

Laporan Hasil Praktikum

Pemrograman Desktop



Tugas 14

ALYA AIMAN SALSABILA ARIF

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Tingkat III Rekayasa Perangkat Lunak Kripto

Politeknik Siber dan Sandi Negara

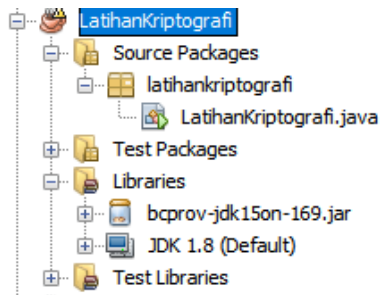
2020/2021

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1. Praktikum

Buat proyek baru dengan nama LatihanKriptografi. Tambahkan *library* yang sudah diunduh



Masukkan *source code* berikut pada kelas LatihanKriptografi

```
LatihanKriptografi.java x
Source History
1  ...5 lines
6  package latihankriptografi;
7
8  import ...10 lines
18
19  /**...4 lines */
23  public class LatihanKriptografi {
24
25  /**...3 lines */
26      public static void main(String[] args) throws InvalidKeyException, ShortBufferException,
27          IllegalBlockSizeException, BadPaddingException, NoSuchAlgorithmException,
28          NoSuchProviderException, NoSuchPaddingException {
31          // TODO code application logic here
32          Security.addProvider(new org.bouncycastle.jce.provider.BouncyCastleProvider());
33          byte[] input = "Alya Aiman".getBytes();
34          byte[] keyBytes = new byte[] { 0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x07,
35              0x08, 0x09, 0x0a, 0x0b, 0x0c, 0x0d, 0x0e, 0x0f };
36
37          SecretKeySpec key = new SecretKeySpec(keyBytes, "AES");
38
39          Cipher cipher = Cipher.getInstance("AES/ECB/PKCS7Padding", "BC");
40
41          System.out.println(new String(input));
42
43          // encryption pass
44          cipher.init(Cipher.ENCRYPT_MODE, key);
45
```

```

46     byte[] cipherText = new byte[cipher.getOutputSize(input.length)];
47     int ctLength = cipher.update(input, 0, input.length, cipherText, 0);
48     ctLength += cipher.doFinal(cipherText, ctLength);
49     System.out.println(new String(cipherText));
50     System.out.println(ctLength);
51
52     // decryption pass
53     cipher.init(Cipher.DECRYPT_MODE, key);
54     byte[] plainText = new byte[cipher.getOutputSize(ctLength)];
55     int ptLength = cipher.update(cipherText, 0, ctLength, plainText, 0);
56     ptLength += cipher.doFinal(plainText, ptLength);
57     System.out.println(new String(plainText));
58     System.out.println(ptLength);
59 }
60
61 }

```

Jalankan program. Berikut hasil yang ditampilkan

```

: Output - LatihanKriptografi (run)
run:
Alya Aiman
(0z0lj0>0000A00
16
Alya Aiman
10
BUILD SUCCESSFUL (total time: 10 seconds)

```

2. Studi Kasus

Buat basis data baru dengan nama stokbarang dan tabel dengan nama stokbarang dan user

```

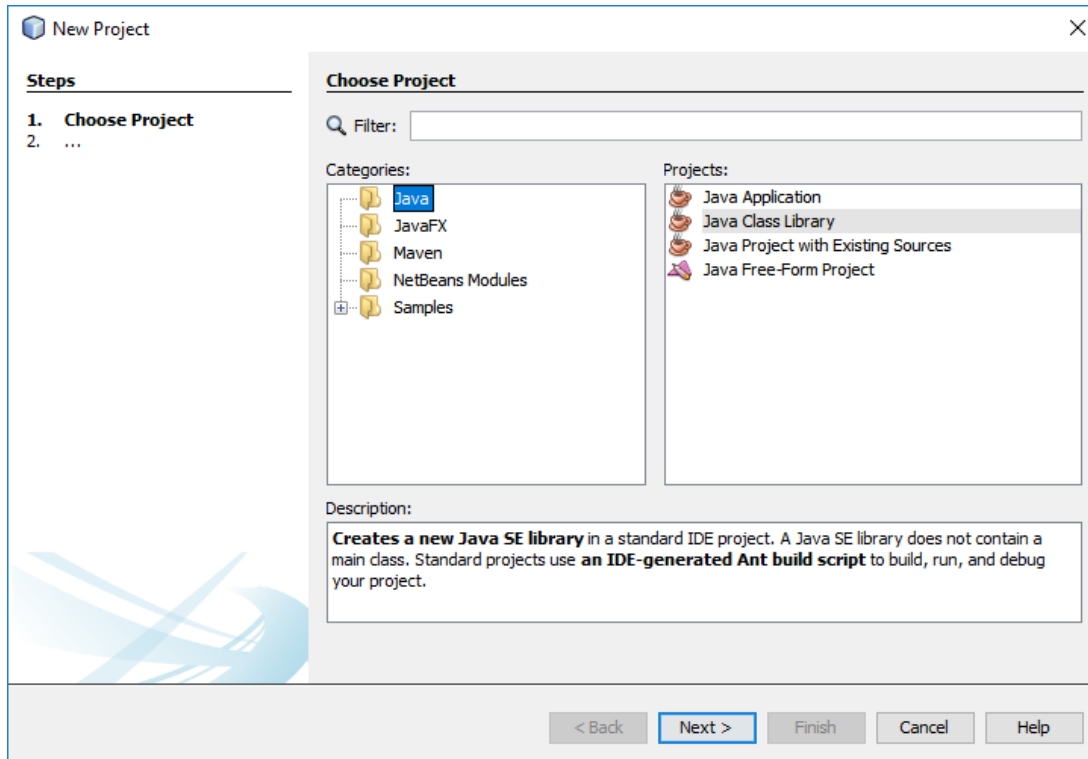
MariaDB [(none)]> create database stokbarang;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> use stokbarang;
Database changed
MariaDB [stokbarang]> create table stokbarang (kode int(10) not null primary key auto_increment,
-> nama varchar(25) not null,
-> jumlah int(10) not null);
Query OK, 0 rows affected (0.676 sec)

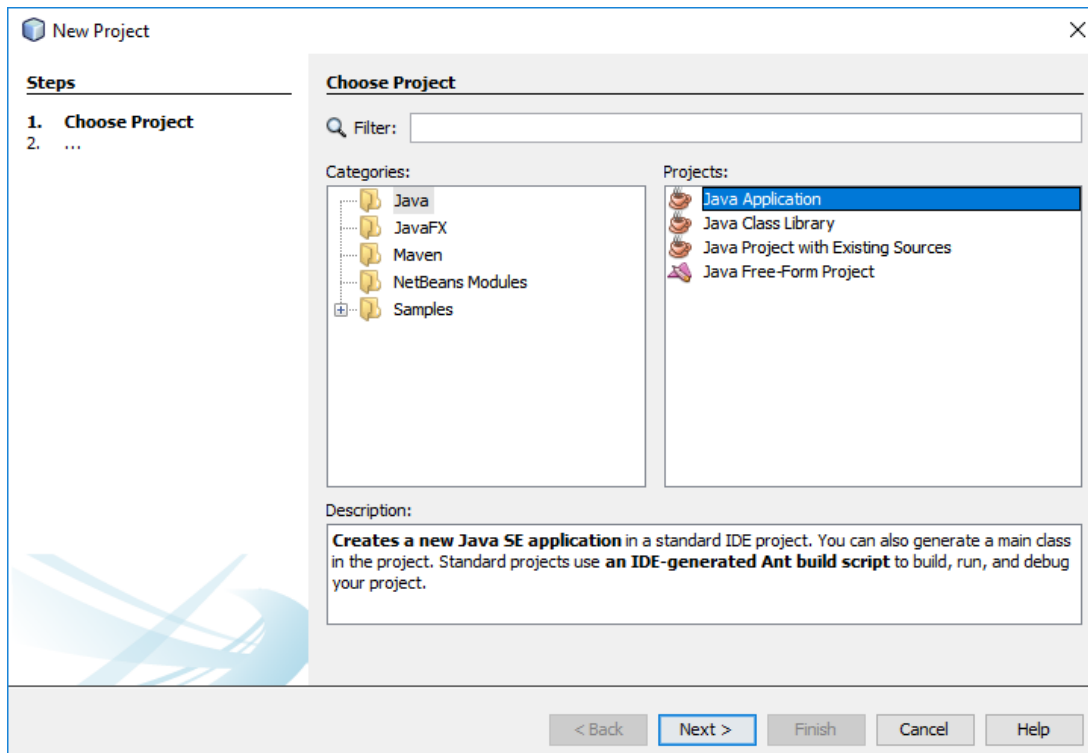
MariaDB [stokbarang]> create table user (id int(11) not null primary key auto_increment,
-> username varchar(30) not null,
-> password varchar(30) not null);
Query OK, 0 rows affected (0.223 sec)

```

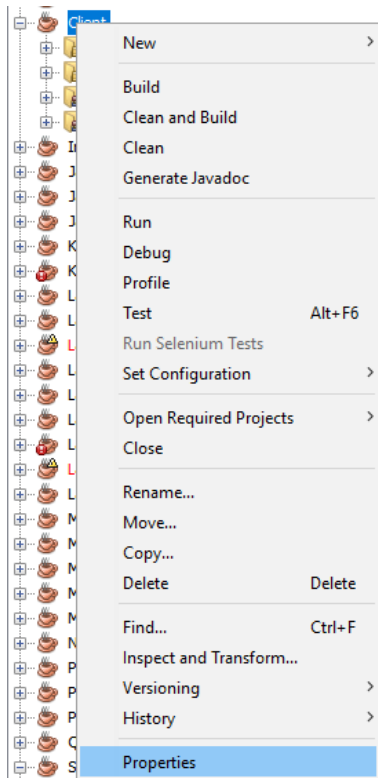
Buat proyek *Java Class Library* dengan nama *Komunikasi.api* sebagai penghubung antara *client* dan *server*



