

## **BAB VI**

### **KESIMPULAN DAN SARAN**

#### **6.1. Kesimpulan**

Berdasar pada selisih absolut  $|\Delta|$  yang diperoleh dari hasil perbandingan antara perhitungan secara manual dan program, dapat dilihat bahwa selisih terbesar ialah 0,01243 %. Oleh karena itu, program tersebut mempunyai tingkat ketelitian yang baik. Sehingga program itu layak digunakan untuk membantu merencanakan dan mendesain sebuah fondasi telapak. Dari hasil penulisan tugas akhir dan pembuatan program ini, maka dapat ditarik beberapa kesimpulan :

1. Untuk merencanakan sebuah fondasi telapak segi empat momen uniaksial dengan cara perhitungan manual akan memakan waktu yang lama dan kurang efisien.
2. Program bantu perencanaan fondasi telapak segi empat momen uniaksial ini terbukti lebih efektif daripada dilakukan dengan cara perhitungan manual.
3. Program ini tidak memerlukan instalasi program sehingga praktis dan langsung dapat digunakan.

#### **6.2. Saran**

Program bantu perencanaan fondasi telapak segi empat ini masih belum sempurna, maka masih perlu dilakukan penyempurnaan diantaranya :

1. Membuat fondasi telapak segi empat untuk momen biaksial ( 2 arah ).

2. Membuat fondasi telapak untuk kolom tepi, sehingga bukan hanya kolom tengah saja.
3. Membuat program bantu dengan berbagai bentuk fondasi telapak, selain bentuk segi empat.



## DAFTAR PUSTAKA

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- Wahyudi, L., dan Rahim, S.A., 1999, *Struktur Beton Bertulang Standar Baru SNI T-15-1991-03*, Penerbit PT Gramedia Pustaka, Jakarta.



```
//Deklarasi Variabel Global

float ds2, d2, bkmeter2, hkmeter2, tpon2, bpon2, lpon2, hf2, h2meter2,
selimutbtonmeter2, skalapilih2, h2pakai_2;

double tX2, x2, tmaks2, rasiodim2;

int fy2, fc2, diametertulangan2, l2, p2, y4_2, xKotakKcl2, yKotakKcl2, y2_2 ,
x3_2, y3_2, x6_2, y6_2, tulangansusut2;

int XRAKi2, YRAKi2, totX2, totY2;

/** 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() {

    btnGroup1 = new javax.swing.ButtonGroup();

    jPanel1 = new javax.swing.JPanel();

    jLabel1 = new javax.swing.JLabel();

    jLabel3 = new javax.swing.JLabel();

    jLabel4 = new javax.swing.JLabel();

    jLabel5 = new javax.swing.JLabel();

    jLabel7 = new javax.swing.JLabel();

    jLabel8 = new javax.swing.JLabel();

    jLabel10 = new javax.swing.JLabel();

    jLabel11 = new javax.swing.JLabel();

    bfak = new javax.swing.JTextField();

    mutubeton = new javax.swing.JTextField();

    mutubaja = new javax.swing.JTextField();

    tebalpond = new javax.swing.JTextField();

    jLabel13 = new javax.swing.JLabel();

    jLabel14 = new javax.swing.JLabel();

    jLabel15 = new javax.swing.JLabel();

    jLabel6 = new javax.swing.JLabel();

    Tijinnetto = new javax.swing.JTextField();
```

```
bkol = new javax.swing.JTextField();
jLabel12 = new javax.swing.JLabel();
jLabel16 = new javax.swing.JLabel();
hkol = new javax.swing.JTextField();
dtul = new javax.swing.JTextField();
jLabel17 = new javax.swing.JLabel();
jLabel18 = new javax.swing.JLabel();
jLabel19 = new javax.swing.JLabel();
jLabel20 = new javax.swing.JLabel();
jLabel31 = new javax.swing.JLabel();
lebarpond = new javax.swing.JTextField();
jLabel33 = new javax.swing.JLabel();
Momen = new javax.swing.JTextField();
jLabel34 = new javax.swing.JLabel();
jLabel43 = new javax.swing.JLabel();
sbeton = new javax.swing.JTextField();
jLabel44 = new javax.swing.JLabel();
jLabel45 = new javax.swing.JLabel();
jLabel32 = new javax.swing.JLabel();
jLabel38 = new javax.swing.JLabel();
jLabel39 = new javax.swing.JLabel();
jLabel40 = new javax.swing.JLabel();
bjpon = new javax.swing.JTextField();
jLabel41 = new javax.swing.JLabel();
tetan = new javax.swing.JTextField();
bjtanah = new javax.swing.JTextField();
jLabel42 = new javax.swing.JLabel();
jLabel47 = new javax.swing.JLabel();
jLabel2 = new javax.swing.JLabel();
kd = new javax.swing.JRadioButton();
kt = new javax.swing.JRadioButton();
ks = new javax.swing.JRadioButton();
jLabel9 = new javax.swing.JLabel();
prosesinput = new javax.swing.JButton();
```

```
jLabel53 = new javax.swing.JLabel();
dsusut = new javax.swing.JTextField();
jLabel54 = new javax.swing.JLabel();
jLabel55 = new javax.swing.JLabel();
jLabel56 = new javax.swing.JLabel();
rasioby = new javax.swing.JTextField();
jLabel57 = new javax.swing.JLabel();
bentukpon = new javax.swing.JPanel();
jLabel37 = new javax.swing.JLabel();
panjangpond = new javax.swing.JTextField();
jLabel46 = new javax.swing.JLabel();
jLabel35 = new javax.swing.JLabel();
rasio = new javax.swing.JTextField();
jLabel36 = new javax.swing.JLabel();
bentuk = new javax.swing.JTextField();
jPanel2 = new javax.swing.JPanel();
jLabel21 = new javax.swing.JLabel();
jLabel22 = new javax.swing.JLabel();
jLabel23 = new javax.swing.JLabel();
ggesertanah1 = new javax.swing.JTextField();
ggeserbeton1 = new javax.swing.JTextField();
jLabel24 = new javax.swing.JLabel();
jLabel25 = new javax.swing.JLabel();
jLabel26 = new javax.swing.JLabel();
jLabel27 = new javax.swing.JLabel();
jLabel28 = new javax.swing.JLabel();
ggesertanah2 = new javax.swing.JTextField();
ggeserbeton2 = new javax.swing.JTextField();
jLabel29 = new javax.swing.JLabel();
jLabel30 = new javax.swing.JLabel();
cek2arah = new javax.swing.JTextField();
hapus = new javax.swing.JButton();
jLabel58 = new javax.swing.JLabel();
jPanel4 = new javax.swing.JPanel();
```

```
jLabel48 = new javax.swing.JLabel();
jLabel49 = new javax.swing.JLabel();
tegmaks = new javax.swing.JTextField();
tegmin = new javax.swing.JTextField();
jLabel50 = new javax.swing.JLabel();
jLabel51 = new javax.swing.JLabel();
cekaman = new javax.swing.JTextField();
Panel = new javax.swing.JPanel();
penulangan = new javax.swing.JButton();
jLabel52 = new javax.swing.JLabel();
jMenuBar1 = new javax.swing.JMenuBar();
jMenu1 = new javax.swing.JMenu();
menukeluar = new javax.swing.JMenuItem();
jMenu2 = new javax.swing.JMenu();
PFTSG4 = new javax.swing.JMenuItem();
cara = new javax.swing.JMenuItem();

setDefaultCloseOperation(javax.swing.WindowConstants.DISPOSE_ON_CLOSE);

setTitle("ProFonTel-SG4");

jPanell.setBorder(javax.swing.BorderFactory.createTitledBorder(null, "INPUT DATA",
javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
javax.swing.border.TitledBorder.DEFAULT_POSITION, new java.awt.Font("Tahoma", 1,
14))); // NOI18N

jLabel1.setText("Beban Terfaktor (Pu)");
jLabel3.setFont(new java.awt.Font("Tahoma", 3, 11));
jLabel3.setText("Data Pondasi :");
jLabel4.setText("Mutu Beton (fc'  ");
jLabel5.setText("Mutu Baja (fy  ");
jLabel7.setText("Tebal Pondasi (h1)");
jLabel8.setText("kN");
jLabel10.setText("MPa");
jLabel11.setText("MPa");
jLabel13.setText("mm");

jLabel14.setFont(new java.awt.Font("Tahoma", 3, 11));
jLabel14.setText("Data Kolom :");
jLabel15.setText("Daya Dukung Tanah");
```



```
jLabel6.setText("b Kolom");
jLabel12.setText("h Kolom");
jLabel16.setText("Digunakan Tulangan Lentur: D - ");
jLabel17.setText("kN/m2");
jLabel18.setText("mm");
jLabel19.setText("mm");
jLabel20.setText("mm");
jLabel31.setText("Lebar Pondasi (Bx) ");
lebarpond.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        lebarpondActionPerformed(evt);
    }
});
jLabel33.setText("Momen Terfaktor Searah Sb.y (Mu,y)");
Momenu.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        MomenuActionPerformed(evt);
    }
});
jLabel34.setText("kNm");
jLabel43.setText("Selimut Beton");
jLabel44.setText("mm");
jLabel45.setText("m");
jLabel32.setFont(new java.awt.Font("Tahoma", 3, 11));
jLabel32.setText("Data Tanah :");
jLabel38.setText("BJ Tanah");
jLabel39.setText("Tebal Tanah Atas Pondasi");
jLabel40.setText("BJ Beton");
jLabel41.setText("kN/m3");
jLabel42.setText("m");
jLabel47.setText("kN/m3");
jLabel2.setFont(new java.awt.Font("Tahoma", 3, 11));
jLabel2.setText("Letak Kolom Pada Denah Gedung :");
btnGroup1.add(kd);
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kd.setText("3. Kolom Dalam");

btnGroup1.add(kt);

kt.setText("2. Kolom Tepi");

btnGroup1.add(ks);

ks.setText("1. Kolom Sudut");

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

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

        ksActionPerformed(evt);

    }

});

jLabel9.setIcon(new javax.swing.ImageIcon("E:\\Kuliah MerrY\\Semester
8\\TGA\\letak posisi kolom denah.JPG")); // NOI18N

jLabel9.setText(" ");

prosesinput.setText("PROSES INPUT");

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

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

        prosesinputActionPerformed(evt);

    }

});

jLabel53.setText("Digunakan Tulangan Susut : P-");

jLabel54.setText("mm");

jLabel55.setText("mm");

jLabel56.setText("Rasio By ( Maksimal 2 x By)");

jLabel57.setText("X By");

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

jPanel1.setLayout(jPanel1Layout);

jPanel1Layout.setHorizontalGroup(

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

    .addGroup(jPanel1Layout.createSequentialGroup()

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

            .add(jLabel138)

            .add(jLabel139)

        )

    )

