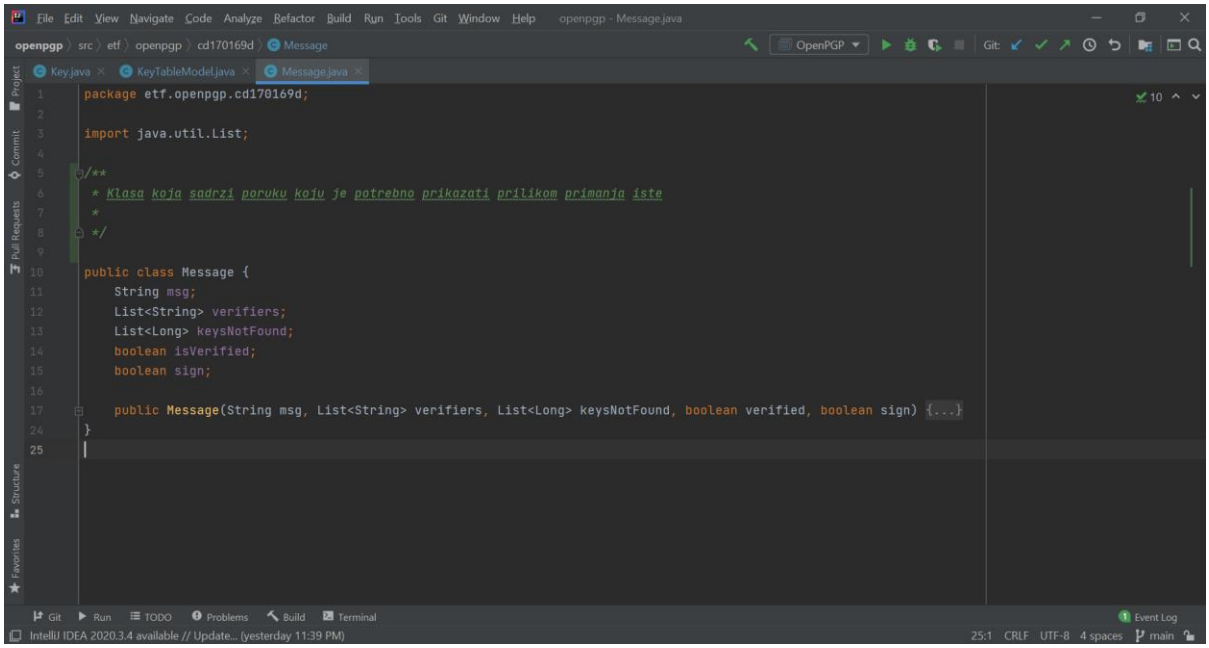
```java
    /**
     * Brisanje svih kljuceva u tabeli
     */

    public void clearList() { this.keys.clear(); }

    /**
     * Vraca broj redova u tabeli
     * @return int
     */

    @Override
    public int getRowCount() { return keys.size(); }

    /**
     * Vraca broj kolona u tabeli
     * @return int
     */

    @Override
    public int getColumnCount() { return columnNames.length; }

    /**
     * Vraca ime kolone
     *
     * @param column
```


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - KeyTableModel.java
openpgp > src > etf > openpgp > cd170169d > KeyTableModel
OpenPGP
Git:
Key.java
KeyTableModel.java
17 39
/**
* Vraca ime kolone
*
* @param column
* @return
*/
@Override
public String getColumnName(int column) { return columnNames[column]; }
/**
* Vraca objetak u redu i koloni
*
* @param rowIndex
* @param columnIndex
* @return
*/
@Override
public Object getValueAt(int rowIndex, int columnIndex) {...}
/**
* Vraca Long vrednost kljuca
*
* @param id
Git Run TODO Problems Build Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
105:1 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - KeyTableModel.java
openpgp > src > etf > openpgp > cd170169d > KeyTableModel > deleteKey
OpenPGP
Git:
Key.java
KeyTableModel.java
17 39
@Override
public Object getValueAt(int rowIndex, int columnIndex) {...}
/**
* Vraca Long vrednost kljuca
*
* @param id
* @return
*/
public Long getKeyLongId(String id){...}
/**
* Brise kljuc iz reda
*
* @param id1
*/
public void deleteKey(String id1) { keys.removeIf(id -> id.equals(id1)); }
/**
* Vraca opis kljuca
*
* @return
*/
Git Run TODO Problems Build Terminal
Event Log
'@param id1' tag description is missing
129:18 CRLF UTF-8 4 spaces main


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - KeyTableModel.java
openpgp src etf openpgp cd170169d KeyTableModel getKeysString
OpenPGP
Git:
Key.java
KeyTableModel.java
*/
public Long getKeyLongId(String id){...}
/**
* Brise kljuc iz reda
*
* @param id1
*/
public void deleteKey(String id1) { keys.removeIf(id -> id.equals(id1)); }
/**
* Vraca opis kljuca
*
* @return
*/
public ArrayList<String> getKeysString() {...}
}
17 39
Project
Commit
Pull Requests
Structure
Favorites
Git Run TODO Problems Build Terminal
Event Log
Typo: In word 'kljuca'
137:25 CRLF UTF-8 4 spaces main

Message


File Edit View Navigate Code Analyze Refactor Build Run Tools Git Window Help
openpgp - Message.java
openpgp src etf openpgp cd170169d Message
OpenPGP
Git:
Key.java
KeyTableModel.java
Message.java
package etf.openpgp.cd170169d;
import java.util.List;
/**
* Klasa koja sadrzi poruku koju je potrebno prikazati prilikom primanja iste
*
*/
public class Message {
String msg;
List<String> verifiers;
List<Long> keysNotFound;
boolean isVerified;
boolean sign;
public Message(String msg, List<String> verifiers, List<Long> keysNotFound, boolean verified, boolean sign) {...}
}
Project
Commit
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Run
TODO
Problems
Build
Terminal
Event Log
IntelliJ IDEA 2020.3.4 available // Update... (yesterday 11:39 PM)
25:1 CRLF UTF-8 4 spaces main