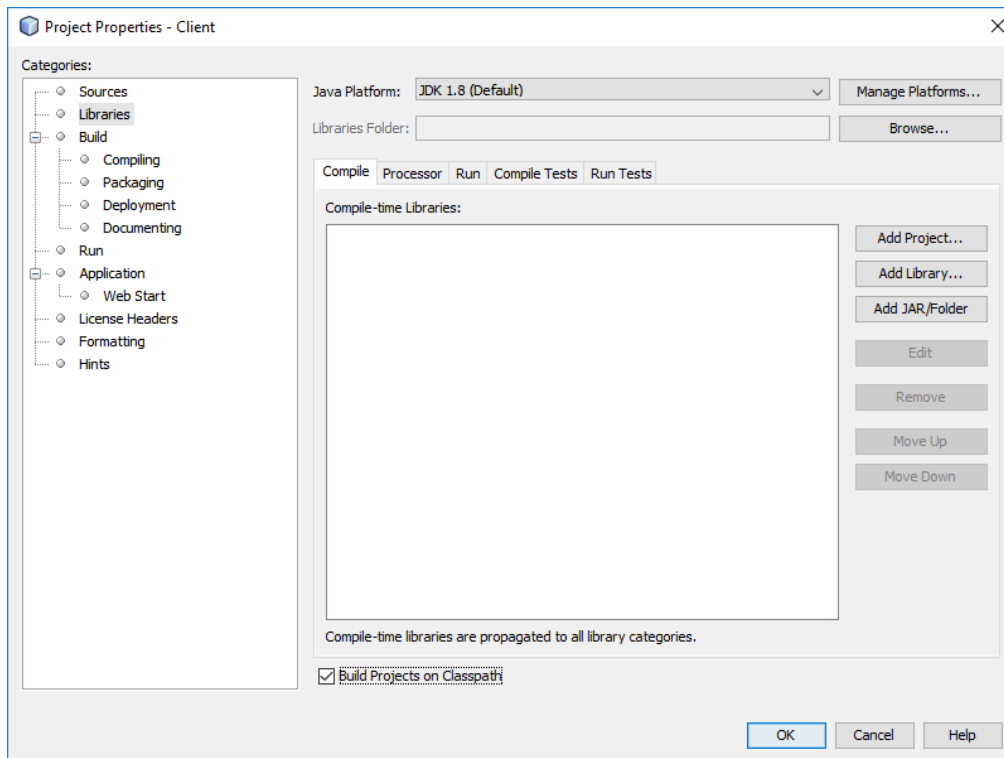
Buat proyek *Java Application* dengan nama *Server dan Client*



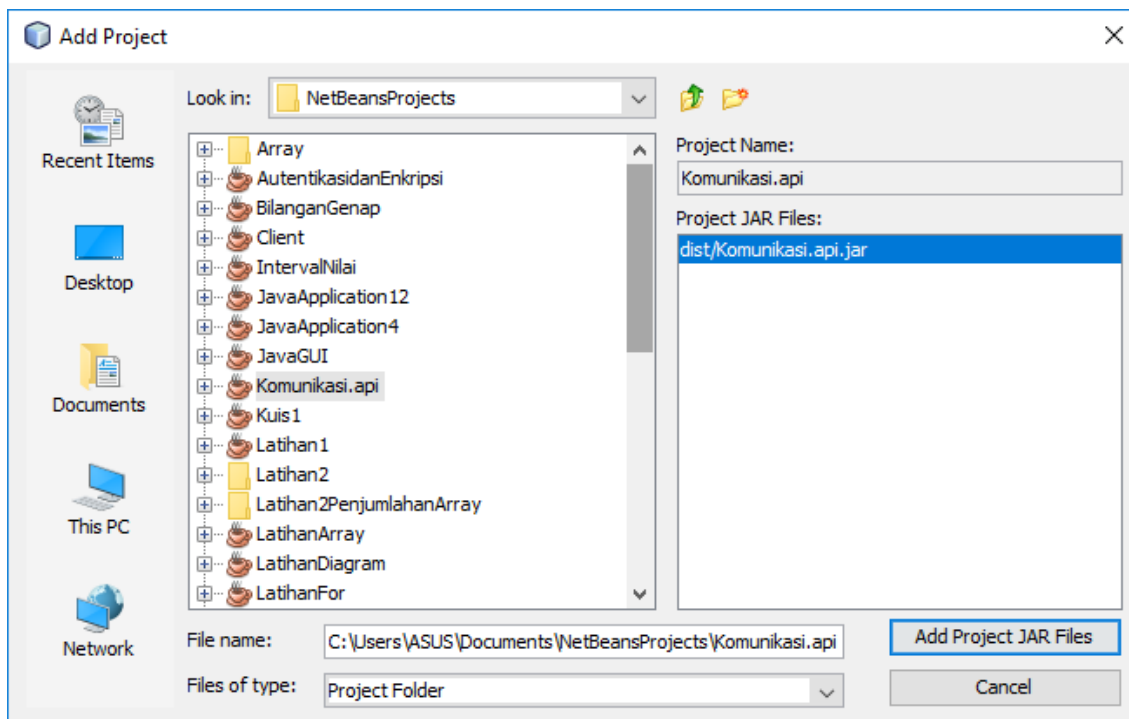
Untuk menghubungkan antara *client* dan *server* klik kanan pada *project* Client kemudian pilih *Properties* pada proyek Server dan Client



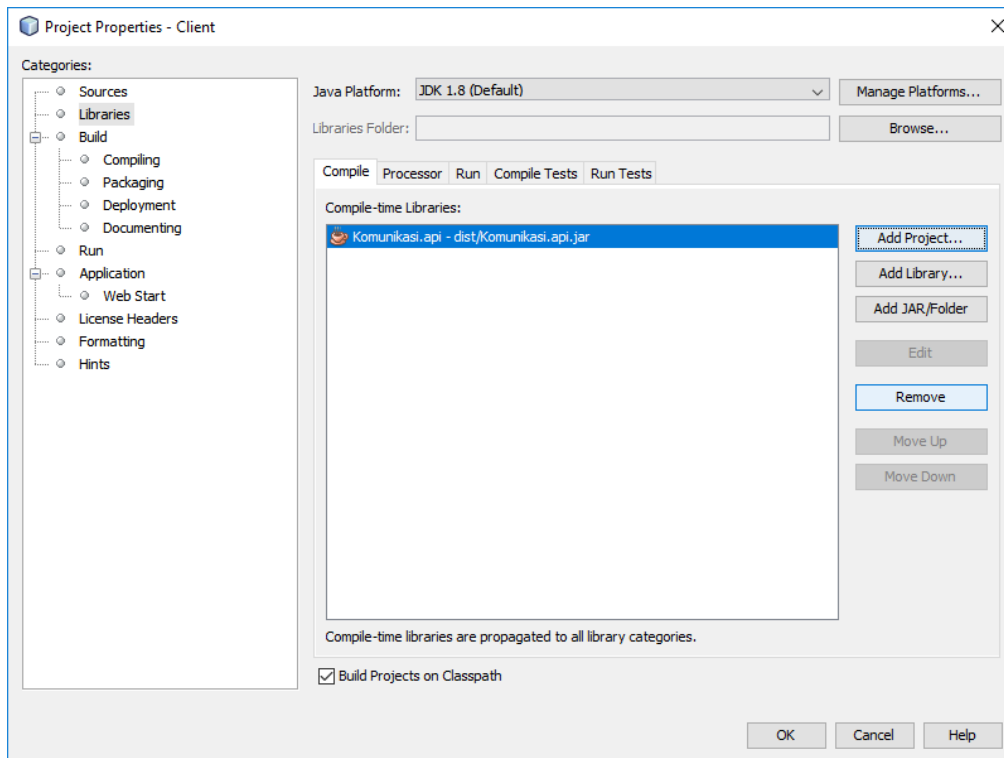
Berikut tampilan yang dihasilkan. Pilih *Libraries* -> *Add Project*



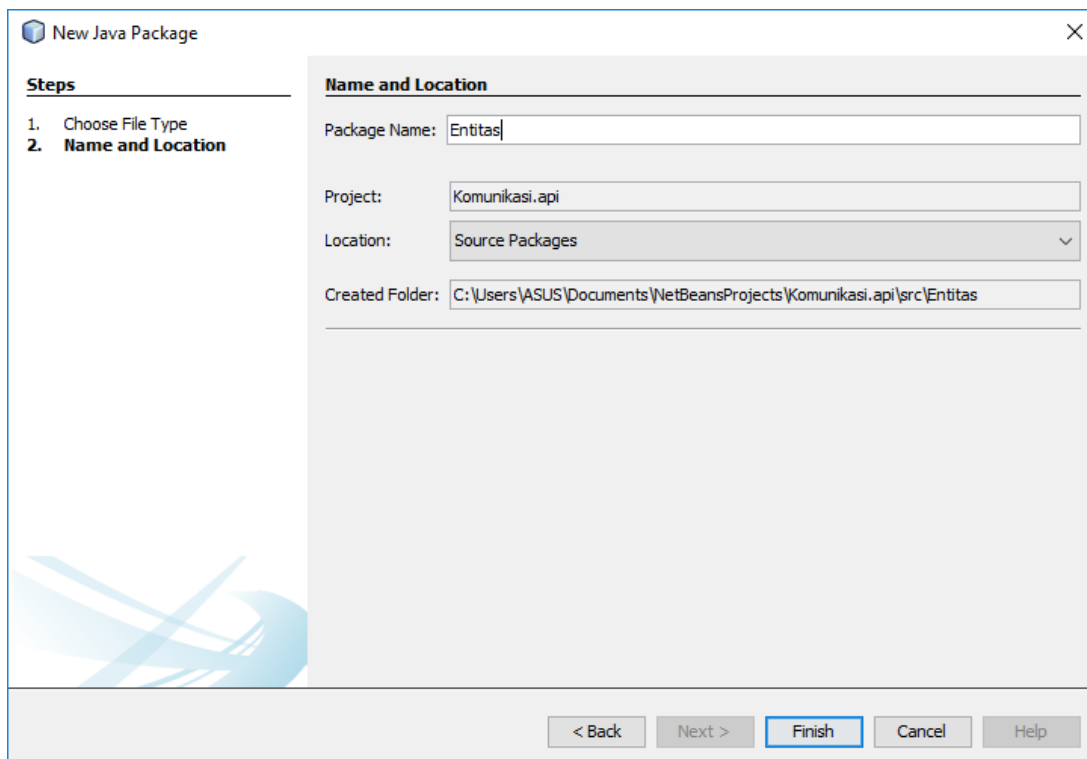
Pilih *project* Komunikasi.api yang sudah dibuat sebelumnya kemudian pilih *Add Project JAR Files*