```

```
.addComponent(jLabel140)

        .addComponent(jLabel14,
javax.swing.GroupLayout.PREFERRED_SIZE, 75,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel132,
javax.swing.GroupLayout.PREFERRED_SIZE, 82,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE,
201, javax.swing.GroupLayout.PREFERRED_SIZE)

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAI
LING, false)

        .addComponent(jLabel7,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

        .addComponent(jLabel33,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAI
LING)

.addGroup(jPanellLayout.createSequentialGroup())

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAI
LING)

.addGroup(javax.swing.GroupLayout.Alignment.LEADING,
jPanellLayout.createSequentialGroup())

.addComponent(ks)

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

        .addComponent(kt)

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

.addComponent(kd)

.addGroup(javax.swing.GroupLayout.Alignment.LEADING,
jPanellLayout.createSequentialGroup())

        .addGap(21, 21, 21)

.addComponent(jLabel19, javax.swing.GroupLayout.PREFERRED_SIZE, 128,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

.addComponent(prosesinput, javax.swing.GroupLayout.PREFERRED_SIZE, 137,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 54,
Short.MAX_VALUE)

.addGroup(jPanellLayout.createSequentialGroup())

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEAD
ING)
```

```

.addComponent(jLabel16)

.addGroup(jPanellLayout.createSequentialGroup())

.addComponent(jLabel131)

.addGap(103, 103, 103) .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanellLayout.createSequentialGroup())

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

.addGroup(jPanellLayout.createSequentialGroup())

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

.addComponent(jLabel11)

.addComponent(jLabel15))

.addGap(93, 93, 93))

.addGroup(jPanellLayout.createSequentialGroup())

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

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

.addComponent(jLabel15, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addComponent(jLabel14, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

.addComponent(jLabel12)

.addComponent(jLabel16)

.addComponent(jLabel143, javax.swing.GroupLayout.DEFAULT_SIZE, 198,
Short.MAX_VALUE)

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

.addComponent(dtul, javax.swing.GroupLayout.Alignment.LEADING,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

.addComponent(hkol, javax.swing.GroupLayout.Alignment.LEADING,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

.addComponent(lebarpond, javax.swing.GroupLayout.DEFAULT_SIZE, 68,
Short.MAX_VALUE)

.addComponent(sbeton,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

.addComponent(mutubaja, javax.swing.GroupLayout.Alignment.LEADING,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

.addComponent(tebalpond, javax.swing.GroupLayout.DEFAULT_SIZE, 68,
Short.MAX_VALUE)

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        .addComponent(bkol,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

        .addComponent(bjpon,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(Tijinnetto,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

        .addComponent(tetan,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(bfak,
javax.swing.GroupLayout.DEFAULT_SIZE, 68, Short.MAX_VALUE)

        .addComponent(Momenu,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(bjtanah,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(mutubeton,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(dsusut,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE)

        .addComponent(rasioby,
javax.swing.GroupLayout.Alignment.LEADING, javax.swing.GroupLayout.DEFAULT_SIZE,
68, Short.MAX_VALUE))

        .addComponent(jLabel13,
javax.swing.GroupLayout.PREFERRED_SIZE, 94,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addGroup(jPanellLayout.createSequentialGroup())

        .addComponent(jLabel153)

.addGap(123, 123, 123)

        .addComponent(jLabel156))

.addGap(18, 18, 18)

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

        .addComponent(jLabel157)

        .addComponent(jLabel155)

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false))
        .addComponent(jLabel134,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
        .addComponent(jLabel119)
        .addComponent(jLabel111)
        .addComponent(jLabel110)
        .addComponent(jLabel120)
        .addComponent(jLabel18)
        .addComponent(jLabel113)
        .addComponent(jLabel144)

```

```
.addComponent(jLabel45, javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE)
.addComponent(jLabel41)
.addComponent(jLabel42)
.addComponent(jLabel47)
.addComponent(jLabel18, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)
.addComponent(jLabel17, javax.swing.GroupLayout.PREFERRED_SIZE, 62,
javax.swing.GroupLayout.PREFERRED_SIZE)))

.addGap(171, 171, 171))

.addContainerGap()
.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
.addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup())

.addContainerGap(458, Short.MAX_VALUE)

.addComponent(jLabel54, javax.swing.GroupLayout.PREFERRED_SIZE, 27,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addGap(46, 46, 46)))

jPanel1Layout.setVerticalGroup(

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

.addGroup(jPanel1Layout.createSequentialGroup())

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

.addGroup(jPanel1Layout.createSequentialGroup())

.addComponent(jLabel32)

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

.addComponent(jLabel38)

.addGroup(jPanel1Layout.createSequentialGroup())

.addGap(11, 11, 11)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(bjtanah,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jLabel47)))

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

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel39)
```

```
.addComponent(tetan, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jLabel42)

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel11)

.addComponent(bfak, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jLabel8)

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel33,
javax.swing.GroupLayout.PREFERRED_SIZE, 44,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(Momenu, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jLabel34)

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

.addComponent(jPanellLayout.createSequentialGroup()

.addGap(46, 46, 46)

.addComponent(jLabel3))

.addComponent(jPanellLayout.createSequentialGroup()

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(Tijinnetto,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addComponent(jLabel15)

.addComponent(jLabel17)))

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

.addGroup(jPanellLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
LINE)
```

```
.addComponent (jLabel4)

        .addComponent (mutubeton,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent (jLabel10)

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

.addGroup (jPanell1Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent (jLabel15)

        .addComponent (jLabel11)

        .addComponent (mutubaja,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addGap (4, 4, 4)

.addGroup (jPanell1Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent (jLabel7, javax.swing.GroupLayout.PREFERRED_SIZE,
17, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent (tebalpond,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent (jLabel13)

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

.addGroup (jPanell1Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent (sbeton, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent (jLabel14)

        .addComponent (jLabel143)

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

.addGroup (jPanell1Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent (dtul, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent (jLabel16)

        .addComponent (jLabel118)

.addPreferredGap (javax.swing.LayoutStyle.ComponentPlacement.RELATED)
```



```
.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(jLabel153)

    .addComponent(dsusut, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(jLabel155))

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(jLabel131)

    .addComponent(lebarpond,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(jLabel145))

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(jLabel156)

    .addComponent(rasioby,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

    .addComponent(jLabel157))

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addComponent(jLabel140)

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(bjpon,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(jLabel141)))

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

    .addComponent(jLabel114)
```

```

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(jLabel20)

        .addComponent(jLabel6)

        .addComponent(bkol, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(hkol, javax.swing.GroupLayout.PREFERRED_SIZE,
17, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel19)

        .addComponent(jLabel12))

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

        .addComponent(jLabel2)

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

        .addComponent(ks)

        .addComponent(kt)

        .addComponent(kd))

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

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addComponent(prosesinput,
javax.swing.GroupLayout.PREFERRED_SIZE, 72,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel9, javax.swing.GroupLayout.PREFERRED_SIZE,
72, Short.MAX_VALUE))

        .addContainerGap())

.addGroup(jPanell1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanell1Layout.createSequentialGroup())

```

```

        .addContainerGap(327, Short.MAX_VALUE)
        .addComponent(jLabel154)
        .addGap(301, 301, 301))
    );

    bentukpon.setBorder(javax.swing.BorderFactory.createTitledBorder(null,
"DIMENSI PONDASI", javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
javax.swing.border.TitledBorder.DEFAULT_POSITION, new java.awt.Font("Tahoma", 1,
11))); // NOI18N

    jLabel37.setText("Panjang Pondasi (By) ");
    panjangpond.setEditable(false);
    jLabel46.setText("m");
    jLabel35.setText("Rasio Bx/By");
    rasio.setEditable(false);
    jLabel36.setText("Bentuk Pondasi :");
    bentuk.setEditable(false);
    javax.swing.GroupLayout bentukponLayout = new
javax.swing.GroupLayout(bentukpon);
    bentukpon.setLayout(bentukponLayout);
    bentukponLayout.setHorizontalGroup(

bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGroup(bentukponLayout.createSequentialGroup()

        .addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(bentukponLayout.createSequentialGroup()
                .addComponent(jLabel37)
                .addComponent(jLabel35)
                .addComponent(jLabel36))
            .addGroup(bentukponLayout.createSequentialGroup()
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

        .addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(bentukponLayout.createSequentialGroup()
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

        .addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(bentukponLayout.createSequentialGroup()
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(rasio)
                .addComponent(panjangpond,
javax.swing.GroupLayout.DEFAULT_SIZE, 69, Short.MAX_VALUE))

```

```

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

        .addComponent(jLabel46,
javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addComponent(bentuk, javax.swing.GroupLayout.PREFERRED_SIZE,
133, javax.swing.GroupLayout.PREFERRED_SIZE))

        .addContainerGap(70, Short.MAX_VALUE))

    );

    bentukponLayout.setVerticalGroup(

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

        .addGroup(bentukponLayout.createSequentialGroup())

.addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

        .addComponent(jLabel37)

        .addComponent(panjangpond,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel46))

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

.addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

        .addComponent(jLabel35)

        .addComponent(rasio, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

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

.addGroup(bentukponLayout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

        .addComponent(jLabel36)

        .addComponent(bentuk, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))

    );

    jPanel2.setBorder(javax.swing.BorderFactory.createTitledBorder(null,
"KONTROL GAYA GESER", javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
javax.swing.border.TitledBorder.DEFAULT_POSITION, new java.awt.Font("Tahoma", 1,
11))); // NOI18N

```

```
jLabel21.setFont(new java.awt.Font("Tahoma", 1, 11));
jLabel21.setText("Geser 1 Arah");
jLabel22.setText("Vu =");
jLabel23.setText("Vc =");
ggesertanah1.setEditable(false);
ggeserbeton1.setEditable(false);
jLabel24.setText("kN");
jLabel25.setText("kN");
jLabel26.setFont(new java.awt.Font("Tahoma", 1, 11));
jLabel26.setText("Geser Pons");
jLabel27.setText("Vu =");
jLabel28.setText("Vc =");
ggesertanah2.setEditable(false);
ggesertanah2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        ggesertanah2ActionPerformed(evt);
    }
});
ggeserbeton2.setEditable(false);
ggeserbeton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        ggeserbeton2ActionPerformed(evt);
    }
});
jLabel29.setText("kN");
jLabel30.setText("kN");
cek2arah.setEditable(false);
cek2arah.setFont(new java.awt.Font("Tahoma", 0, 14));

hapus.setText("HAPUS");
hapus.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        hapusActionPerformed(evt);
    }
}
```

```

    });

    jLabel58.setText("Cek Geser Pons :");

    javax.swing.GroupLayout jPanel2Layout = new
    javax.swing.GroupLayout (jPanel2);

    jPanel2.setLayout (jPanel2Layout);
    jPanel2Layout.setHorizontalGroup (

jPanel2Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup (jPanel2Layout.createSequentialGroup ()
        .addContainerGap ()

.addGroup (jPanel2Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent (jLabel21)
            .addComponent (jLabel26)
            .addGroup (jPanel2Layout.createSequentialGroup ()

.addGroup (jPanel2Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.TRAILING, false)
                .addGroup (javax.swing.GroupLayout.Alignment.LEADING,
jPanel2Layout.createSequentialGroup ()
                    .addComponent (jLabel28)

.addPreferredGap (javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent (ggeserbeton2) )

                .addGroup (javax.swing.GroupLayout.Alignment.LEADING,
jPanel2Layout.createSequentialGroup ()
                    .addComponent (jLabel27)

.addPreferredGap (javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent (ggesertanah2) )

                .addGroup (javax.swing.GroupLayout.Alignment.LEADING,
jPanel2Layout.createSequentialGroup ()

.addGroup (jPanel2Layout.createParallelGroup (javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent (jLabel22)
                    .addComponent (jLabel23) )

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

```

```

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
    .addComponent(ggeserbeton1)
    .addComponent(ggesertanah1,
javax.swing.GroupLayout.DEFAULT_SIZE, 76, Short.MAX_VALUE)))

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

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addComponent(jLabel129)
    .addComponent(jLabel130)
    .addComponent(jLabel125)
    .addComponent(jLabel124)))
    .addGap(54, 54, 54)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addComponent(jLabel158)
    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup())

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
    .addComponent(cek2arah,
javax.swing.GroupLayout.DEFAULT_SIZE, 112, Short.MAX_VALUE)
    .addComponent(hapus,
javax.swing.GroupLayout.DEFAULT_SIZE, 112, Short.MAX_VALUE))
    .addGap(19, 19, 19))
    .addContainerGap())
);

jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(jPanel2Layout.createSequentialGroup())

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addGroup(jPanel2Layout.createSequentialGroup())
        .addComponent(jLabel21)

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

```

```
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(jLabel122)

    .addComponent(ggesertanah1,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(jLabel124))

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

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

    .addComponent(jLabel123,
javax.swing.GroupLayout.PREFERRED_SIZE, 14,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(ggeserbeton1,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

    .addComponent(jLabel125))

    .addGroup(jPanel2Layout.createSequentialGroup())

        .addContainerGap()

        .addComponent(jLabel158)

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

    .addComponent(cek2arah,
javax.swing.GroupLayout.PREFERRED_SIZE, 35,
javax.swing.GroupLayout.PREFERRED_SIZE))

    .addGap(6, 6, 6)

    .addComponent(jLabel126)

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

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

    .addComponent(hapus, javax.swing.GroupLayout.PREFERRED_SIZE,
61, javax.swing.GroupLayout.PREFERRED_SIZE)

    .addGroup(jPanel2Layout.createSequentialGroup())

        .addComponent(jLabel127)

        .addGap(18, 18, 18)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
```



```

        .addComponent(jLabel28,
javax.swing.GroupLayout.PREFERRED_SIZE, 14,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(ggeserbeton2,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel29))

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASE
LINE)

        .addComponent(ggesertanah2,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel30))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
);

jPanel4.setBorder(javax.swing.BorderFactory.createTitledBorder(null,
"TEGANGAN YANG TERJADI PADA TANAH",
javax.swing.border.TitledBorder.DEFAULT_JUSTIFICATION,
javax.swing.border.TitledBorder.DEFAULT_POSITION, new java.awt.Font("Tahoma", 1,
11))); // NOI18N

jLabel48.setText("Teg. Maksimum");

jLabel49.setText("Teg. Minimum");

tegmaks.setEditable(false);

tegmin.setEditable(false);

jLabel50.setText("kN/m2");

jLabel51.setText("kN/m2");

cekaman.setEditable(false);

javax.swing.GroupLayout jPanel4Layout = new
javax.swing.GroupLayout(jPanel4);

jPanel4.setLayout(jPanel4Layout);

jPanel4Layout.setHorizontalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addGroup(jPanel4Layout.createSequentialGroup()

                .addContainerGap()

.addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

        .addComponent(jLabel48)

        .addComponent(jLabel49))

```

```

        .addGap(18, 18, 18)

        .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

                .addComponent(tegmin)

                .addComponent(tegmaks, javax.swing.GroupLayout.DEFAULT_SIZE,
74, Short.MAX_VALUE))

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

        .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                .addComponent(jLabel150)

                .addComponent(jLabel151))

        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 16,
Short.MAX_VALUE)

                .addComponent(cekaman, javax.swing.GroupLayout.PREFERRED_SIZE, 61,
javax.swing.GroupLayout.PREFERRED_SIZE)

                .addGap(26, 26, 26)

        );

        jPanel4Layout.setVerticalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                .addGroup(jPanel4Layout.createSequentialGroup())

        .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                .addGroup(jPanel4Layout.createSequentialGroup())

        .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                .addComponent(jLabel148)

                .addComponent(tegmaks,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

                .addComponent(jLabel150))

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

        .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                .addComponent(jLabel149)

```

```

        .addComponent(tegmin,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

        .addComponent(jLabel51))

        .addGroup(jPanel4Layout.createSequentialGroup())

        .addGap(11, 11, 11)

        .addComponent(cekaman,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
    );
    Panel.setBorder(javax.swing.BorderFactory.createTitledBorder("DESAIN
GAMBAR "));

    penulangan.setText("PENULANGAN");

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

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

            penulanganActionPerformed(evt);

        }

    });

    javax.swing.GroupLayout PanelLayout = new javax.swing.GroupLayout(Panel);
    Panel.setLayout(PanelLayout);

    PanelLayout.setHorizontalGroup(

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

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

            .addContainerGap(400, Short.MAX_VALUE)

            .addComponent(penulangan, javax.swing.GroupLayout.PREFERRED_SIZE,
154, javax.swing.GroupLayout.PREFERRED_SIZE)

            .addContainerGap()

        );

    PanelLayout.setVerticalGroup(

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

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

            .addContainerGap(595, Short.MAX_VALUE)

```

```
.addComponent(penulangan, javax.swing.GroupLayout.PREFERRED_SIZE,
38, javax.swing.GroupLayout.PREFERRED_SIZE)

        .addContainerGap()

    );

    jLabel152.setIcon(new javax.swing.ImageIcon("E:\\Kuliah Merry\\Semester
8\\TGA\\GAMBAR BANTU.JPG")); // NOI18N

    jMenuItem1.setText("File");
    menukeluar.setText("Keluar Ke Menu Utama");
    menukeluar.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            menukeluarActionPerformed(evt);
        }
    });
    jMenuItem1.add(menukeluar);
    jMenuItemBar1.add(jMenuItem1);
    jMenuItem2.setText("Informasi");
    PFTSG4.setText("ProFonTel-SG4");
    PFTSG4.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            PFTSG4ActionPerformed(evt);
        }
    });
    jMenuItem2.add(PFTSG4);

    cara.setText("Menggunakan ProFonTel-SG4");
    cara.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            caraActionPerformed(evt);
        }
    });
    jMenuItem2.add(cara);

    jMenuItemBar1.add(jMenuItem2);
    setJMenuBar(jMenuBar1);
```

```

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout ( getContentPane () );

        getContentPane (). setLayout ( layout );

        layout. setHorizontalGroup (

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

                . addGroup ( layout. createSequentialGroup ()

                    . addContainerGap ()

                        . addComponent ( jPanel1, javax.swing. GroupLayout. PREFERRED_SIZE,
375, javax.swing. GroupLayout. PREFERRED_SIZE )

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

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

                                    . addComponent ( jPanel2, javax.swing. GroupLayout. DEFAULT_SIZE,
javax.swing. GroupLayout. DEFAULT_SIZE, Short. MAX_VALUE )

                                        . addComponent ( jLabel52,
javax.swing. GroupLayout. PREFERRED_SIZE, 326,
javax.swing. GroupLayout. PREFERRED_SIZE )

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

                                                . addComponent ( bentukpon,
javax.swing. GroupLayout. Alignment. LEADING, javax.swing. GroupLayout. DEFAULT_SIZE,
javax.swing. GroupLayout. DEFAULT_SIZE, Short. MAX_VALUE )

                                                    . addComponent ( jPanel4,
javax.swing. GroupLayout. Alignment. LEADING, javax.swing. GroupLayout. DEFAULT_SIZE,
javax.swing. GroupLayout. DEFAULT_SIZE, Short. MAX_VALUE ) )

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

                                                        . addComponent ( panel, javax.swing. GroupLayout. PREFERRED_SIZE,
javax.swing. GroupLayout. DEFAULT_SIZE, javax.swing. GroupLayout. PREFERRED_SIZE )

                                                            . addGap ( 2979, 2979, 2979 )

                                                                );

                layout. setVerticalGroup (

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

                        . addGroup ( layout. createSequentialGroup ()

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

                                . addComponent ( panel,
javax.swing. GroupLayout. Alignment. LEADING, javax.swing. GroupLayout. DEFAULT_SIZE,
javax.swing. GroupLayout. DEFAULT_SIZE, Short. MAX_VALUE )

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

```

```

        .addComponent(jPanel1,
javax.swing.GroupLayout.Alignment.LEADING, 0, 671, Short.MAX_VALUE)

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

                .addContainerGap()

                .addComponent(jLabel52,
javax.swing.GroupLayout.PREFERRED_SIZE, 252,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

                .addComponent(bentukpon,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

                .addComponent(jPanel4,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

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

                .addComponent(jPanel2,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)))

        .addContainerGap(541, Short.MAX_VALUE)

    );

    getAccessibleContext().setAccessibleName("Input Data Beban");

    pack();

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

private void MomenuActionPerformed(java.awt.event.ActionEvent evt) { // GEN-
FIRST:event_MomenuActionPerformed

    // TODO add your handling code here:

} // GEN-LAST:event_MomenuActionPerformed

private void prosesinputActionPerformed(java.awt.event.ActionEvent evt)
{ // GEN-FIRST:event_prosesinputActionPerformed

// TODO add your handling code here:

float bjtnh, bjbeton, tpon, hf, ht, q, ds, d;

ht=Float.parseFloat(tetan.getText());

bjtnh=Float.parseFloat(bjtanah.getText());

```

```

bjbeton=Float.parseFloat(bjpon.getText());
tpon=Float.parseFloat(tebalpond.getText());
int itpon=(int) tpon;
hf=tpon/1000;
hf2 =hf;
int des = 1;
BigDecimal deci = new BigDecimal(hf);
deci=deci.setScale(des,BigDecimal.ROUND_DOWN);
hf=deci.floatValue();
q=(hf*bjbeton)+(ht*bjtnh);
int dec = 3;
BigDecimal desi = new BigDecimal(q);
desi=desi.setScale(dec,BigDecimal.ROUND_DOWN);
q=desi.floatValue();

int fc, fy, diametertulangan, tulangansusut;

float bebanfak, bpon, bponmili, bkolom, hkolom, rasiodimensi;

double mfaktor, tnetto, tijin, lpon, lponmili, arumus, brumus, crumus, rasiodim,
tmaks, tmin, tX, akar, akar1, akar2, akar3, tegangan;

String bentukpon;

bebanfak=Float.parseFloat(bfak.getText());
mfaktor=Double.parseDouble(Momenu.getText());
fc=Integer.parseInt(mutubeton.getText());
fy=Integer.parseInt(mutubaja.getText());
tijin=Double.parseDouble(Tijinnetto.getText());

//syarat batas
if(tijin<=40){
JOptionPane.showMessageDialog(this,"Daya dukung tanah terlalu
kecil!","Peringatan",JOptionPane.WARNING_MESSAGE);}

else{

    bpon=Float.parseFloat(lebarpond.getText());

    rasiodimensi = Float.parseFloat(rasioby.getText());
diametertulangan=Integer.parseInt(dtul.getText());
tulangansusut=Integer.parseInt(dsusut.getText());

tulangansusut2=tulangansusut;

bkolom=Float.parseFloat(bkol.getText());

```

```

hkolom=Float.parseFloat(hkol.getText());
bponmili=bpon*1000;
int ibponmili=(int) bponmili;
lpon = bpon*rasiodimensi;
tegangan = (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));

int decimalPlace = 1;
BigDecimal bd = new BigDecimal(lpon);
bd = bd.setScale(decimalPlace,BigDecimal.ROUND_UP);
lpon = bd.doubleValue();
panjangpond.setText(String.valueOf(lpon));
lponmili=lpon*1000;
int ilponmili=(int) lponmili;
if(rasiodimensi>=0.5 && rasiodimensi<=2)
{
    if(bpon<=(2*lpon) && lpon<=(2*bpon))
    {
        rasiodim=bpon/lpon;
        int decimal = 1;
        BigDecimal bigde = new BigDecimal(rasiodim);
        bigde = bigde.setScale(decimal,BigDecimal.ROUND_DOWN);
        rasiodim = bigde.doubleValue();
        rasio.setText(String.valueOf(rasiodim));

        if(rasiodim == 1.0)
            bentukpon="BUJUR SANGKAR";
        else
            bentukpon="PERSEGI PANJANG";
        bentuk.setText(String.valueOf(bentukpon));
        rasiodim2 = rasiodim;

        float dtulangan,selimutbton, selimutbtonmeter;
        selimutbton=Float.parseFloat(sbeton.getText());
        selimutbtonmeter = selimutbton/1000;
    }
}