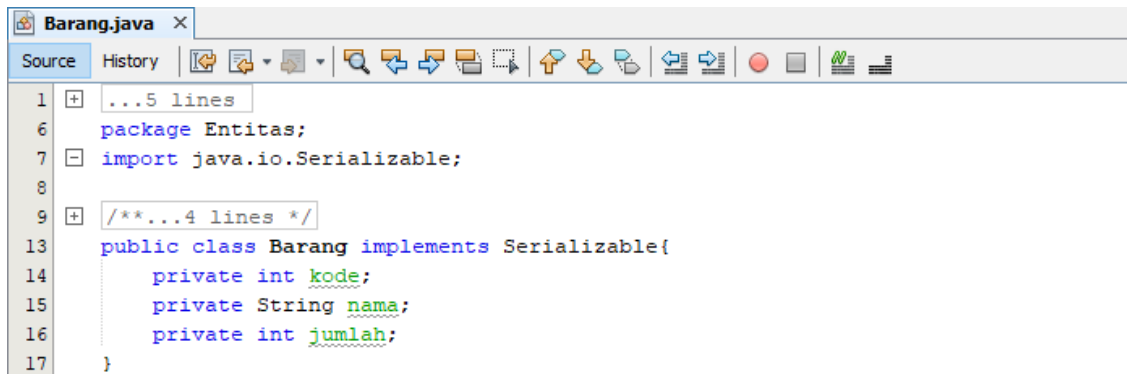
Klik *OK*



Buat *package* dengan nama Entitas pada proyek Komunikasi.api

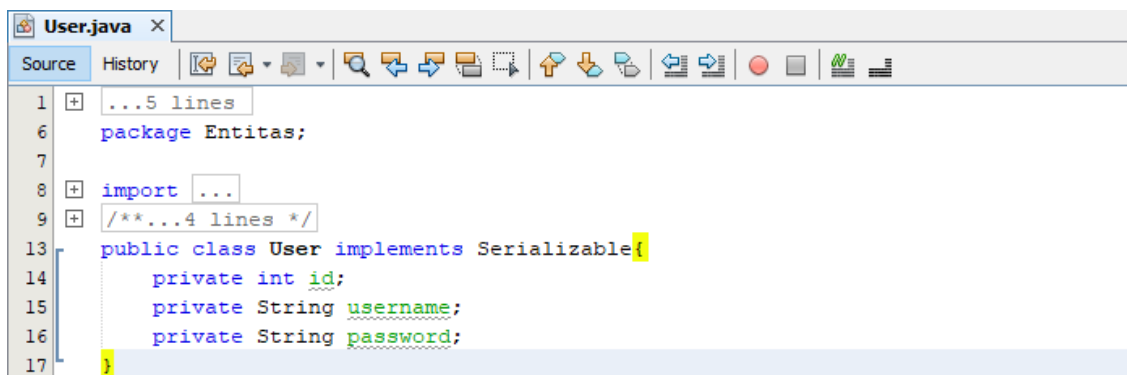


Buat kelas Barang dan masukkan *source code* berikut pada kelas Barang



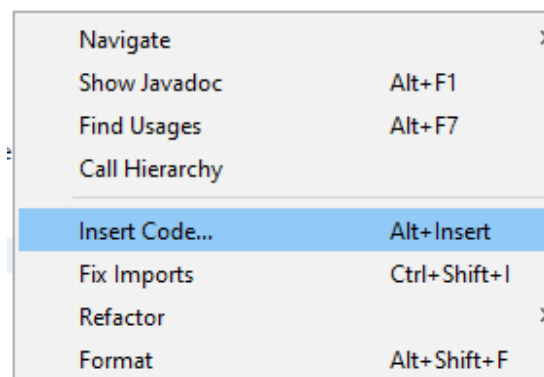
```
1  ...5 lines
6  package Entitas;
7  import java.io.Serializable;
8
9  /**...4 lines */
13 public class Barang implements Serializable{
14     private int kode;
15     private String nama;
16     private int jumlah;
17 }
```

Buat kelas User dan masukkan *source code* berikut pada kelas User

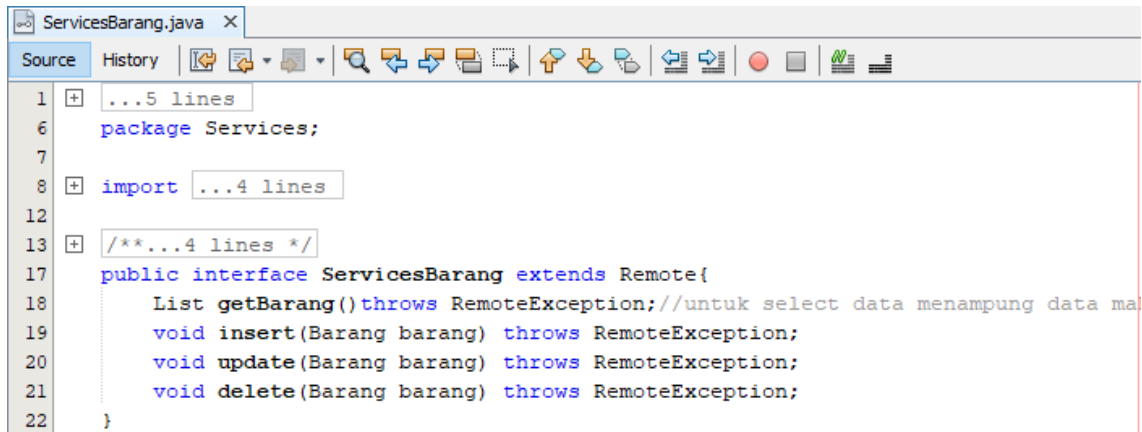


```
1  ...5 lines
6  package Entitas;
7
8  import ...
9  /**...4 lines */
13 public class User implements Serializable{
14     private int id;
15     private String username;
16     private String password;
17 }
```

Klik kanan pada dua kelas tersebut kemudian pilih *Insert Code*. Kemudian pilih *Getter and Setter*

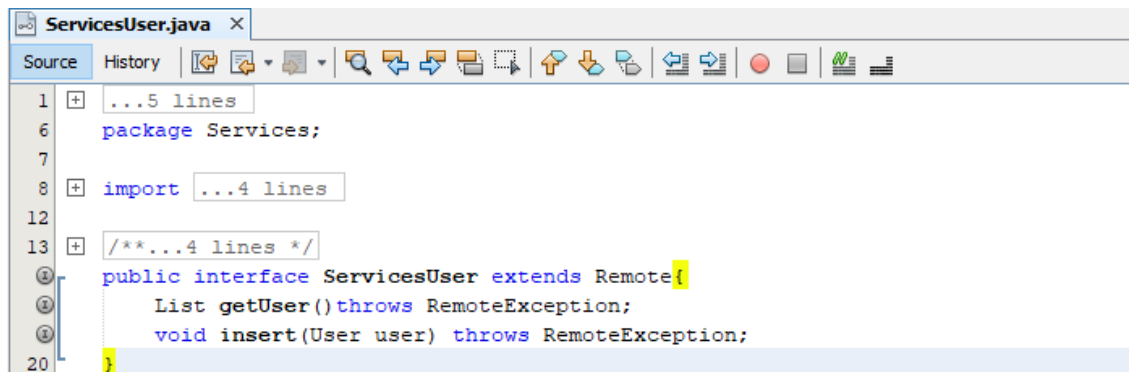


Pada *project* Komunikasi.api, buat *package* baru dengan nama Services. Buat *Interface* ServicesBarang dan ServicesUser. Masukkan *source code* berikut pada *interface* ServicesBarang




```
1  ...5 lines
6  package Services;
7
8  import ...4 lines
12
13  /**...4 lines */
17  public interface ServicesBarang extends Remote{
18      List getBarang() throws RemoteException; //untuk select data menampung data ma
19      void insert(Barang barang) throws RemoteException;
20      void update(Barang barang) throws RemoteException;
21      void delete(Barang barang) throws RemoteException;
22  }
```

Masukkan *source code* berikut pada *interface* ServicesUser



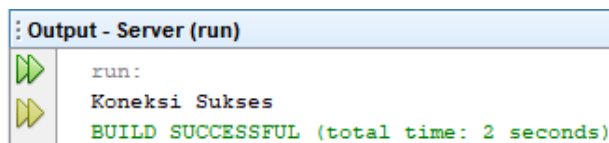
```
1  ...5 lines
6  package Services;
7
8  import ...4 lines
12
13  /**...4 lines */
14  public interface ServicesUser extends Remote{
15      List getUser() throws RemoteException;
16      void insert(User user) throws RemoteException;
20  }
```

Buat *package* dengan nama Koneksi pada proyek Server dan buat kelas Koneksi pada *package* tersebut. Masukkan *source code* berikut pada kelas Koneksi