```



```
selimutbtonmeter2 = selimutbtonmeter;
dtulangan=Float.parseFloat(dtul.getText());
ds=selimutbton+(dtulangan/2);

int desimal = 0;
BigDecimal bidec = new BigDecimal(ds);
bidec = bidec.setScale(desimal,BigDecimal.ROUND_UP);
ds = bidec.intValue();
ds2 = ds;

double ak,akmeter;
d=tpon-ds;
ak=((lpon*1000)/2)-(bkolom/2)-d;
akmeter=ak/1000;

d2 = d;
int des3 = 3;
tmaks=(bebanfak/(bpon*lpon))+(mfaktor/(0.16666667*bpon*lpon*lpon))+q;

BigDecimal bdec = new BigDecimal(tmaks);
bdec = bdec.setScale(des3,BigDecimal.ROUND_UP);
tmaks = bdec.doubleValue();
tegmaks.setText(String.valueOf(tmaks));
tmaks2 = tmaks;
tmin=(bebanfak/(bpon*lpon))-(mfaktor/(0.16666667*bpon*lpon*lpon))+q;
BigDecimal bdc = new BigDecimal(tmin);
bdc = bdc.setScale(des3,BigDecimal.ROUND_UP);
tmin = bdc.doubleValue();
tegmin.setText(String.valueOf(tmin));

String ckaman;
if(tmaks<tijin)
    ckaman="AMAN";
else
```

```
ckaman="Tidak Aman!";
cekaman.setText(String.valueOf(ckaman));

float bkmeter, hkmeter, dmeter, betakol, bnol;
bkmeter=bkolom/1000;
hkmeter=hkolom/1000;
dmeter=d/1000;
hkmeter2 = hkmeter;
bkmeter2 = bkmeter;
double x;
x=(lpon/2)-(bkmeter/2);
BigDecimal simal2 = new BigDecimal(x);
simal2 = simal2.setScale(decimalPlace,BigDecimal.ROUND_UP);
x = simal2.doubleValue();
x2 = x;

tX=tmin+((lpon-x)*(tmaks-tmin))/lpon;
tX2 = tX;

double h2;
float h2dua,h2pakai, h2meter;
h2=tpon*((tX-tmin)/(tmaks-tmin));
h2dua = (float)h2/1000;
int dec2 = 2;
BigDecimal desi3 = new BigDecimal(h2dua);
desi3 = desi3.setScale(dec2,BigDecimal.ROUND_UP);
h2dua = desi3.floatValue();
h2pakai = h2dua*1000;
int ih2pakai=(int) h2pakai;
h2meter=(float) (h2pakai/1000);
h2pakai_2 = h2pakai;
double tegkritis;
tegekritis=tmin+(lpon-akmeter)*((tmaks-tmin)/lpon);
```

```

double vu1, vc1, vu2, vcpertama, vckedua, vcketiga, vcpilih1,
vcpilih2;

vu1=akmeter*bpon*(tmaks+tegkritis)/2;

BigDecimal bide = new BigDecimal(vu1);
bide = bide.setScale(des3,BigDecimal.ROUND_UP);
vu1 = bide.doubleValue();

ggesertanah1.setText(String.valueOf(vu1));

vc1=0.16666667*Math.sqrt(fc)*bpon*d;
BigDecimal bede = new BigDecimal(vc1);
bede = bede.setScale(des3,BigDecimal.ROUND_UP);
vc1 = bede.doubleValue();
ggeserbeton1.setText(String.valueOf(vc1));

if(vu1<(0.75*vc1))
{
    vu2=(bpon*lpon-
((hkmeter+dmeter)*(bkmeter+dmeter)))*((tmaks+tmin)/2);

    BigDecimal simal = new BigDecimal(vu2);
    simal = simal.setScale(des3,BigDecimal.ROUND_UP);
    vu2=simal.doubleValue();

    ggesertanah2.setText(String.valueOf(vu2));

    betakol=bkolom/hkolom;

    bnol=2*((hkolom+d)+(bkolom+d));

vcpertama=((1+(2/betakol))*(0.16666667*Math.sqrt(fc)*bnol*d)/1000);

    BigDecimal bulat = new BigDecimal(vcpertama);
    bulat = bulat.setScale(des3,BigDecimal.ROUND_UP);
    vcpertama=bulat.doubleValue();

    int alfas=0;

    if(ks.isSelected())
        alfas = 20;

    else if(kt.isSelected())
        alfas = 30;

    else if(kd.isSelected())
        alfas = 40;
}

```

```

vckedua=((2+((alfas*d)/bnol))*(Math.sqrt(fc)*bnol*d)/12)/1000;
BigDecimal bul = new BigDecimal(vckedua);
bul = bul.setScale(des3,BigDecimal.ROUND_UP);
vckedua=bul.doubleValue();
vcketiga=(Math.sqrt(fc)*bnol*d)/3)/1000;
BigDecimal blt = new BigDecimal(vcketiga);
blt = blt.setScale(des3,BigDecimal.ROUND_UP);
vcketiga=blt.doubleValue();
vcpilih1 = Math.min(vcpertama, vckedua);
vcpilih2 = Math.min(vcpilih1, vcketiga);
ggeserbeton2.setText(String.valueOf(vcpilih2));
String cekgeser2;
if(vu2<(0.75*vcpilih2))
    cekgeser2="OK-Aman";
else
    cekgeser2="Tidak Aman!";
cek2arah.setText(String.valueOf(cekgeser2));

double Pu;
Pu = (0.7*0.85*fc*bkolom*hkolom)/1000 ;
if (Pu > bebanfak){
//GAMBAR
int l = (int)(lpon*100);
int p = (int)(bpon*100);

Graphics2D per = (Graphics2D) Panel.getGraphics();

per.setColor(Color.black);
int XRAKi, YRAKi, totX, totY;
totX = 50+l+30;
totY = 150 +(int)(h2meter*100)+(int)(p/10)+p+40;
//Skala

```

```

float skalapilih;

float skalax = (float)((0.8*480)/totX);

float skalay = (float)((0.8*530)/totY);

skalapilih = Math.min(skalax,skalay);

skalapilih2 = skalapilih;

XRAKi = 242-((int)(1*skalapilih)/2)+25;

YRAKi = 350-((int)(p*skalapilih)/2);

XRAKi2 = XRAKi;

YRAKi2 = YRAKi;

per.drawRect(XRAKi, YRAKi, (int)(1*skalapilih),
(int)(p*skalapilih));

int xKotakKcl = (XRAKi+((int)(1*skalapilih)/2))-
(int)(bkmeter*skalapilih*50);

int yKotakKcl = (YRAKi+((int)(p*skalapilih)/2))-
(int)(hkmeter*skalapilih*50);

per.drawRect(xKotakKcl, yKotakKcl, (int)(bkmeter*skalapilih*100),
(int)(hkmeter*skalapilih*100));

xKotakKcl2 = xKotakKcl;

yKotakKcl2 = yKotakKcl;

int x1, x2, x3, x4, x5, x6, x7, x8;
x1=(int)(bkmeter*skalapilih*100);

x3=XRAKi;x4=x3;x5=x3+(int)(1*skalapilih);x6=x5;x2=xKotakKcl;x7=x2+(int)(bkmeter*sk
alapilih*100);x1=x2;x8=x7;

int y1, y2, y3, y4, y4_2, y5, y6, y7, y8;

y4=YRAKi-((int)((p*skalapilih)/10));y3=(y4-
((int)(h2meter*skalapilih*100)));y5=y4;y6=y5-
((int)(h2meter*skalapilih*100)));y2=(y4-((int)(hf*skalapilih*100)));y7=(y5-
((int)(hf*skalapilih*100)));y1=y2-60;y8=y7-60;

y2_2 = y2;

x3_2 = x3;

y3_2 = y3;

x6_2 = x6;

y6_2 = y6;

per.drawLine(x1, y1, x2, y2);

per.drawLine(x2, y2, x3, y3);

per.drawLine(x3, y3, x4, y4);

```

```

per.drawLine(x4, y4, x5, y5);
per.drawLine(x5, y5, x6, y6);
per.drawLine(x6, y6, x7, y7);
per.drawLine(x7, y7, x8, y8);

per.drawLine(x1-(int)(0.25*bkmeter*skalapilih*100), y1, x1, y1);
per.drawLine(x1+(int)(0.125*bkmeter*skalapilih*100), y1,
x1+(int)(0.375*bkmeter*skalapilih*100), y1);
per.drawLine(x1+(int)(0.5*bkmeter*skalapilih*100), y1,
x1+(int)(0.75*bkmeter*skalapilih*100), y1);
per.drawLine(x1+(int)(0.875*bkmeter*skalapilih*100), y1,
x1+(int)(1.125*bkmeter*skalapilih*100), y1);

per.setColor(Color.lightGray);
per.drawLine(XRAKi, YRAKi, xKotakKcl, yKotakKcl);
per.drawLine(xKotakKcl+(int)(bkmeter*skalapilih*100), yKotakKcl,
XRAKi+(int)(1*skalapilih), YRAKi);
per.drawLine(XRAKi, YRAKi+(int)(p*skalapilih), xKotakKcl,
yKotakKcl+(int)(hkmeter*skalapilih*100));
per.drawLine(xKotakKcl+(int)(bkmeter*skalapilih*100),
yKotakKcl+(int)(hkmeter*skalapilih*100), XRAKi+(int)(1*skalapilih),
YRAKi+(int)(p*skalapilih));

per.setColor(Color.black);
per.drawLine(XRAKi-20, YRAKi, XRAKi-20,
YRAKi+(int)(p*skalapilih));
per.drawLine(XRAKi-25, YRAKi, XRAKi-15, YRAKi);
per.drawLine(XRAKi-25, YRAKi+(int)(p*skalapilih), XRAKi-15,
(int)(YRAKi+(int)(p*skalapilih)));

per.drawLine(XRAKi, YRAKi+(int)(p*skalapilih)+20,
XRAKi+(int)(1*skalapilih), YRAKi+(int)(p*skalapilih)+20);
per.drawLine(XRAKi, YRAKi+(int)(p*skalapilih)+15, XRAKi,
YRAKi+(int)(p*skalapilih)+25);
per.drawLine(XRAKi+(int)(1*skalapilih),
YRAKi+(int)(p*skalapilih)+15, XRAKi+(int)(1*skalapilih),
YRAKi+(int)(p*skalapilih)+25);

per.drawLine(XRAKi-20, YRAKi-(int)((p*skalapilih)/10), XRAKi-20,
y2);

```

```

        per.drawLine(XRAKi-25, YRAKi-(int)((p*skalapilih)/10), XRAKi-15,
YRAKi-(int)((p*skalapilih)/10));

        per.drawLine(XRAKi-25, y2, XRAKi-15, y2);

        per.drawLine(x5+20, y5, x6+20, y6);

        per.drawLine(x5+15, y5, x5+25, y5);

        per.drawLine(x6+15, y6, x6+25, y6);

        AffineTransform miring = new AffineTransform();
        Font theFont = per.getFont();
        miring.rotate((Math.PI/2.0)*(-1));
        Font theDerivedFont = theFont.deriveFont(miring);
        per.setFont(theDerivedFont);

        per.drawString(String.valueOf(ibponmili), XRAKi-30,
YRAKi+(int)(p*skalapilih)/2)+10);

        per.setFont(theFont);

        per.drawString(String.valueOf(ilponmili),
XRAKi+(int)(1*skalapilih)/2)-20, YRAKi+(int)(p*skalapilih)+40);

        per.drawString(String.valueOf(itpon), XRAKi-50,
(y2+(int)(hf*skalapilih*100))/2)+5);

        per.drawString(String.valueOf(ih2pakai), x5+30
, (y6+(int)(h2meter*skalapilih*100))/2)+5 );

        per.setFont(theDerivedFont);

        per.drawString(hkol.getText(), xKotakKcl-5
,yKotakKcl+(int)(hkmeter*skalapilih*100)/2)+10);

        per.setFont(theFont);

        per.drawString(bkol.getText(),
xKotakKcl+(int)(bkmeter*skalapilih*100)/2)-10 ,yKotakKcl-5);
    }

    else

        {JOptionPane.showMessageDialog(null,"Kuat dukung fondasi TIDAK AMAN!! Perbesar
dimensi kolom!","Peringatan!", JOptionPane.WARNING_MESSAGE);

        }

    }

    else

        {JOptionPane.showMessageDialog(null, "Cek geser 1 arah , sistem akan
memberikan tebal pondasi yang sesuai", "Peringatan",JOptionPane.WARNING_MESSAGE);

        do{

            itpon = itpon + 50;

            tebalpond.setText(String.valueOf(itpon));

```

```

hf=itpon/1000;

BigDecimal deci2 = new BigDecimal(hf);
deci2=deci2.setScale(des,BigDecimal.ROUND_DOWN);
hf=deci2.floatValue();
q=(hf*bjbeton)+(ht*bjtnh);
BigDecimal desi2 = new BigDecimal(q);
desi2=desi2.setScale(dec,BigDecimal.ROUND_DOWN);
q=desi2.floatValue();

bebanfak=Float.parseFloat(bfak.getText());
mfaktor=Double.parseDouble(Momenu.getText());
fc=Integer.parseInt(mutubeton.getText());
fy=Integer.parseInt(mutubaja.getText());

tjjin=Double.parseDouble(Tjjinnetto.getText());
bpon=Float.parseFloat(lebarpond.getText());
bkolom=Float.parseFloat(bkol.getText());
hkolom=Float.parseFloat(hkol.getText());

bponmili=bpon*1000;
lpon = bpon*rasiodimensi;

tegangan =
(bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));

BigDecimal bd2 = new BigDecimal(lpon);
bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
lpon = bd2.doubleValue();

panjangpond.setText(String.valueOf(lpon));

lponmili=(int)(lpon*1000);

rasiodim=bpon/lpon;

BigDecimal bigde2 = new BigDecimal(rasiodim);
bigde2 =
bigde2.setScale(decimal,BigDecimal.ROUND_DOWN);

rasiodim = bigde2.doubleValue();

rasio.setText(String.valueOf(rasiodim));

if(rasiodim == 1.0)

    bentukpon="BUJUR SANGKAR";

else

```



```

        bentukpon="PERSEGI PANJANG";

        bentuk.setText(String.valueOf(bentukpon));

    rasioidim2 = rasioidim;

        selimutbton=Float.parseFloat(sbeton.getText());
        dtulangan=Float.parseFloat(dtul.getText());
        ds=selimutbton+(dtulangan/2);

    BigDecimal bidec2 = new BigDecimal(ds);

        bidec2 = bidec2.setScale(desimal,BigDecimal.ROUND_UP);

    ds = bidec2.intValue();
    ds2 = ds;
    d=itpon-ds;
    ak=((lpon*1000)/2)-(bkolom/2)-d;
    akmeter=ak/1000;
    d2 = d;

    tmaks=(bebanfak/(bpon*lpon))+(mfaktor/(0.16666667*bpon*lpon*lpon))+q;

        BigDecimal bdec2 = new BigDecimal(tmaks);
        bdec2 = bdec2.setScale(des3,BigDecimal.ROUND_UP);
        tmaks = bdec2.doubleValue();
        tegmaks.setText(String.valueOf(tmaks));

        tmaks2 = tmaks;

        tmin=(bebanfak/(bpon*lpon))-
(mfaktor/(0.16666667*bpon*lpon*lpon))+q;

        BigDecimal bdc2 = new BigDecimal(tmin);
        bdc2 = bdc2.setScale(des3,BigDecimal.ROUND_UP);
        tmin = bdc2.doubleValue();
        tegmin.setText(String.valueOf(tmin));

    if(tmaks<tijin)

        ckaman="AMAN";

    else

        ckaman="Tidak Aman!";

    cekaman.setText(String.valueOf(ckaman));

    bkmeter=bkolom/1000;

    hkmeter=hkolom/1000;

```

```

dmeter=d/1000;

x=(lpon/2)-(bkmeter/2);

BigDecimal simal22 = new BigDecimal(x);

simal22 = simal22.setScale(decimalPlace,BigDecimal.ROUND_UP);

x = simal22.doubleValue();

x2 = x;

tX=tmin+((lpon-x)*(tmaks-tmin))/lpon;

tX2 = tX;

h2=itpon*((tX-tmin)/(tmaks-tmin));

h2dua = (float)h2/1000;

BigDecimal desi4 = new BigDecimal(h2dua);

desi4 = desi4.setScale(dec2,BigDecimal.ROUND_UP);

h2dua = desi4.floatValue();

h2pakai = h2dua*1000;

h2meter=(float) (h2pakai/1000);

tegkritis=tmin+(lpon-akmeter)*((tmaks-tmin)/lpon);
vu1=akmeter*bpon*(tmaks+tegkritis)/2;

BigDecimal bide2 = new BigDecimal(vu1);

bide2 = bide2.setScale(des3,BigDecimal.ROUND_UP);

vu1 = bide2.doubleValue();

ggesertanah1.setText(String.valueOf(vu1));

vc1=0.16666667*Math.sqrt(fc)*bpon*d;

BigDecimal bede2 = new BigDecimal(vc1);

bede2 = bede2.setScale(des3,BigDecimal.ROUND_UP);

vc1 = bede2.doubleValue();

ggeserbeton1.setText(String.valueOf(vc1));

        }while(vu1 > (0.75*vc1));

    }

else

    {JOptionPane.showMessageDialog(null, "Ukuran tidak memenuhi standar, sistem
akan memberikan lebar pondasi yang sesuai",
"Peringatan",JOptionPane.WARNING_MESSAGE);

do{

```

```
itpon = itpon + 50;
hf=itpon/1000;

BigDecimal deci2 = new BigDecimal(hf);
deci2=deci2.setScale(des,BigDecimal.ROUND_DOWN);
hf=deci2.floatValue();

q=(hf*bjbeton)+(ht*bjtnh);
BigDecimal desi2 = new BigDecimal(q);
desi2=desi2.setScale(dec,BigDecimal.ROUND_DOWN);
q=desi2.floatValue();

bebanfak=Float.parseFloat(bfak.getText());
mfaktor=Double.parseDouble(Momenu.getText());
fc=Integer.parseInt(mutubeton.getText());
fy=Integer.parseInt(mutubaja.getText());
tijin=Double.parseDouble(Tijinnetto.getText());

if(bpon > lpon)
{
    bpon = (float)(bpon - 0.5);
    lpon = bpon*rasiodimensi;

    tegangan = (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));
    BigDecimal bd2 = new BigDecimal(lpon);
    bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
    lpon = bd2.doubleValue();
}
else
{
    bpon = (float)(bpon + 0.5);
    lpon = bpon*rasiodimensi;

    tegangan = (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));
    BigDecimal bd2 = new BigDecimal(lpon);

    bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
    lpon = bd2.doubleValue();
}
```

```

        }while (bpon>(2*lpon) || lpon>(2*bpon));

}lebarpond.setText (String.valueOf (bpon));panjangpond.setText (String.valueOf (lpon))
;tebalpond.setText (String.valueOf (itpon));

    if (tegangan<tijin)
    {

        itpon = itpon;

        tebalpond.setText (String.valueOf (itpon));
        hf=itpon/1000;
        BigDecimal deci2 = new BigDecimal (hf);
deci2=deci2.setScale (des,BigDecimal.ROUND_DOWN);

        hf=deci2.floatValue ();
        q=(hf*bjbeton)+(ht*bjtnh);

        BigDecimal desi2 = new BigDecimal (q);
desi2=desi2.setScale (dec,BigDecimal.ROUND_DOWN);

        q=desi2.floatValue ();

        bebanfak=Float.parseFloat (bfak.getText ());
mfaktor=Double.parseDouble (Momen.getMenu.getText ());

        fc=Integer.parseInt (mutubeton.getText ());
fy=Integer.parseInt (mutubaja.getText ());

        tijin=Double.parseDouble (Tijinnetto.getText ());

        bpon=Float.parseFloat (lebarpond.getText ());

        bkolom=Float.parseFloat (bkol.getText ());
        hkolom=Float.parseFloat (hkol.getText ());

        bponmili=bpon*1000;

        lpon = bpon*rasiodimensi;

        tegangan =
(bebanfak/ (bpon*lpon) + (mfaktor*6/ (bpon*lpon*lpon) +q));

        BigDecimal bd2 = new BigDecimal (lpon);
        bd2 = bd2.setScale (decimalPlace,BigDecimal.ROUND_UP);
        lpon = bd2.doubleValue ();

        panjangpond.setText (String.valueOf (lpon));

```

```

        lponmili=(int) (lpon*1000);

        rasioidim=bpon/lpon;
    }
    else
    {
        JOptionPane.showMessageDialog(null,"Sistem akan menambah tebal
        pondasi","Tegangan Maksimum melebihi Tegangan Ijin", JOptionPane.WARNING_MESSAGE);

        itpon = itpon+50;
        hf=itpon/1000;
        BigDecimal deci2 = new BigDecimal(hf);
        deci2=deci2.setScale(des,BigDecimal.ROUND_DOWN);
        hf=deci2.floatValue();

        q=(hf*bjbeton)+(ht*bjtnh);
        BigDecimal desi2 = new BigDecimal(q);
        desi2=desi2.setScale(dec,BigDecimal.ROUND_DOWN);
        q=desi2.floatValue();

        bebanfak=Float.parseFloat(bfak.getText());
        mfaktor=Double.parseDouble(Momenu.getText());
        fc=Integer.parseInt(mutubeton.getText());
        fy=Integer.parseInt(mutubaja.getText());
        tijin=Double.parseDouble(Tijinnetto.getText());
    do{
        if(bpon < lpon)
        {
            bpon = (float) (bpon + 0.5);
            lpon = bpon*rasioidimensi;

            tegangan =
            (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));

            BigDecimal bd2 = new BigDecimal(lpon);
            bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
            lpon = bd2.doubleValue();
        }
    }

```

```

else
{

    bpon = (float) (bpon + 0.5);

    lpon = bpon*rasiodimensi;

    tegangan =
    (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));

    BigDecimal bd2 = new BigDecimal(lpon);
    bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
    lpon = bd2.doubleValue();
}

//          lpon = bpon*rasiodimensi;
//          tegangan =
//          (bebanfak/(bpon*lpon)+(mfaktor*6/(bpon*lpon*lpon)+q));
//          BigDecimal bd2 = new BigDecimal(lpon);
//          bd2 = bd2.setScale(decimalPlace,BigDecimal.ROUND_UP);
//          lpon = bd2.doubleValue();

Graphics2D per = (Graphics2D) Panel.getGraphics();
per.clearRect(10, 15, 545, 570);
per.clearRect(10, 15, 370, 635);
panjangpond.setText("");
rasio.setText("");
bentuk.setText("");
tegmaks.setText("");
tegmin.setText("");
cekaman.setText("");
ggesertanah1.setText("");
ggeserbeton1.setText("");
ggesertanah2.setText("");
ggeserbeton2.setText("");
cek2arah.setText("");

}while (tegangan>=tijin);

}lebarpond.setText(String.valueOf(bpon));panjangpond.setText(String.valueOf(lpon));
;tebalpond.setText(String.valueOf(itpon));