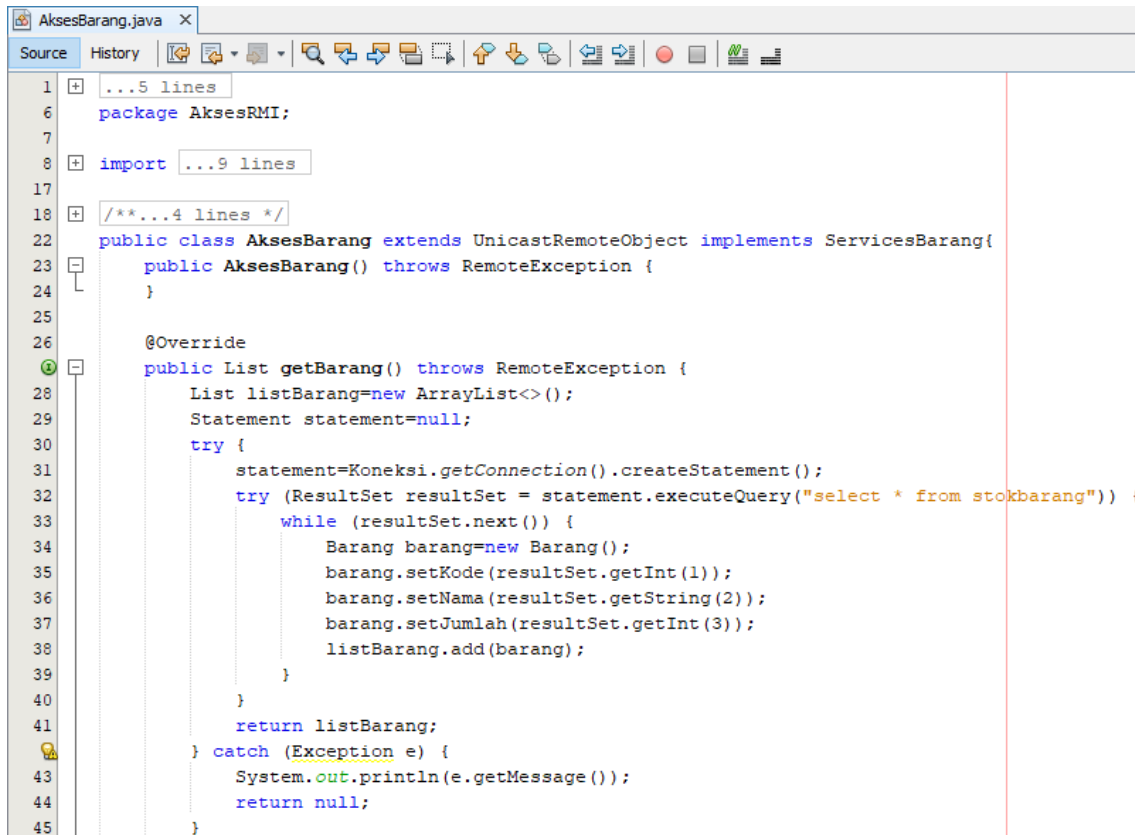
```
1  ...5 lines
6  package Koneksi;
7
8  import ...2 lines
9
10
11  /**...4 lines */
12
13  public class Koneksi {
14
15      private static Connection connection=null;
16
17
18      public static Connection getConnection() {
19          try {
20              Class.forName("com.mysql.jdbc.Driver").newInstance();
21              connection=DriverManager.getConnection("jdbc:mysql://localhost/stokbarang","root","");
22              System.out.println("Koneksi Sukses");
23          } catch (Exception e) {
24              System.out.println(e.getMessage());
25          }
26          return connection;
27      }
28
29      public static void main(String[] args) {
30          Koneksi.getConnection();
31      }
32  }
```

Jalankan kelas Koneksi jika koneksi sukses maka muncul tampilan seperti berikut



```
Output - Server (run)
run:
Koneksi Sukses
BUILD SUCCESSFUL (total time: 2 seconds)
```

Buat *package* baru pada proyek Server dengan nama *package* AksesRMI yang berisi kelas baru AksesBarang dan AksesUser. Masukkan *source code* berikut pada kelas AksesBarang



```
1  ...5 lines
6  package AksesRMI;
7
8  import ...9 lines
17
18  /**...4 lines */
22  public class AksesBarang extends UnicastRemoteObject implements ServicesBarang{
23      public AksesBarang() throws RemoteException {
24      }
25
26      @Override
27      public List getBarang() throws RemoteException {
28          List listBarang=new ArrayList<>();
29          Statement statement=null;
30          try {
31              statement=Koneksi.getConnection().createStatement();
32              try (ResultSet resultSet = statement.executeQuery("select * from stokbarang")) {
33                  while (resultSet.next()) {
34                      Barang barang=new Barang();
35                      barang.setKode(resultSet.getInt(1));
36                      barang.setNama(resultSet.getString(2));
37                      barang.setJumlah(resultSet.getInt(3));
38                      listBarang.add(barang);
39                  }
40              }
41              return listBarang;
42          } catch (Exception e) {
43              System.out.println(e.getMessage());
44              return null;
45          }
```

```

46         finally{
47             if (statement!=null) {
48                 try {
49                     statement.close();
50                 } catch (Exception e) {
51                 }
52             }
53         }
54     }
55
56     @Override
57     public void insert(Barang barang) throws RemoteException {
58         //throw new UnsupportedOperationException("Not supported yet."); //To change body of ge
59         Statement statement=null;
60         try {
61             statement= Koneksi.getConnection().createStatement();
62             statement.executeUpdate("insert into stokbarang values ('"+barang.getKode()+"'
63             + ", '"+barang.getNama()+"', '"+barang.getJumlah()+"')");
64         } catch (Exception e) {
65             System.out.println(e.getMessage());
66         }
67     }finally{
68         if (statement!=null) {
69             try {
70                 statement.close();
71             } catch (Exception e) {
72             }
73         }
74     }
75
76
77     @Override
78     public void update(Barang barang) throws RemoteException {
79         //throw new UnsupportedOperationException("Not supported yet."); //To change body of generat
80         Statement statement=null;
81         try {
82             statement=Koneksi.getConnection().createStatement();
83             statement.executeUpdate("update stokbarang set nama='"+barang.getNama() +
84             "', jumlah='"+barang.getJumlah()+"'where kode='"+barang.getKode()+"'");
85         } catch (Exception e) {
86             System.out.println(e.getMessage());
87         }
88     }finally{
89         if (statement!=null) {
90             try {
91                 statement.close();
92             } catch (Exception e) {
93             }
94         }
95     }
96
97
98
99
100     @Override
101     public void delete(Barang barang) throws RemoteException {
102         // throw new UnsupportedOperationException("Not supported yet."); //To change body of genera
103         Statement statement=null;
104         try {
105             statement=Koneksi.getConnection().createStatement();
106             statement.executeUpdate("delete from stokbarang where kode='"+barang.getKode()+"'");
107         } catch (Exception e) {

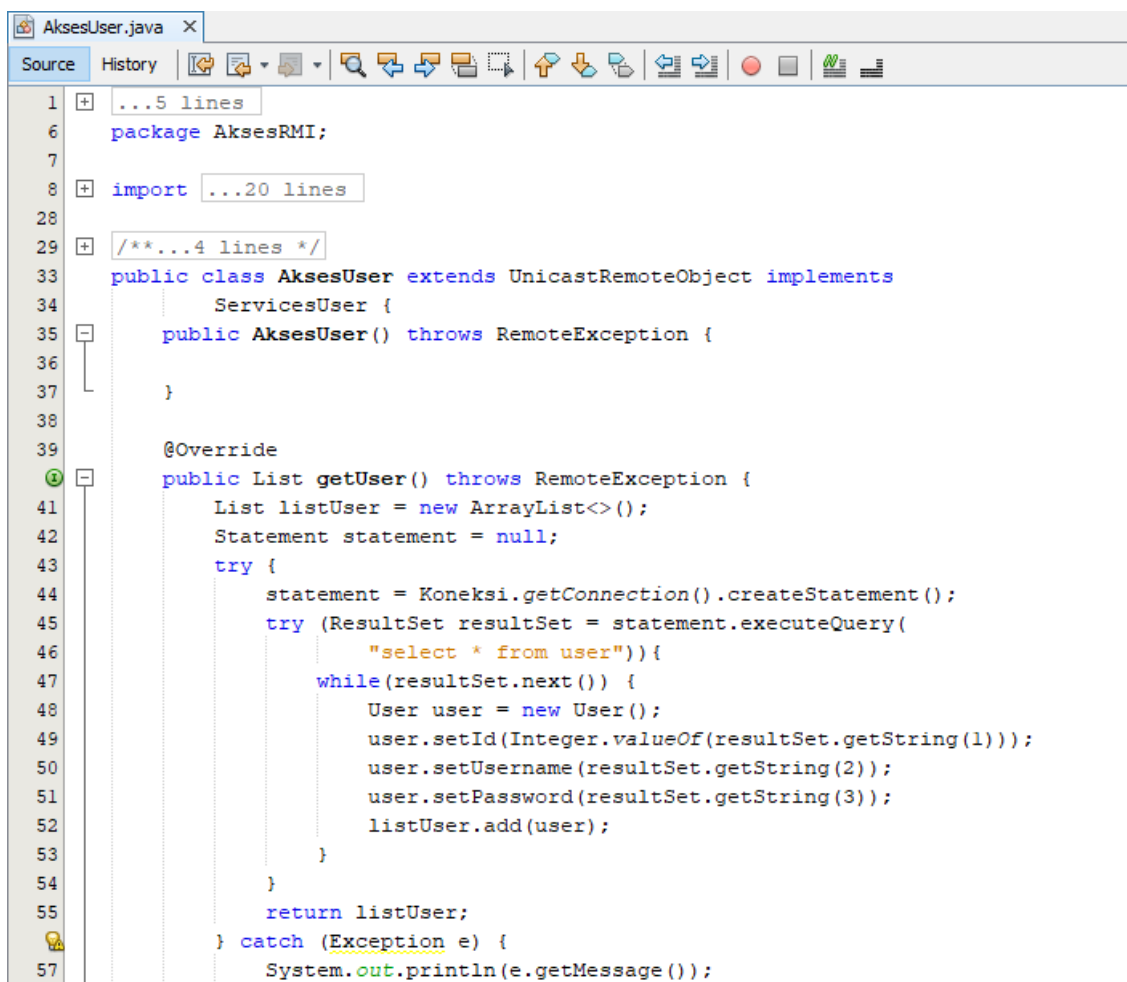
```

```

108         System.out.println(e.getMessage());
109     }finally{
110         if (statement!=null) {
111             try {
112                 statement.close();
113             } catch (Exception e) {
114             }
115         }
116     }
117 }
118 }