```

```

}

else

{ JOptionPane.showMessageDialog(null,"Rasio By Harus Antara 0.5 sampai
2!", "Syarat", JOptionPane.WARNING_MESSAGE);

}rasioby.setText(String.valueOf(rasiodimensi));

tpon2 = tpon;

fy2 = fy;

fc2 = fc;

diametertulangan2 = diametertulangan;

bpon2 = bpon;

lpon2 = (float)lpon;

}

// Inisialisasi Variabel Global

} //GEN-LAST:event_prosesinputActionPerformed

private void lebarpondActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_lebarpondActionPerformed

// TODO add your handling code here:

} //GEN-LAST:event_lebarpondActionPerformed

private void ksActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_ksActionPerformed

// TODO add your handling code here:

} //GEN-LAST:event_ksActionPerformed

private void penulanganActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_penulanganActionPerformed

double Multimit, Multimit2, K, K2, Kmaks, beta1, a2, a3, As, As2, Assyarat,
Assyarat2, Aspilih, Aspilih2, Aspusat, Astepi, Astepi2, s1, s1_2, s1_3, s1_3_2,
s2, spilih2meter, spilih2meter_2, spilih2meter_3, spilih2meter_3_2, spilih1,
spilih2, spilih1_2, spilih2_2, spilih1_3, spilih1_3_2, spilih2_3, spilih2_3_2,
dmeter, dmeter2, dstmeter, dstmeter2, Assusut, luassusut, ssusut, ssusutmeter,
ssusutmili;

float spilih2mili, spilih2mili_2, spilih2mili_3, spilih2mili_3_2, x3,
jaraklpersegi, jarak2persegi, jaraksisipanjang, jaraksisipendekpusat,
jaraksisipendektepi, t;

int s3;

//tulangan sejajar sisi panjang:

Multimit = 0.5*tX2*x2*x2+0.3333333*(tmaks2-tX2)*x2*x2;

K = Multimit*1000000/(0.8*1000*d2*d2);

Kmaks = (382.5*0.85*(600+fy2-225*0.85)*fc2)/((600+fy2)*(600+fy2));

a2 = (1-Math.sqrt(1-(2*K/(0.85*fc2))))*d2;

int dec3 = 3;

```

```

BigDecimal bd = new BigDecimal(a2);

bd = bd.setScale(dec3, BigDecimal.ROUND_DOWN);

a2 = bd.doubleValue();

As = (0.85*fc2*a2*1000)/fy2;

BigDecimal bd2 = new BigDecimal(As);

bd2 = bd2.setScale(dec3, BigDecimal.ROUND_DOWN);

As = bd2.doubleValue();

Assyarat = (1.4*1000*d2)/fy2;

    Aspilih = Math.max(As, Assyarat);

s1 = (0.25*3.14*diametertulangan2*diametertulangan2*1000)/Aspilih;

BigDecimal bd3 = new BigDecimal(s1);

bd3 = bd3.setScale(dec3, BigDecimal.ROUND_DOWN);

s1 = bd3.doubleValue();

s2 = 2*tpon2;

s3 = 450;

spilih1 = Math.min(s1, s2);

spilih2 = Math.min(s3, spilih1);

spilih2meter = spilih2/1000;

int dec2 = 2;

BigDecimal bd4 = new BigDecimal(spilih2meter);

bd4 = bd4.setScale(dec2, BigDecimal.ROUND_DOWN);

spilih2meter = bd4.doubleValue();

spilih2mili = (float)spilih2meter*1000;

int ispilih2mili = (int)spilih2mili;

//tulangan sejajar sisi pendek:

int ds3, d3;

ds3 = (int)ds2+diametertulangan2;

d3 = (int)(tpon2-ds3);

x3 = (bpon2/2)-(hkmeter2/2);

Multimit2 = 0.5*tmaks2*x3*x3;

BigDecimal bd5 = new BigDecimal(Multimit2);

bd5 = bd5.setScale(dec3, BigDecimal.ROUND_DOWN);

Multimit2 = bd5.doubleValue();

```



```

K2 = Multimit2*1000000/(0.8*1000*d3*d3);
a3 = (1-Math.sqrt(1-(2*K2/(0.85*fc2))))*d3;
As2 = (0.85*fc2*a3*1000)/fy2;
BigDecimal bd6 = new BigDecimal(As2);
bd6 = bd6.setScale(dec3,BigDecimal.ROUND_DOWN);
As2 = bd6.doubleValue();
Assyarat2 = (1.4*1000*d3)/fy2;
Aspilih2 = Math.max(As2, Assyarat2);
BigDecimal bd7 = new BigDecimal(Aspilih2);
bd7 = bd7.setScale(dec3,BigDecimal.ROUND_DOWN);
Aspilih2 = bd7.doubleValue();

//Untuk jalur pusat selebar B;
Aspusat = (2*bpon2*Aspilih2)/(lpon2+bpon2);
s1_2 = (0.25*3.14*diametertulangan2*diametertulangan2*1000)/Aspusat;
BigDecimal bd8 = new BigDecimal(s1_2);
bd8 = bd8.setScale(dec3,BigDecimal.ROUND_DOWN);
s1_2 = bd8.doubleValue();
spilih1_2 = Math.min(s1_2, s2);
spilih2_2 = Math.min(s3, spilih1_2);
spilih2meter_2 = spilih2_2/1000;
BigDecimal bd9 = new BigDecimal(spilih2meter_2);
bd9 = bd9.setScale(dec2,BigDecimal.ROUND_DOWN);
spilih2meter_2 = bd9.doubleValue();
spilih2mili_2 = (float)spilih2meter_2*1000;
int ispilih2mili_2 =(int) spilih2mili_2;

//jalur tepi:
Astepi = Aspilih2-Aspusat;

BigDecimal bd10 = new BigDecimal(Astepi);
bd10 = bd10.setScale(dec3,BigDecimal.ROUND_DOWN);
Astepi = bd10.doubleValue();
s1_3 = (0.25*3.14*diametertulangan2*diametertulangan2*1000)/Astepi;
spilih1_3 = Math.min(s1_3, s2);

```

```

    spilih2_3 = Math.min(s3, spilih1_3);
    spilih2meter_3 = spilih2_3/1000;
    BigDecimal bd11 = new BigDecimal(spilih2meter_3);
    bd11 = bd11.setScale(dec2,BigDecimal.ROUND_DOWN);
    spilih2meter_3 = bd11.doubleValue();
    spilih2mili_3 = (float)spilih2meter_3*1000;
    int ispilih2mili_3 =(int) spilih2mili_3;
//tulangan susut
    t=tpon2/2;
    Assusut = 0.0018*1000*t;
    luassusut = 0.25*(22/7)*tulangsusut2*tulangsusut2;
    ssusut = (luassusut*1000)/Assusut;
    ssusutmeter = ssusut/1000;
    BigDecimal bd15 = new BigDecimal(ssusutmeter);
    bd15 = bd15.setScale(dec2,BigDecimal.ROUND_DOWN);
    ssusutmeter = bd15.doubleValue();
    ssusutmili = (ssusutmeter*1000);
    int issusutmili = (int) ssusutmili;
    if (rasioidim2 == 1)
    {
        //Desain Tulangan:
        dmeter = ((float) (diametertulangan2*(tpon2/30))/6)/1000;
        dstmeter = ((float) (tulangsusut2*(tpon2/25))/6)/1000;

        Graphics2D per = (Graphics2D) Panel.getGraphics();

        int ip2 = p2;
        //tulangan tampak samping
        per.setColor(Color.red);

        per.fillRoundRect (xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100), YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)-(int) (dmeter*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150));

        per.fillRoundRect (XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100), YRAKi2-

```

```

(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*dmeter*skalapilih2*100)-
(int) (dmeter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*100),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150));

    per.fillRoundRect(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-(int) (dmeter*skalapilih2*150),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*dmeter*skalapilih2*100)-
(int) (dmeter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150));

per.setColor(Color.blue);

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

    per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100) );

per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100));

per.setColor(Color.magenta);

per.drawLine(xKotakKc12, y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12+(int) (bkmeter2*skalapilih2*100),y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKc12+(int) (bkmeter2*skalapilih2*100),y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
y6_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
y6_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), XRAKi2-
(int) (selimutbtonmeter2*skalapilih2*100)+(int) (lpon2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

//tulangan susut

```

```

per.setColor(Color.magenta);

per.fillRoundRect(((xKotakKcl2-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100), ((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-(y2_2-(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2,
(int)(dstmeter*skalapilih2*150), (int)(dstmeter*skalapilih2*150),
(int)(dstmeter*skalapilih2*150), (int)(dstmeter*skalapilih2*150));

per.fillRoundRect(xKotakKcl2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100), (int)(dstmeter*skalapilih2*150),
(int)(dstmeter*skalapilih2*150), (int)(dstmeter*skalapilih2*150),
(int)(dstmeter*skalapilih2*150));

//tulangan tampak atas

per.setColor(Color.red);

per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100),
YRAKi2+(int)(selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100),
YRAKi2+(int)(bpon2*skalapilih2*100)-(int)(selimutbtonmeter2*skalapilih2*100));

//lengkungan merah

per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100),
YRAKi2+(int)(selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)-
(int)(1.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int)(selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100),
YRAKi2+(int)(bpon2*skalapilih2*100)-(int)(selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)-
(int)(1.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int)(bpon2*skalapilih2*100)-
(int)(selimutbtonmeter2*skalapilih2*100));

//lengkungan biru

per.setColor(Color.blue);

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(1.5*selimutbtonmeter2*skalapilih2*100) );

per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int)(0.75*bpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(1.5*selimutbtonmeter2*skalapilih2*100));

```

```

//tulsusut dr atas

per.setColor(Color.magenta);

per.drawLine(xKotakKcl2, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100));

per.drawLine(xKotakKcl2, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)));

per.drawLine(xKotakKcl2+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)),YRAKi2+(
int) (bpon2*skalapilih2*100)-((int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100)));

```

```
//panah
```

```
per.setColor(Color.magenta);
```

```
per.drawLine(((xKotakKc12-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int)(0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2, ((xKotakKc12-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int)(0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);
```

```
per.drawLine(((xKotakKc12-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int)(0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100, ((xKotakKc12-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int)(0.5*selimutbto
nmeter2*skalapilih2*100))-15,
(((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))- (y2_2-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);
```

```
per.drawLine(xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+(int)(0.5*dmeter*skala
pilih2*100), y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+(int)(0.5*dmeter*skalapilih2*100),
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100);
```

```
per.drawLine(xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+(int)(0.5*dmeter*skala
pilih2*100), y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100,
xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+15,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100);
```

```
per.setColor(Color.red);
```

```
per.drawLine(xKotakKc12+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapili
h2*100), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+30,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-75);
```

```
per.drawLine(xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+30,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-75,
xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+30+15,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-75);
```

```
per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*150),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);
```

```
per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*150),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50,
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150)+15, YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);
```

```

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*diameter*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*diameter*skalapilih2*100)-
(int) (diameter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (0.5*diameter*skalapilih2*150), YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*diameter*skalapilih2*100)-(int) (diameter*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-50);

per.setColor(Color.blue);

per.drawLine(x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

per.drawLine(x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-75,
x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15, YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

//tulangan sisi panjang

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15+5, YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), XRAKi2+((int) (bpon2*skalapilih2*100)/2)-20,
YRAKi2+(int) (0.75*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-5);

per.setColor(Color.red);

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili),
xKotakKc12+((int) (bkmeter2*skalapilih2*100)/2)+30+15+5,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-75);

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (0.5*diameter*skalapilih2*150)+15+5, YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*diameter*skalapilih2*100)-(int) (diameter*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-50);

AffineTransform miring = new AffineTransform();

Font theFont = per.getFont();

miring.rotate((Math.PI/2.0)*(-1));

Font theDerivedFont = theFont.deriveFont(miring);

per.setFont(theDerivedFont);

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), XRAKi2+(int) (lpon2*skalapilih2*100)-

```

```

(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)-5,
YRAKi2+((int)(bpon2*skalapilih2*100)/2)+25);

per.setFont(theFont);

per.setColor(Color.magenta);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), ((xKotakKc12-
(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+((int)(0.5*selimutbto
nmeter2*skalapilih2*100))-15-50,
((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-(y2_2-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili),
xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)+15+5,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), xKotakKc12+((int)(bkmeter2*skalapilih2*100)/2)-
25, YRAKi2+(int)(0.1875*bpon2*skalapilih2*100)-5);

per.setFont(theDerivedFont);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), YRAKi2+(int)(0.1875*lpon2*skalapilih2*100)-5,
YRAKi2+((int)(bpon2*skalapilih2*100)/2)+25);

per.setFont(theFont);

}

else

{

//syarat tulangan pondasi berdasarkan bentuk:

if(lpon2>=bpon2)

{ jarak1persegi = spilih2mili;

jarak2persegi = spilih2mili;

//Desain Tulangan:

dmeter = ((float)(diametertulangan2*(tpon2/30))/6)/1000;

dstmeter = ((float)(tulangansusut2*(tpon2/25))/6)/1000;

Graphics2D per = (Graphics2D) Panel.getGraphics();

int ip2 = p2;

//tulangan tampak samping

per.setColor(Color.red);

    per.fillRoundRect(xKotakKc12+(int)(bkmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), (int)(dmeter*skalapilih2*150),
(int)(dmeter*skalapilih2*150), (int)(dmeter*skalapilih2*150),
(int)(dmeter*skalapilih2*150));

    per.fillRoundRect(xKotakKc12+(int)(bkmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)+(int)((lpon2/8)*skalapilih2*100), YRAKi2-

```



```

(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*dmeter*skalapilih2*100)-
(int) (dmeter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150));

    per.fillRoundRect (XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*dmeter*skalapilih2*100)-
(int) (dmeter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*100),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150));

    per.fillRoundRect (x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-(int) (dmeter*skalapilih2*150),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*dmeter*skalapilih2*100)-
(int) (dmeter*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150),
(int) (dmeter*skalapilih2*150), (int) (dmeter*skalapilih2*150));

per.setColor(Color.blue);

    per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

    per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100) );

    per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100));

per.setColor(Color.magenta);

per.drawLine(xKotakKc12, y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12+(int) (bkmeter2*skalapilih2*100),y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), xKotakKc12,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), XRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKc12+(int) (bkmeter2*skalapilih2*100),y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
y6_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),

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```

y6_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), XRAKi2-
(int) (selimutbtonmeter2*skalapilih2*100)+(int) (lpon2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

//tulangan susut

per.setColor(Color.magenta);

per.fillRoundRect(((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.5*selimutbton
meter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2,
(int) (dstmeter*skalapilih2*150), (int) (dstmeter*skalapilih2*150),
(int) (dstmeter*skalapilih2*150), (int) (dstmeter*skalapilih2*150));

per.fillRoundRect(xKotakKcl2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), (int) (dstmeter*skalapilih2*150),
(int) (dstmeter*skalapilih2*150), (int) (dstmeter*skalapilih2*150),
(int) (dstmeter*skalapilih2*150));

//tulangan tampak atas

per.setColor(Color.red);

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),YRAKi2+(int) (se
limutbtonmeter2*skalapilih2*100), xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100));

//lengkungan merah

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100),

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xKotakKc12+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

//lengkungan biru

per.setColor (Color.blue);

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.75*b
pon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.75*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.75*b
pon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.75*bpon2*skalapil
ih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100) );

per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.75*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.75*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100));

//tulsusut dr atas

per.setColor (Color.magenta);

per.drawLine(xKotakKc12, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
xKotakKc12+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100));

per.drawLine(xKotakKc12, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+(int) (selimutbtonmeter2*skalap
ilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)));

per.drawLine(xKotakKc12+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),

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YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100));

    per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100));

    per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100
)- (int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+((int) (selimutbtonmeter2*skalap
ilih2*100));

    per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100
)- (int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100)),YRAKi2+(
int) (bpon2*skalapilih2*100)- (int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

//panah

per.setColor(Color.magenta);

per.drawLine(((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2, ((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

per.drawLine(((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100, ((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.5*selimutbto
nmeter2*skalapilih2*100))-15,
(((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))- (y2_2-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

per.drawLine(xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+(int) (0.5*dmeter*skala
pilih2*100), y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+(int) (0.5*dmeter*skalapilih2*100),
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-100);

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per.drawLine(xKotakKcl2+(int)(bkmeter2*skalapilih2*100)/2)+(int)(0.5*dmeter*skala
pilih2*100), y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100,
xKotakKcl2+(int)(bkmeter2*skalapilih2*100)/2)+15,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100);

per.setColor(Color.red);

per.drawLine(xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapili
h2*100), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)+(int)
((lpon2/8)*skalapilih2*100), y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

per.drawLine(xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapili
h2*100)+(int)((lpon2/8)*skalapilih2*100),
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-75,
xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)+(int)
((lpon2/8)*skalapilih2*100)+15, y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

per.drawLine(xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapili
h2*100)+(int)((lpon2/8)*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+(int)(bkmeter2*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)+(int)
((lpon2/8)*skalapilih2*100), y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*100),
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);

per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*150),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150), YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);

per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*150),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50,
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150)+15, YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)-(int)(dmeter*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);

per.setColor(Color.blue);

per.drawLine(x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-

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(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

    per.drawLine(x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-75,
x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15, YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

//tulangan sisi panjang

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), x3_2+(int) (0.75*lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15+5, YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
75);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), XRAKi2+((int) (bpon2*skalapilih2*100)/2)+25,
YRAKi2+(int) (0.75*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-5);

    per.setColor(Color.red);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_2),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100)+(int)
((lpon2/8)*skalapilih2*100)+15+5,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-75);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_3), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*150)+15+5, YRAKi2-(int) ((bpon2/10)*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)-(int) (dmeter*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-50);

    AffineTransform miring = new AffineTransform();

    Font theFont = per.getFont();

    miring.rotate((Math.PI/2.0)*(-1));

    Font theDerivedFont = theFont.deriveFont(miring);

    per.setFont(theDerivedFont);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_3), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) ((lpon2/8)*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100)-5,
YRAKi2+((int) (bpon2*skalapilih2*100)/2)+25);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_2), xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100)-5,
YRAKi2+((int) (bpon2*skalapilih2*100)/2)+25);

    per.setFont(theFont);

    per.setColor(Color.magenta);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), ((xKotakKcl2-

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(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))/2)+x3_2+((int)(0.5*selimutbtonmeter2*skalapilih2*100))-15-50,
((y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100))-(y2_2-(int)(0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili),
xKotakKcl2+((int)(bkmeter2*skalapilih2*100)/2)+15+5,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100)-100);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), xKotakKcl2+((int)(bkmeter2*skalapilih2*100)/2)-
25, YRAKi2+(int)(0.1875*bpon2*skalapilih2*100)-5);

    per.setFont(theDerivedFont);

    per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), XRAKi2+(int)(0.1875*lpon2*skalapilih2*100)-5,
YRAKi2+(int)(bpon2*skalapilih2*100)/2)+25);

    per.setFont(theFont);
}

else

{ jaraksisipanjang = spilih2mili;

jaraksisipendekpusat = spilih2mili_2;

jaraksisipendektepi = spilih2mili_3;

Astepi2 = Aspusat-Aspilih2;

BigDecimal bd12 = new BigDecimal(Astepi2);

bd12 = bd12.setScale(dec3,BigDecimal.ROUND_DOWN);

Astepi2 = bd12.doubleValue();

s1_3_2 = (0.25*3.14*diametertulangan2*diametertulangan2*1000)/Astepi2;

BigDecimal bd13 = new BigDecimal(s1_3_2);

bd13 = bd13.setScale(dec3,BigDecimal.ROUND_DOWN);

s1_3_2 = bd13.doubleValue();

spilih1_3_2 = Math.min(s1_3_2, s2);

spilih2_3_2 = Math.min(s3, spilih1_3_2);

spilih2meter_3_2 = (float)(spilih2_3_2/1000);

BigDecimal bd14 = new BigDecimal(spilih2meter_3_2);

bd14 = bd14.setScale(dec2,BigDecimal.ROUND_DOWN);

spilih2meter_3_2 = bd14.doubleValue();

spilih2mili_3_2 = (float)spilih2meter_3_2*1000;

dmeter = ((float)(diametertulangan2*(tpon2/30))/6)/1000;

dstmeter2 = ((float)(tulangansusut2*(tpon2/25))/6)/1000;

Graphics2D per = (Graphics2D) Panel.getGraphics();

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int ip2 = p2;

//tulangan tampak samping

per.setColor(Color.blue);

per.fillRoundRect(xKotakKc12+(int)(bkmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)+(int)((lpon2/8)*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
(int)(dmeter*skalapilih2*150), (int)(dmeter*skalapilih2*150),
(int)(dmeter*skalapilih2*150), (int)(dmeter*skalapilih2*150));

per.fillRoundRect(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-(int)(dmeter*skalapilih2*150),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
(int)(dmeter*skalapilih2*150), (int)(dmeter*skalapilih2*150),
(int)(dmeter*skalapilih2*150), (int)(dmeter*skalapilih2*150));

per.setColor(Color.red);

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.75*selimutbtonmeter2*skalapilih2*100)-
(int)(dmeter*skalapilih2*100), x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.75*selimutbtonmeter2*skalapilih2*100)-
(int)(dmeter*skalapilih2*100));

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(2*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.75*selimutbtonmeter2*skalapilih2*100)-
(int)(dmeter*skalapilih2*100) );

per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(2*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(lpon2*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2-(int)((bpon2/10)*skalapilih2*100)-
(int)(0.75*selimutbtonmeter2*skalapilih2*100)-(int)(dmeter*skalapilih2*100));

per.setColor(Color.magenta);

per.drawLine(xKotakKc12,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKc12+(int)(bkmeter2*skalapilih2*100),y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100), xKotakKc12,
y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),y3_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int)(selimutbtonmeter2*skalapilih2*100),YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.75*selimutbtonmeter2*skalapilih2*100)-
(int)(dmeter*skalapilih2*100));

per.drawLine(xKotakKc12+(int)(bkmeter2*skalapilih2*100),y2_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),
y6_2+(int)(0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100),

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y6_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), XRAKi2-
(int) (selimutbtonmeter2*skalapilih2*100)+(int) (lpon2*skalapilih2*100), YRAKi2-
(int) ((bpon2/10)*skalapilih2*100)-(int) (0.75*selimutbtonmeter2*skalapilih2*100)-
(int) (dmeter*skalapilih2*100));

//tulangan susut

per.fillRoundRect((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.5*selimutbton
meter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2,
(int) (dstmeter2*skalapilih2*150), (int) (dstmeter2*skalapilih2*150),
(int) (dstmeter2*skalapilih2*150), (int) (dstmeter2*skalapilih2*150));

per.fillRoundRect (xKotakKcl2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), (int) (dstmeter2*skalapilih2*150)
, (int) (dstmeter2*skalapilih2*150), (int) (dstmeter2*skalapilih2*150),
(int) (dstmeter2*skalapilih2*150));

//tulangan tampak atas

per.setColor (Color.blue);

per.drawLine (xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100)+(int) (0.5*dmeter*skalapilih2*100),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100));

per.drawLine (xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine (xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100),
YRAKi2+(int) (bpon2*skalapilih2*100)-(int) (selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+(int) (bkmeter2*skalapilih2*100)-
(int) (0.5*dmeter*skalapilih2*100)+(int) ((lpon2/8)*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

per.setColor (Color.red);

per.drawLine (x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (0.625*
bpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.625*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine (x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (0.625*
bpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2+(int) (0.625*bpon2*skalapi
lih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100) );

per.drawLine (x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.625*bpon2*skalapilih2*100)-

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(int) (0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.625*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.875*
bpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (lpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.875*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.875*
bpon2*skalapilih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),YRAKi2+(int) (0.875*bpon2*skalapi
lih2*100)-(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100) );

per.drawLine(x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.8755*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100), x3_2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.875*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (1.5*selimutbtonmeter2*skalapilih2*100));

//tulangan susut dari atas

per.setColor (Color.magenta);

per.drawLine(xKotakKc12, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
xKotakKc12+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100));

per.drawLine(xKotakKc12, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))),
XRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+(int) (selimutbtonmeter2*skalap
ilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)))+(int) (selimutbtonmeter2*skalapilih2*100));

per.drawLine(xKotakKc12+(int) (bkmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)));

per.drawLine(XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))), XRAKi2+(int) (lpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)))+(int) (selimutbtonmeter2*skalapilih2*100));

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        per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100));

        per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100), yKotakKcl2,
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100
)-
(int) (h2meter2*skalapilih2*100)),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100),
YRAKi2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)+((int) (selimutbtonmeter2*skalap
ilih2*100)));

        per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100),
yKotakKcl2+(int) (hkmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100));

per.drawLine(XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100
)-
(int) (h2meter2*skalapilih2*100)),YRAKi2+(int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100),
XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)+((int) (hf2*skalapilih2*100)-
(int) (h2meter2*skalapilih2*100))+((int) (selimutbtonmeter2*skalapilih2*100),YRAKi2+(
int) (bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-
(int) (selimutbtonmeter2*skalapilih2*100));

//panah

per.setColor(Color.magenta);

per.drawLine(((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2, ((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

per.drawLine(((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.75*selimutbto
nmeter2*skalapilih2*100), ((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100, ((xKotakKcl2-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+(int) (0.5*selimutbto
nmeter2*skalapilih2*100))-15,
((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-
(y2_2-(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

per.drawLine(xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+((int) (0.5*dmeter*skala
pilih2*100), y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100),
xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+((int) (0.5*dmeter*skalapilih2*100),
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-100);

per.drawLine(xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+((int) (0.5*dmeter*skala
pilih2*100), y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-100,
xKotakKcl2+((int) (bkmeter2*skalapilih2*100)/2)+15,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-100);

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per.setColor(Color.red);

    per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*100),
XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);

    per.drawLine(XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50,
XRAKi2+(int)(lpon2*skalapilih2*100)-
(int)((lpon2/8)*skalapilih2*100)+(int)(0.5*dmeter*skalapilih2*100)+15, YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*dmeter*skalapilih2*100)-
(int)(dmeter*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-50);

per.setColor(Color.blue);
per.drawLine(x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100),
x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

    per.drawLine(x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100), YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-75,
x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)+15, YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

//tulangan sisi panjang

per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), x3_2+(int)(0.75*lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)+15+5, YRAKi2-
(int)((bpon2/10)*skalapilih2*100)-(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
75);

AffineTransform miring = new AffineTransform();

Font theFont = per.getFont();

miring.rotate((Math.PI/2.0)*(-1));

Font theDerivedFont = theFont.deriveFont(miring);

per.setFont(theDerivedFont);

    per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili), xKotakKc12+(int)(bkmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*100)+(int)((lpon2/8)*skalapilih2*100)+15,
YRAKi2+(int)((bpon2*skalapilih2*100)/2)+25);

per.setFont(theFont);

per.setColor(Color.red);
per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_2), x3_2+(int)(lpon2*skalapilih2*100)-
(int)(0.5*selimutbtonmeter2*skalapilih2*100)-
(int)(0.5*dmeter*skalapilih2*150)+15+5, YRAKi2-(int)((bpon2/10)*skalapilih2*100)-