```

Masukkan *source code* berikut kelas AksesUser.java



```

AksesUser.java x
Source History
1  ...5 lines
6  package AksesRMI;
7
8  import ...20 lines
28
29  /**...4 lines */
33  public class AksesUser extends UnicastRemoteObject implements
34      ServicesUser {
35      public AksesUser() throws RemoteException {
36      }
37  }
38
39  @Override
40  public List getUser() throws RemoteException {
41      List listUser = new ArrayList<>();
42      Statement statement = null;
43      try {
44          statement = Koneksi.getConnection().createStatement();
45          try (ResultSet resultSet = statement.executeQuery(
46              "select * from user")){
47              while(resultSet.next()) {
48                  User user = new User();
49                  user.setId(Integer.valueOf(resultSet.getString(1)));
50                  user.setUsername(resultSet.getString(2));
51                  user.setPassword(resultSet.getString(3));
52                  listUser.add(user);
53              }
54          }
55          return listUser;
56      } catch (Exception e) {
57          System.out.println(e.getMessage());

```

```

58         return null;
59     }
60     finally {
61         if(statement != null){
62             try {
63                 statement.close();
64             } catch (Exception e) {
65             }
66         }
67     }
68 }
69
70 public void insert(User user) throws RemoteException {
71     Statement statement = null;
72     try {
73         statement = Koneksi.getConnection().createStatement();
74         String newuser = enkripsi(user.getUsername());
75         String newpass = enkripsi(user.getPassword());
76         statement.executeUpdate("insert into user (username, password) values ('"
77             + newuser + "','" + newpass + "')");
78     } catch (Exception e) {
79         System.out.println("gagal");
80     } finally {
81         if(statement != null) {
82             try {
83                 statement.close();
84             } catch (Exception e) {
85             }
86         }
87     }
88 }
89
90 public String enkripsi(String plain) throws NoSuchAlgorithmException, NoSuchProviderException,
91     NoSuchPaddingException, InvalidKeyException, ShortBufferException, IllegalBlockSizeException,
92     BadPaddingException{
93     // TODO code application logic here
94     Security.addProvider(new org.bouncycastle.jce.provider.BouncyCastleProvider());
95     byte[] input = plain.getBytes();
96     byte[] keyBytes = new byte[] { 0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x07, 0x08, 0x09,
97         0x0a, 0x0b, 0x0c, 0x0d, 0x0e, 0x0f };
98
99     SecretKeySpec key = new SecretKeySpec(keyBytes, "AES");
100
101     Cipher cipher = Cipher.getInstance("AES/ECB/PKCS7Padding", "BC");
102
103     System.out.println(new String(input));
104
105     // encryption pass
106     cipher.init(Cipher.ENCRYPT_MODE, key);
107
108     byte[] cipherText = new byte[cipher.getOutputSize(input.length)];
109     int ctLength = cipher.update(input, 0, input.length, cipherText, 0);
110     ctLength += cipher.doFinal(cipherText, ctLength);
111     String newpass = (new String(cipherText));
112     System.out.println(newpass);
113     return newpass;
114 }
115
116 }
117

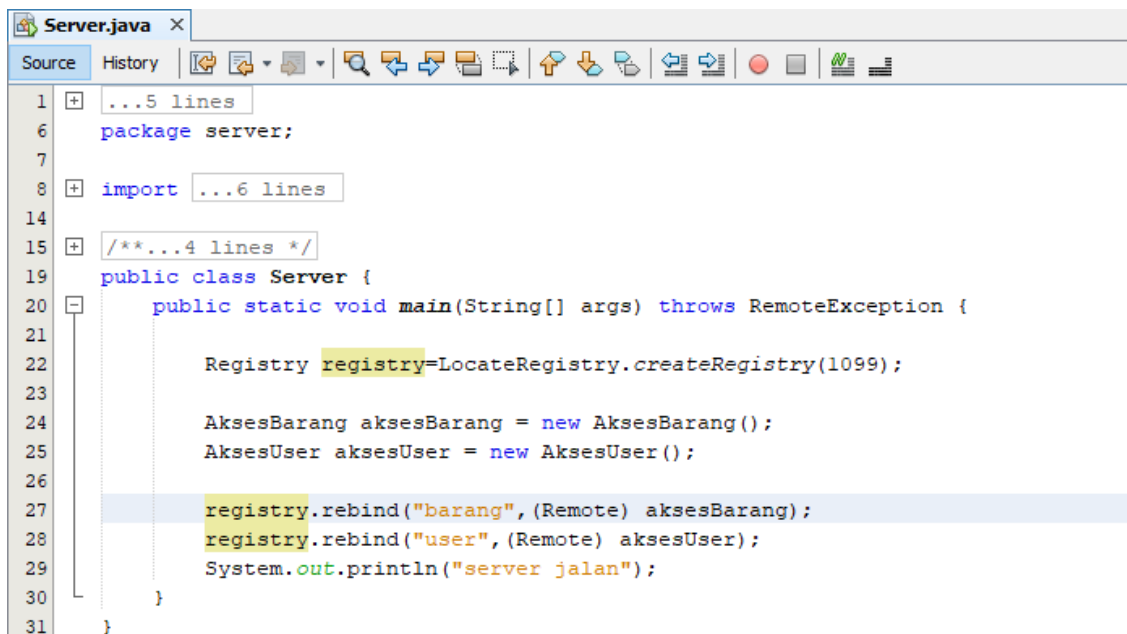
```

```

119     public String dekripsi(String plain) throws NoSuchAlgorithmException, NoSuchProviderException,
120         NoSuchPaddingException, InvalidKeyException, ShortBufferException, IllegalBlockSizeException,
121         BadPaddingException{
122         // TODO code application logic here
123         Security.addProvider(new org.bouncycastle.jce.provider.BouncyCastleProvider());
124         byte[] input = plain.getBytes();
125         byte[] keyBytes = new byte[] { 0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x07, 0x08, 0x09,
126             0x0a, 0x0b, 0x0c, 0x0d, 0x0e, 0x0f };
127
128         SecretKeySpec key = new SecretKeySpec(keyBytes, "AES");
129
130         Cipher cipher = Cipher.getInstance("AES/ECB/PKCS7Padding", "BC");
131
132         System.out.println(new String(input));
133
134         // decryption pass
135         cipher.init(Cipher.DECRYPT_MODE, key);
136         byte[] plainText = new byte[cipher.getOutputSize(input.length)];
137         int ptLength = cipher.update(input, 0, input.length, plainText, 0);
138         ptLength += cipher.doFinal(plainText, ptLength);
139         String pass = (new String(plainText));
140         return pass;
141     }

```

Buka kelas Server pada *package* Server. Masukkan *source code* berikut pada kelas Server.

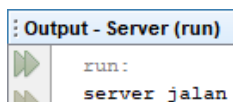


```

1  ...5 lines
6  package server;
7
8  import ...6 lines
14
15  /**...4 lines */
19  public class Server {
20      public static void main(String[] args) throws RemoteException {
21
22          Registry registry=LocateRegistry.createRegistry(1099);
23
24          AksesBarang aksesBarang = new AksesBarang();
25          AksesUser aksesUser = new AksesUser();
26
27          registry.rebind("barang", (Remote) aksesBarang);
28          registry.rebind("user", (Remote) aksesUser);
29          System.out.println("server jalan");
30      }
31  }

```

Jalankan Kelas Server. *Server* berhasil dijalankan

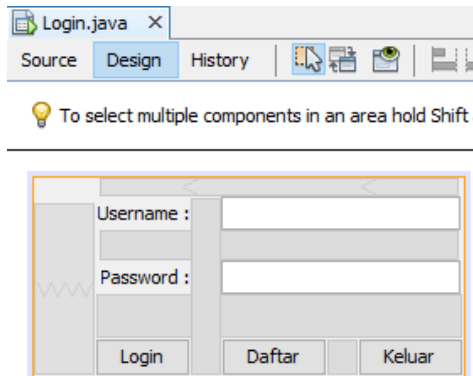


```

Output - Server (run)
run:
server jalan

```


Buka *project* Client. Buat form dengan nama Login pada *package* Client. Buatlah desain kelas Login