```

```

(int) (0.5*dmeter*skalapilih2*100)-(int) (dmeter*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)-50);

        per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_2), XRAKi2+((int) (bpon2*skalapilih2*100)/2)-85,
YRAKi2+(int) (0.625*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15);

        per.drawString("D"+Integer.toString(diametertulangan2)+"-
"+Integer.toString(ispilih2mili_3_2), XRAKi2+((int) (bpon2*skalapilih2*100)/2)-85,
YRAKi2+(int) (0.875*bpon2*skalapilih2*100)-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)+15);

per.setColor(Color.magenta);

        per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), ((xKotakKc12-
(x3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+x3_2+((int) (0.5*selimutbto
nmeter2*skalapilih2*100))-15-50,
((y3_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100))-(y2_2-
(int) (0.5*selimutbtonmeter2*skalapilih2*100)))/2)+y2_2-100);

        per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili),
xKotakKc12+((int) (bkmeter2*skalapilih2*100)/2)+15+5,
y2_2+(int) (0.5*selimutbtonmeter2*skalapilih2*100)-100);

per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), xKotakKc12+((int) (bkmeter2*skalapilih2*100)/2)-
25, YRAKi2+(int) (0.1875*bpon2*skalapilih2*100)-5);

per.setFont(theDerivedFont);

per.drawString("P"+Integer.toString(tulangansusut2)+"-
"+Integer.toString(issusutmili), XRAKi2+(int) (0.1875*lpon2*skalapilih2*100)-5,
YRAKi2+((int) (bpon2*skalapilih2*100)/2)+25);

        per.setFont(theFont);
    }
}

} //GEN-LAST:event_penulanganActionPerformed

private void hapusActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_hapusActionPerformed

    panjangpond.setText("");

    rasio.setText("");

    bentuk.setText("");

    tegmaks.setText("");

    tegmin.setText("");

    cekaman.setText("");

    ggesertanah1.setText("");

    ggeserbeton1.setText("");

    ggesertanah2.setText("");

    ggeserbeton2.setText("");

```

```

        cekZarah.setText("");
//        Panel.setDropTarget(null);

        Graphics2D per = (Graphics2D) Panel.getGraphics();

        per.clearRect(10, 15, 545, 570);

        per.clearRect(10, 15, 370, 635);

    }//GEN-LAST:event_hapusActionPerformed

    private void ggesertanah2ActionPerformed(java.awt.event.ActionEvent evt)
    { //GEN-FIRST:event_ggesertanah2ActionPerformed

        // TODO add your handling code here:

    } //GEN-LAST:event_ggesertanah2ActionPerformed

    private void ggeserbeton2ActionPerformed(java.awt.event.ActionEvent evt)
    { //GEN-FIRST:event_ggeserbeton2ActionPerformed

        // TODO add your handling code here:

    } //GEN-LAST:event_ggeserbeton2ActionPerformed

    private void menukeluarActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
    FIRST:event_menukeluarActionPerformed

        // TODO add your handling code here:

        this.dispose();

    } //GEN-LAST:event_menukeluarActionPerformed

    private void PFTSG4ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
    FIRST:event_PFTSG4ActionPerformed

        // TODO add your handling code here:

        new ProFonTel_SG4().setVisible(true);

    } //GEN-LAST:event_PFTSG4ActionPerformed

    private void caraActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
    FIRST:event_caraActionPerformed

        // TODO add your handling code here:

        new caramenggunakan().setVisible(true);

    } //GEN-LAST:event_caraActionPerformed

    /**
     * @param args the command line arguments
     */

    public static void main(String args[]) {

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

```

```
        public void run() {  
            new tugasAkhir().setVisible(true);  
        }  
    });  
}  
  
// Variables declaration - do not modify//GEN-BEGIN:variables  
private javax.swing.JTextField Momenu;  
private javax.swing.JMenuItem PFTSG4;  
private javax.swing.JPanel Panel;  
private javax.swing.JTextField Tijinnetto;  
private javax.swing.JTextField bentuk;  
private javax.swing.JPanel bentukpon;  
private javax.swing.JTextField bfak;  
private javax.swing.JTextField bjpon;  
private javax.swing.JTextField bjtanah;  
private javax.swing.JTextField bkol;  
private javax.swing.ButtonGroup btnGroup1;  
private javax.swing.JMenuItem cara;  
private javax.swing.JTextField cek2arah;  
private javax.swing.JTextField cekaman;  
private javax.swing.JTextField dsusut;  
private javax.swing.JTextField dtul;  
private javax.swing.JTextField ggeserbeton1;  
private javax.swing.JTextField ggeserbeton2;  
private javax.swing.JTextField ggesertanah1;  
private javax.swing.JTextField ggesertanah2;  
private javax.swing.JButton hapus;  
private javax.swing.JTextField hkol;  
private javax.swing.JLabel jLabel1;  
private javax.swing.JLabel jLabel10;  
private javax.swing.JLabel jLabel11;  
private javax.swing.JLabel jLabel12;  
private javax.swing.JLabel jLabel13;  
private javax.swing.JLabel jLabel14;
```

```
private javax.swing.JLabel jLabel115;
private javax.swing.JLabel jLabel116;
private javax.swing.JLabel jLabel117;
private javax.swing.JLabel jLabel118;
private javax.swing.JLabel jLabel119;
private javax.swing.JLabel jLabel12;
private javax.swing.JLabel jLabel120;
private javax.swing.JLabel jLabel121;
private javax.swing.JLabel jLabel122;
private javax.swing.JLabel jLabel123;
private javax.swing.JLabel jLabel124;
private javax.swing.JLabel jLabel125;
private javax.swing.JLabel jLabel126;
private javax.swing.JLabel jLabel127;
private javax.swing.JLabel jLabel128;
private javax.swing.JLabel jLabel129;
private javax.swing.JLabel jLabel13;
private javax.swing.JLabel jLabel130;
private javax.swing.JLabel jLabel131;
private javax.swing.JLabel jLabel132;
private javax.swing.JLabel jLabel133;
private javax.swing.JLabel jLabel134;
private javax.swing.JLabel jLabel135;
private javax.swing.JLabel jLabel136;
private javax.swing.JLabel jLabel137;
private javax.swing.JLabel jLabel138;
private javax.swing.JLabel jLabel139;
private javax.swing.JLabel jLabel14;
private javax.swing.JLabel jLabel140;
private javax.swing.JLabel jLabel141;
private javax.swing.JLabel jLabel142;
private javax.swing.JLabel jLabel143;
private javax.swing.JLabel jLabel144;
private javax.swing.JLabel jLabel145;
```



```
private javax.swing.JLabel jLabel146;
private javax.swing.JLabel jLabel147;
private javax.swing.JLabel jLabel148;
private javax.swing.JLabel jLabel149;
private javax.swing.JLabel jLabel15;
private javax.swing.JLabel jLabel150;
private javax.swing.JLabel jLabel151;
private javax.swing.JLabel jLabel152;
private javax.swing.JLabel jLabel153;
private javax.swing.JLabel jLabel154;
private javax.swing.JLabel jLabel155;
private javax.swing.JLabel jLabel156;
private javax.swing.JLabel jLabel157;
private javax.swing.JLabel jLabel158;
private javax.swing.JLabel jLabel16;
private javax.swing.JLabel jLabel17;
private javax.swing.JLabel jLabel18;
private javax.swing.JLabel jLabel19;
private javax.swing.JMenu jMenu1;
private javax.swing.JMenu jMenu2;
private javax.swing.JMenuBar jMenuBar1;
private javax.swing.JPanel jPanel1;
private javax.swing.JPanel jPanel2;
private javax.swing.JPanel jPanel4;
private javax.swing.JRadioButton kd;
private javax.swing.JRadioButton ks;
private javax.swing.JRadioButton kt;
private javax.swing.JTextField lebarpond;
private javax.swing.JMenuItem menukeluar;
private javax.swing.JTextField mutubaja;
private javax.swing.JTextField mutubeton;
private javax.swing.JTextField panjangpond;
private javax.swing.JButton penulangan;
private javax.swing.JButton prosesinput;
```

```
private javax.swing.JTextField rasio;  
private javax.swing.JTextField rasioby;  
private javax.swing.JTextField sbeton;  
private javax.swing.JTextField tebalpond;  
private javax.swing.JTextField tegmaks;  
private javax.swing.JTextField tegmin;  
private javax.swing.JTextField tetan;  
// End of variables declaration//GEN-END:variables  
}
```