Masukkan *source code* berikut pada kelas Login

```
1  ...5 lines
6  package client;
7
8  import ...27 lines
35
36  /**...4 lines */
40  public class Login extends javax.swing.JFrame {
41      final ServicesUser servicesUser;
42      int nilai = 0;
43      /** Creates new form Login ...3 lines */
44      public Login() throws RemoteException, NotBoundException{
45          Registry registry = LocateRegistry.getRegistry(1099);
46          servicesUser = (ServicesUser) registry.lookup("user");
47          initComponents();
48      }
49
50
51
52  /** This method is called from within the constructor to initialize the form
53  @SuppressWarnings("unchecked")
54  Generated Code
136
137  private void select(javax.swing.JTable tabelUser) throws RemoteException{
138      String header[] = {"ID","NAMA","PASSWORD"};
139      java.util.List list = servicesUser.getUser();
140      Object data[][] = new Object[list.size()][2];
141      int x = 0;
142      for(Iterator it = list.iterator(); it.hasNext();){
143          User u = (User) it.next();
144          data[x][0] = u.getUsername();
145          data[x][1] = u.getPassword();
146          ++x;
147      }
```

```

148         tabelUser.setModel(new DefaultTableModel(data, header));
149         JTableHeader head = tabelUser.getTableHeader();
150         head.setBackground(Color.orange);
151     }
152
153     private void insert(ServicesUser servicesUser) throws RemoteException{
154         User u = new User();
155         u.setUsername(tUsername.getText());
156         u.setPassword(tPassword.getText());
157         servicesUser.insert(u);
158     }
159
160     public String enkripsi(String plain) throws InvalidKeyException, ShortBufferException,
161         IllegalBlockSizeException, BadPaddingException, NoSuchAlgorithmException,
162         NoSuchProviderException, NoSuchPaddingException{
163         // TODO code application logic here
164         Security.addProvider(new org.bouncycastle.jce.provider.BouncyCastleProvider());
165         byte[] input = plain.getBytes();
166         byte[] keyBytes = new byte[] { 0x00, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06,
167             0x07, 0x08, 0x09,
168             0x0a, 0x0b, 0x0c, 0x0d, 0x0e, 0x0f };
169
170         SecretKeySpec key = new SecretKeySpec(keyBytes, "AES");
171
172         Cipher cipher = Cipher.getInstance("AES/ECB/PKCS7Padding", "BC");
173
174         System.out.println(new String(input));
175
176         // encryption pass
177         cipher.init(Cipher.ENCRYPT_MODE, key);
178
179         byte[] cipherText = new byte[cipher.getOutputSize(input.length)];
180         int ctLength = cipher.update(input, 0, input.length, cipherText, 0);
181         ctLength += cipher.doFinal(cipherText, ctLength);
182         String newpass = (new String(cipherText));
183         System.out.println(newpass);
184         return newpass;
185     }
186
187     private void clear(){
188         tUsername.setText("");
189         tPassword.setText("");
190     }
191
192     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
193         // TODO add your handling code here:
194         try {
195             ResultSet r = null;
196             String username = tUsername.getText();
197             String password = tPassword.getText();
198             username = enkripsi(username);
199             password = enkripsi(password);
200
201             try {
202                 Connection c = Koneksi.getConnection();
203                 String sql = "select * from user where username = ? and password = ?";
204                 PreparedStatement p = c.prepareStatement(sql);
205                 p.setString(1, username);
206                 p.setString(2, password);
207                 r = p.executeQuery();
208

```

```

209         if (r.next()) {
210             JOptionPane.showMessageDialog(this, "Login Sukses");
211             StokBarang sb = new StokBarang();
212             sb.setVisible(true);
213             this.dispose();
214         } else {
215             JOptionPane.showMessageDialog(this, "Kesalahan username/password");
216         }
217     } catch (SQLException ex) {
218         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
219     }
220
221     } catch (NoSuchAlgorithmException ex) {
222         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
223     } catch (NoSuchProviderException ex) {
224         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
225     } catch (NoSuchPaddingException ex) {
226         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
227     } catch (InvalidKeyException ex) {
228         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
229     } catch (ShortBufferException ex) {
230         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
231     } catch (IllegalBlockSizeException ex) {
232         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
233     } catch (BadPaddingException ex) {
234         Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
235     }
236 }
237
238 private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
239     // TODO add your handling code here:
240     System.exit(0);
241 }
242
243 private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
244     // TODO add your handling code here:
245     if (tUsername.getText().equals("") || tPassword.getText().
246         equals("")) {
247         JOptionPane.showMessageDialog(null, "Silahkan Input Data Dulu");
248     } else {
249         try {
250             insert(servicesUser);
251         } catch (Exception e) {
252             JOptionPane.showMessageDialog(null, e.getMessage());
253         }
254     }
255     clear();
256 }
257
258 /**...3 lines */
259 public static void main(String args[]) {
260     /* Set the Nimbus look and feel */
261     Look and feel setting code (optional)
262     //</editor-fold>
263
264     /* Create and display the form */
265     java.awt.EventQueue.invokeLater(new Runnable() {
266         public void run() {
267             try {
268                 new Login().setVisible(true);
269             }
270         }
271     });

```

```

292         } catch (RemoteException ex) {
293             Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
294         } catch (NotBoundException ex) {
295             Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
296         }
297     });
298 }
299
300 // Variables declaration - do not modify
301 private javax.swing.JButton jButton1;
302 private javax.swing.JButton jButton2;
303 private javax.swing.JButton jButton3;
304 private javax.swing.JLabel jLabel1;
305 private javax.swing.JLabel jLabel2;
306 private javax.swing.JPasswordField tPassword;
307 private javax.swing.JTextField tUsername;
308 // End of variables declaration
309 }

```

Buat kelas koneksi dan masukkan *source code* berikut

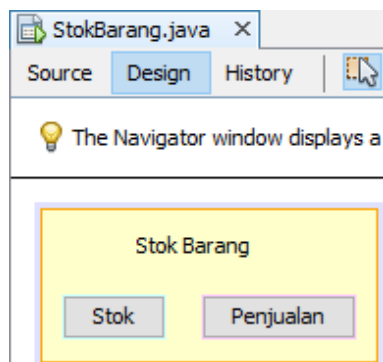


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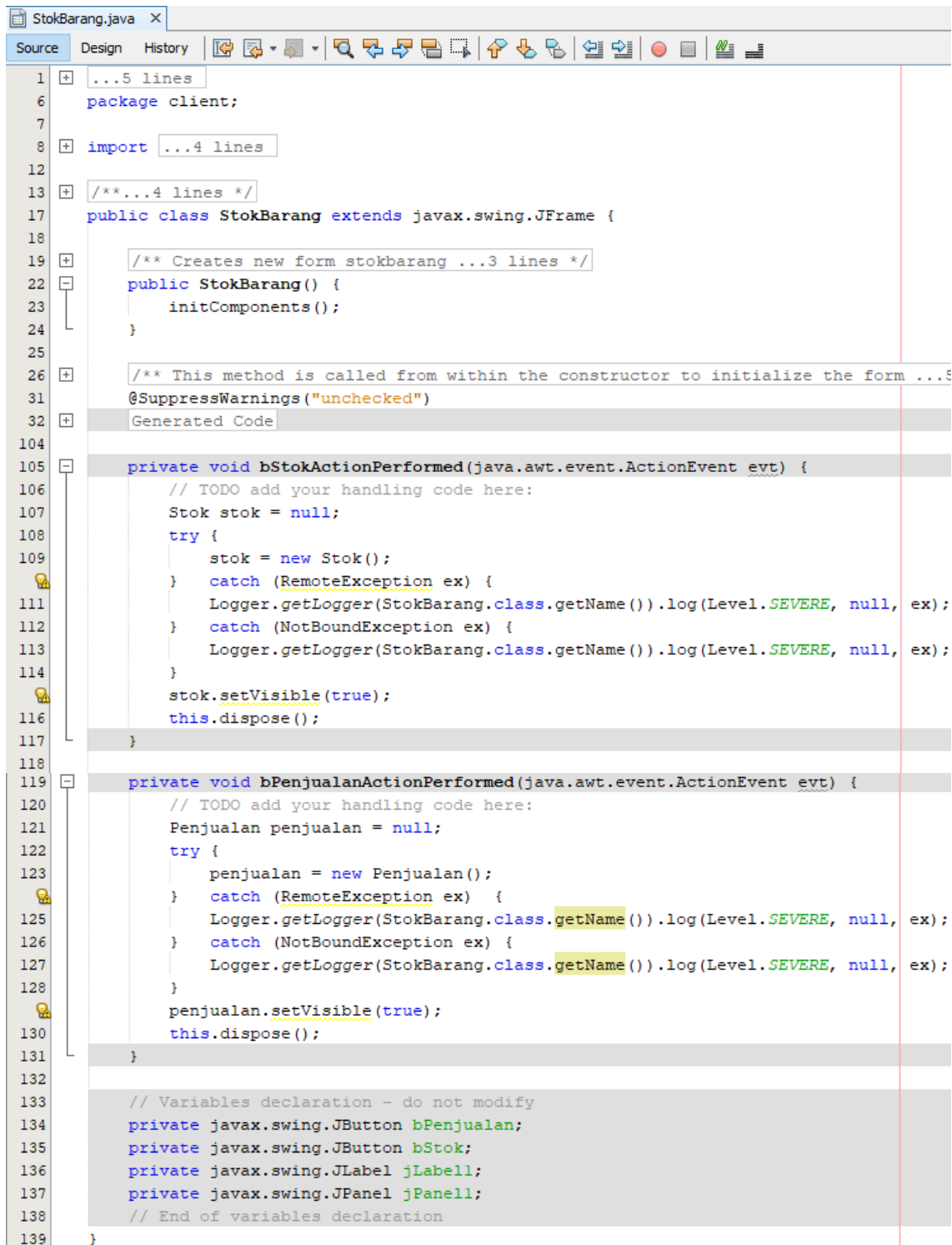
Koneksi.java
Source History
1 ...5 lines
6 package client;
7
8 import ...2 lines
9
10
11 /**...4 lines */
12 public class Koneksi {
13     private static Connection connection=null;
14
15     public static Connection getConnection() {
16         try {
17             Class.forName("com.mysql.jdbc.Driver").newInstance();
18             connection=DriverManager.getConnection("jdbc:mysql://localhost/stokbarang","root", "");
19             System.out.println("Koneksi Sukses");
20         } catch (Exception e) {
21             System.out.println(e.getMessage());
22         }
23         return connection;
24     }
25
26     public static void main(String[] args) {
27         Koneksi.getConnection();
28     }
29 }
30
31

```

Buatlah kelas StokBarang dengan JFrame Form. Buatlah desain kelas StokBarang

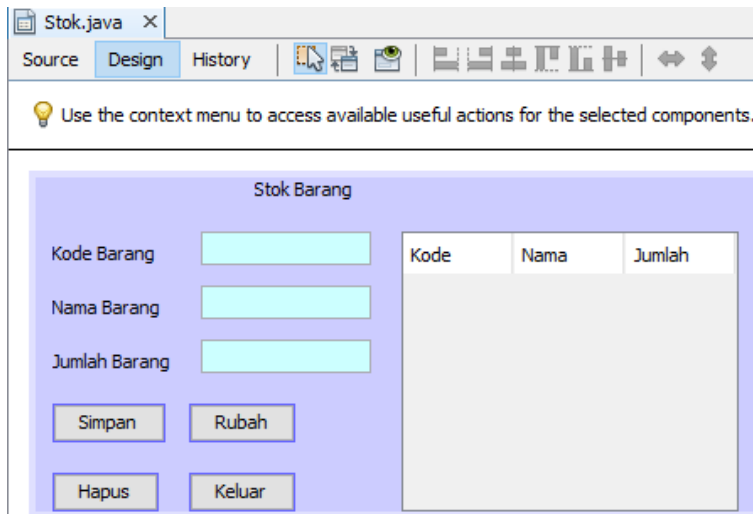


Masukkan *source code* berikut pada kelas StokBarang



```
1  ...5 lines
6  package client;
7
8  import ...4 lines
12
13  /**...4 lines */
17  public class StokBarang extends javax.swing.JFrame {
18
19      /** Creates new form stokbarang ...3 lines */
22  public StokBarang() {
23      initComponents();
24  }
25
26  /** This method is called from within the constructor to initialize the form ...5
31  @SuppressWarnings("unchecked")
32  Generated Code
104
105  private void bStokActionPerformed(java.awt.event.ActionEvent evt) {
106      // TODO add your handling code here:
107      Stok stok = null;
108      try {
109          stok = new Stok();
110      } catch (RemoteException ex) {
111          Logger.getLogger(StokBarang.class.getName()).log(Level.SEVERE, null, ex);
112      } catch (NotBoundException ex) {
113          Logger.getLogger(StokBarang.class.getName()).log(Level.SEVERE, null, ex);
114      }
115      stok.setVisible(true);
116      this.dispose();
117  }
118
119  private void bPenjualanActionPerformed(java.awt.event.ActionEvent evt) {
120      // TODO add your handling code here:
121      Penjualan penjualan = null;
122      try {
123          penjualan = new Penjualan();
124      } catch (RemoteException ex) {
125          Logger.getLogger(StokBarang.class.getName()).log(Level.SEVERE, null, ex);
126      } catch (NotBoundException ex) {
127          Logger.getLogger(StokBarang.class.getName()).log(Level.SEVERE, null, ex);
128      }
129      penjualan.setVisible(true);
130      this.dispose();
131  }
132
133  // Variables declaration - do not modify
134  private javax.swing.JButton bPenjualan;
135  private javax.swing.JButton bStok;
136  private javax.swing.JLabel jLabel1;
137  private javax.swing.JPanel jPanel1;
138  // End of variables declaration
139  }
```

Buatlah kelas Stok dengan JFrame Form. Buatlah desain kelas Stok



Masukkan *source code* berikut pada kelas Stok

```

1  ...5 lines
6  package client;
7
8  import ...19 lines
27
28  /**...4 lines */
32  public class Stok extends javax.swing.JFrame {
33
34      final ServicesBarang servicesBarang;
35      /** Creates new form Stok ...3 lines */
36      public Stok() throws RemoteException, NotBoundException {
37          Registry registry= LocateRegistry.getRegistry(1099);
38          servicesBarang=(ServicesBarang) registry.lookup("barang");
39          initComponents();
40          select(tblBarang);
41      }
42
43
44
45      /** This method is called from within the constructor to initialize the form
46      @SuppressWarnings("unchecked")
47      Generated Code
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```

```

231         data[x][2] = b.getJumlah();
232         ++x;
233     }
234     tblBarang.setModel(new DefaultTableModel(data, header));
235     JTableHeader head = tblBarang.getTableHeader();
236     head.setBackground(Color.orange);
237     // end
238 }
239
240 private void insert(ServicesBarang servicesBarang) throws RemoteException{
241
242     Barang b=new Barang();
243     b.setKode(Integer.valueOf(tKode.getText()));
244     b.setNama(tNama.getText());
245     b.setJumlah(Integer.valueOf(tJumlah.getText()));
246     servicesBarang.insert(b);
247 }
248
249 private void update(ServicesBarang servicesBarang) throws RemoteException{
250     Barang b = new Barang();
251     b.setKode(Integer.valueOf(tKode.getText()));
252     b.setNama(tNama.getText());
253     b.setJumlah(Integer.valueOf(tJumlah.getText()));
254     servicesBarang.update(b);
255 }
256 private void delete(ServicesBarang servicesBarang) throws RemoteException{
257     Barang b = new Barang();
258     b.setKode(Integer.valueOf(tKode.getText()));
259     servicesBarang.delete(b);
260 }
261

```

```

262 private void clear(){
263     tKode.setText("");
264     tNama.setText("");
265     tJumlah.setText("");
266 }
267
268 private void tNamaActionPerformed(java.awt.event.ActionEvent evt) {
269     // TODO add your handling code here:
270 }
271
272 private void bSimpanActionPerformed(java.awt.event.ActionEvent evt) {
273     // TODO add your handling code here:
274     if (tKode.getText().equals("") || tNama.getText().equals("")
275         || tJumlah.getText().equals("")) {
276         JOptionPane.showMessageDialog(null, "Silahkan Input Data Dulu");
277     }
278     else{
279         try {
280             insert(servicesBarang);
281             select(tblBarang);
282         } catch (Exception e) {
283             JOptionPane.showMessageDialog(null, e.getMessage());
284         }
285     }
286     clear();
287 }
288
289 private void tblBarangMouseClicked(java.awt.event.MouseEvent evt) {
290     // TODO add your handling code here:
291     tKode.setText(tblBarang.getValueAt(tblBarang.getSelectedRow(),0).toString());
292     tNama.setText(tblBarang.getValueAt(tblBarang.getSelectedRow(),1).toString());
293     tJumlah.setText(tblBarang.getValueAt(tblBarang.getSelectedRow(),2).toString());
294 }
295
296 private void bRubahActionPerformed(java.awt.event.ActionEvent evt) {
297     // TODO add your handling code here:
298     if (tKode.getText().equals("") || tNama.getText().equals("")
299         || tJumlah.getText().equals("")) {
300         JOptionPane.showMessageDialog(null, "Silahkan pilih data yang akan di Update");
301     }else{
302         try {
303             update(servicesBarang);
304             select(tblBarang);
305         } catch (Exception e) {
306             JOptionPane.showMessageDialog(null, e.getMessage());
307         }
308         clear();
309     }
310 }
311
312 private void bHapusActionPerformed(java.awt.event.ActionEvent evt) {
313     // TODO add your handling code here:
314     if (tKode.getText().equals("") || tNama.getText().equals("")
315         || tJumlah.getText().equals("")) {
316         JOptionPane.showMessageDialog(null, "Silahkan pilih data yang akan di Delete");
317     } else {
318         try {
319             delete(servicesBarang);
320             select(tblBarang);
321         } catch (Exception e) {
322             JOptionPane.showMessageDialog(null, e.getMessage());
323         }
324         clear();

```



```

325     }
326 }
327
328 private void bKeluarActionPerformed(java.awt.event.ActionEvent evt) {
329     // TODO add your handling code here:
330     StokBarang sb = new StokBarang();
331     sb.setVisible(true);
332     this.dispose();
333 }
334
335 // Variables declaration - do not modify
336 private javax.swing.JButton bHapus;
337 private javax.swing.JButton bKeluar;
338 private javax.swing.JButton bRubah;
339 private javax.swing.JButton bSimpan;
340 private javax.swing.JLabel jLabel1;
341 private javax.swing.JLabel jLabel2;
342 private javax.swing.JLabel jLabel3;
343 private javax.swing.JLabel jLabel4;
344 private javax.swing.JPanel jPanel1;
345 private javax.swing.JScrollPane jScrollPane1;
346 private javax.swing.JTextField tJumlah;
347 private javax.swing.JTextField tKode;
348 private javax.swing.JTextField tNama;
349 private javax.swing.JTable tblBarang;
350 // End of variables declaration
351 }

```

Buatlah kelas Penjualan dengan JFrame Form. Buatlah desain kelas Penjualan

Penjualan

Kode Barang

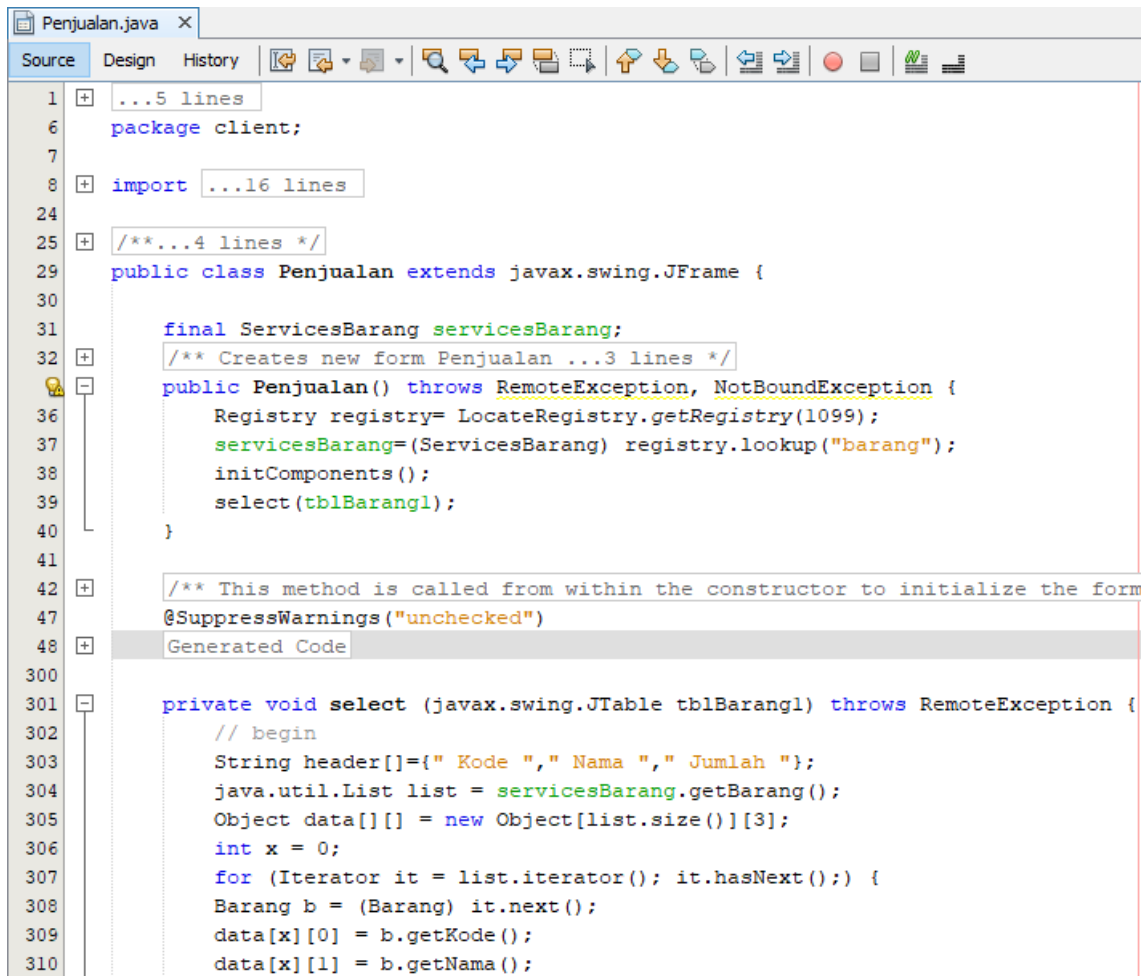
Nama Barang

Jumlah terjual

Simpan Keluar

Kode	Nama	Jumlah

Masukkan *source code* berikut pada kelas Penjualan



```
1  ...5 lines
6  package client;
7
8  import ...16 lines
24
25  /**...4 lines */
29  public class Penjualan extends javax.swing.JFrame {
30
31      final ServicesBarang servicesBarang;
32      /** Creates new form Penjualan ...3 lines */
33      public Penjualan() throws RemoteException, NotBoundException {
34          Registry registry= LocateRegistry.getRegistry(1099);
35          servicesBarang=(ServicesBarang) registry.lookup("barang");
36          initComponents();
37          select(tblBarang1);
38      }
39
40
41
42  /** This method is called from within the constructor to initialize the form
43  @SuppressWarnings("unchecked")
44  Generated Code
300
301  private void select (javax.swing.JTable tblBarang1) throws RemoteException {
302      // begin
303      String header[]={" Kode ", " Nama ", " Jumlah "};
304      java.util.List list = servicesBarang.getBarang();
305      Object data[][] = new Object[list.size()][3];
306      int x = 0;
307      for (Iterator it = list.iterator(); it.hasNext();) {
308          Barang b = (Barang) it.next();
309          data[x][0] = b.getKode();
310          data[x][1] = b.getNama();
```

```

311         data[x][2] = b.getJumlah();
312         ++x;
313     }
314     tblBarang1.setModel(new DefaultTableModel(data, header));
315     JTableHeader head = tblBarang1.getTableHeader();
316     head.setBackground(Color.orange);
317     // end
318 }
319
320 private void update(ServicesBarang servicesBarang) throws RemoteException{
321     TableModel model = tblBarang1.getModel();
322     int index = tblBarang1.getSelectedRow();
323     int jumlah = Integer.valueOf(tJumlah1.getText());
324     int jumlah1 = Integer.valueOf(model.getValueAt(index, 2).toString());
325     jumlah = jumlah1 - jumlah;
326     Barang b=new Barang();
327     b.setKode(Integer.valueOf(tKode1.getText()));
328     b.setNama(tNama1.getText());
329     b.setJumlah(jumlah);
330     servicesBarang.update(b);
331 }
332
333 private void clear(){
334     tKode1.setText("");
335     tNama1.setText("");
336     tJumlah1.setText("");
337 }
338
339 private void tNamaActionPerformed(java.awt.event.ActionEvent evt) {
340     // TODO add your handling code here:
341 }
342

```

```

343
344 private void bInputActionPerformed(java.awt.event.ActionEvent evt) {
345     // TODO add your handling code here:
346 }
347
348 private void tblBarangMouseClicked(java.awt.event.MouseEvent evt) {
349     // TODO add your handling code here;
350 }
351
352 private void tNamaActionPerformed(java.awt.event.ActionEvent evt) {
353     // TODO add your handling code here:
354 }
355
356 private void bInput1ActionPerformed(java.awt.event.ActionEvent evt) {
357     // TODO add your handling code here:
358     if (tKode1.getText().equals("") || tNama1.getText().equals("")
359     || tJumlah1.getText().equals("")) {
360         JOptionPane.showMessageDialog(null, "Silahkan Input Data Dulu");
361     }
362     else{
363         try {
364             update(servicesBarang);
365             select(tblBarang1);
366         } catch (Exception e) {
367             JOptionPane.showMessageDialog(null, e.getMessage());
368         }
369     }
370     clear();
371 }
372
373 private void tblBarang1MouseClicked(java.awt.event.MouseEvent evt) {
374     // TODO add your handling code here:
375     tKode1.setText(tblBarang1.getValueAt(tblBarang1.getSelectedRow(),0).toString());
376     tNama1.setText(tblBarang1.getValueAt(tblBarang1.getSelectedRow(),1).toString());
377 }
378
379 private void bKeluarActionPerformed(java.awt.event.ActionEvent evt) {
380     // TODO add your handling code here:
381     StokBarang sb = new StokBarang();
382     sb.setVisible(true);
383     this.dispose();
384 }
385
386 // Variables declaration - do not modify
387 private javax.swing.JButton bInput;
388 private javax.swing.JButton bInput1;
389 private javax.swing.JButton bKeluar;
390 private javax.swing.JFrame jFrame1;
391 private javax.swing.JLabel jLabel1;
392 private javax.swing.JLabel jLabel2;
393 private javax.swing.JLabel jLabel3;
394 private javax.swing.JLabel jLabel4;
395 private javax.swing.JLabel jLabel5;
396 private javax.swing.JLabel jLabel6;
397 private javax.swing.JLabel jLabel7;
398 private javax.swing.JLabel jLabel8;
399 private javax.swing.JPanel jPanel1;
400 private javax.swing.JScrollPane jScrollPane1;
401 private javax.swing.JScrollPane jScrollPane2;
402 private javax.swing.JTextField tJumlah;
403 private javax.swing.JTextField tJumlah1;
404 private javax.swing.JTextField tKode;

```

```

405     private javax.swing.JTextField tKode1;
406     private javax.swing.JTextField tNama;
407     private javax.swing.JTextField tNama1;
408     private javax.swing.JTable tblBarang;
409     private javax.swing.JTable tblBarang1;
410     // End of variables declaration
411 }

```

Jalankan program. Program akan menampilkan sebagai berikut

Program akan menampilkan sebagai berikut jika *username* dan *password* sesuai. Tekan *button* OK untuk melanjutkan

Masukkan data dan tekan *button* Daftar untuk daftar

Program akan menampilkan sebagai berikut. Tekan *button* Stok atau Penjualan

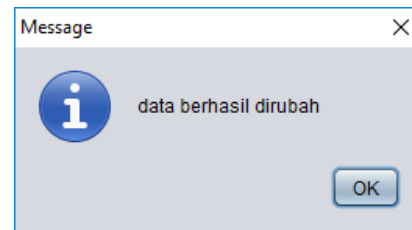
Masukkan data dan tekan *button* Login untuk masuk

Program akan menampilkan sebagai berikut setelah menekan *button* Stok

Masukkan data dan tekan *button* Simpan untuk menyimpan data

Kode	Nama	Jumlah
------	------	--------

Program akan menampilkan sebagai berikut



Tekan *button* Hapus untuk menghapus data

Program akan menampilkan sebagai berikut

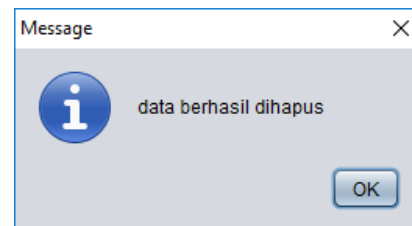
Kode	Nama	Jumlah
1	Air Putih	100

Kode	Nama	Jumlah
1	Teh	100

Program akan menampilkan sebagai berikut

Ubah teks yang terdapat pada program dan tekan *button* Rubah untuk mengubah data

Kode	Nama	Jumlah
1	Air Putih	100



Program akan menampilkan sebagai berikut setelah menekan *button* Penjualan. Program berikut merupakan program yang telah dimasukkan data pada tampilan Stok Barang.

The screenshot shows a window titled "Penjualan" with a light red background. On the left, there are three input fields labeled "Kode Barang", "Nama Barang", and "Jumlah terjual", each with a pink border. Below these fields are two buttons: "Simpan" and "Keluar". On the right, there is a table with three columns: "Kode", "Nama", and "Jumlah". The table contains one row of data: "1", "Air Putih", and "100".

Kode	Nama	Jumlah
1	Air Putih	100

Masukkan jumlah terjual dan tekan *button* Simpan untuk mengurangi stok barang

The screenshot shows the same "Penjualan" window. The input fields are now filled: "Kode Barang" contains "1", "Nama Barang" contains "Air Putih", and "Jumlah terjual" contains "10". The "Simpan" button is highlighted with a blue border, indicating it has been clicked. The table on the right remains unchanged with the row "1", "Air Putih", "100".

Kode	Nama	Jumlah
1	Air Putih	100

Program akan menampilkan sebagai berikut

The screenshot shows the "Penjualan" window after the data has been saved. The input fields are now empty. The "Simpan" button is no longer highlighted. The table on the right now shows the updated stock: "1", "Air Putih", and "90".

Kode	Nama	Jumlah
1	Air Putih	90