basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

JUNE EXAMINATION 2015
INFORMATION TECHNOLOGY P1
GRADE 10

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DURATION: 2HRS   DATE: 12 – 06 – 2015
MARKS: 100

INSTRUCTIONS TO LEARNERS:

1. Ensure that this paper contains 7 pages and 3 questions.
2. Answer all questions.
3. Save your work at every 10 minute interval.
4. Ensure that your work is being saved in the folder you are going to submit for marking.
5. Take heed of the time stipulation for each question. Follow it to avoid incomplete answers.
6. Check your exam folder and ensure that you have the following files :
   - A Netbeans project called **June2015G10** that contains:
     - A package called **JunePac**
     - A frame class called **Q2Frame**
     - A frame class called **RatingFrame.**
7. Insert your name in the first line of every class.

SCENARIO

Your school as commissioned you as the IT learner to help manage the media centre. The media centre offers services to the learners and the teachers as follows:
> ➢ *Borrowing and returning to library books and educational DVD's.*
> ➢ *Use of the internet per time.*
> ➢ *Photocopying and printing.*

QUESTION ONE [SCRATCH PROGRAMMING] – 40 Minutes

The media centre requires each learner to have a code which is a randomly generated seven digit code.
This code when entered by the user must be tested. Open the application in Scratch called **Quest1**.
You will find that there are four sprites created. Complete the script to validate the code entered by the user as requested below:

Two lists have been created for you. You are required to declare all other variables that you may need to complete the application.

Hint: Study this script is an example to help solve the problem.
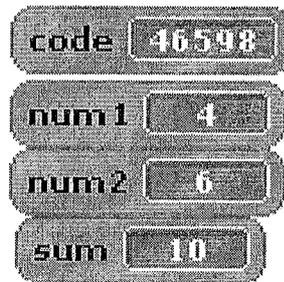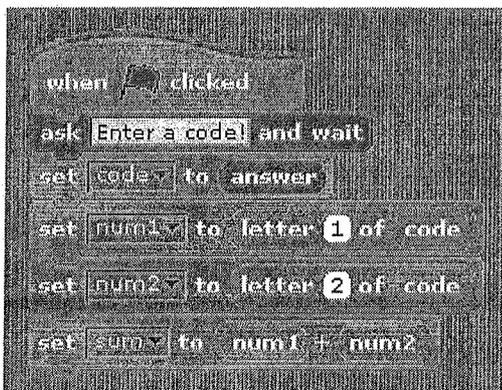
1.1. The sprite on the left(Input Sprite) should accept the data from the table below and store it in the required lists. You should only enter the details for the number of names suggested by the user. Do not enter the entire table.
The capturer should ask the user to enter the number of names he wants to test, followed by the name list and the code list. Program the sprite using loops to populate the respective lists with the data from the table as specified by the user. (10)

NAME	CODE
Rodanne	1232414
René	3147238
Preleen	8365389
Trevor	4236891
Réann	7642531
Jonathan	5627819

1.2. Write the scripts for the respective sprites that will validate the codes in the given list.

1.2.1. The second sprite (on the right) helps in the validation process by doing the following:

  ❖ Extracts the middle number from the code list.
  ❖ Determines if the number is prime or not and sets a variable called **"prime"** to equal to "true" or "false" respectively. (12)

1.2.2. The third sprite will also assist the validation process by:

  ❖ Extracting every value in an even index position and accumulate a sum for these values.
  ❖ The sum of the first and the last digits in the code must also be added.
  ❖ It then checks to see if the two sums are the same and assigns the value "true" if they are or "false" if they are not. (10)

1.2.3. The last sprite simply displays the following:
  ❖ The name of the person entered, the code entered for that person and the "Valid" or "Invalid" according to the results e.g. of output: **Rodanne , 1232414 , VALID!** (4)

Use the picture of the scratch code:
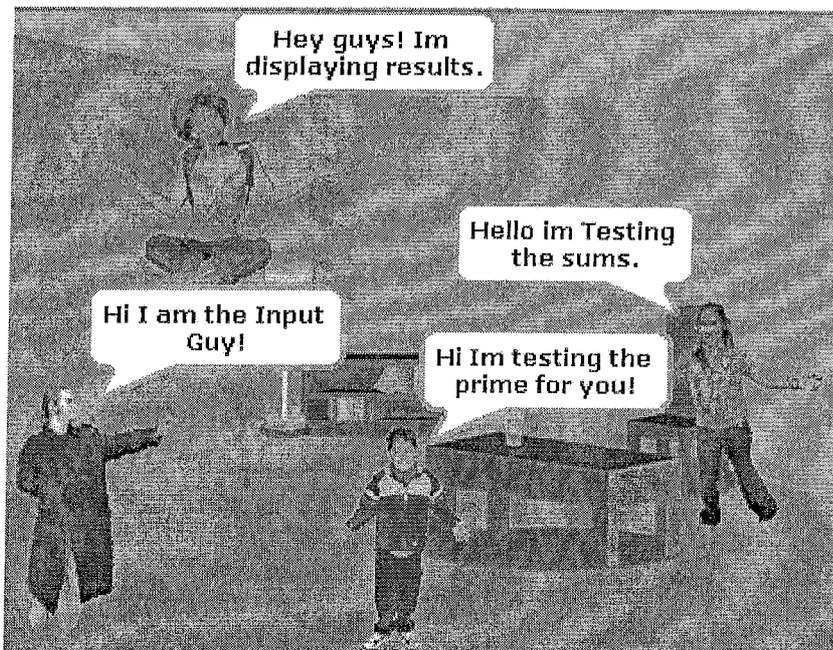
[36]

QUESTION TWO [JAVA PROGRAMMING] 40 minutes

You are requested to develop apps to assist in the management of the media centre.
The first app that your help is required in is the app designed by the learners to aid the process of calculating charges for the photocopier.
The school has a pricing system based on the grades and the number of copies made, for each learner and teacher that may use the system. Educators will only pay for colour copies as stated below.
The learners will pay as follows:

GRADE 8 AND 9	• 50c per copy for <=15 copies •An additional 30c is charged for every copy more than 15 •For every copy more than 50copies, an additional R1 is charged.
GRADE 10 AND 11	•80c for every copy <=25 copies. •Additional 50c per copy for more than 25 copies •R1.20 is charged for every copy over 50 copies
GRADE 12	•The first 15 copies is free •From 16 to 35 copies, a charge of R1.10 is charged per copy •An additional cost of 50c per copy is charged for copies above 35

Nb. Each colour copy costs R4 per colour copy. Colour copies are only made for teachers.

Open the project **June2015G10** and execute the **Q1Frame**. The program has no functionality.
Insert your name as a comment in the first line of each class.

Study the GUI below and complete the code for the respective buttons and components.
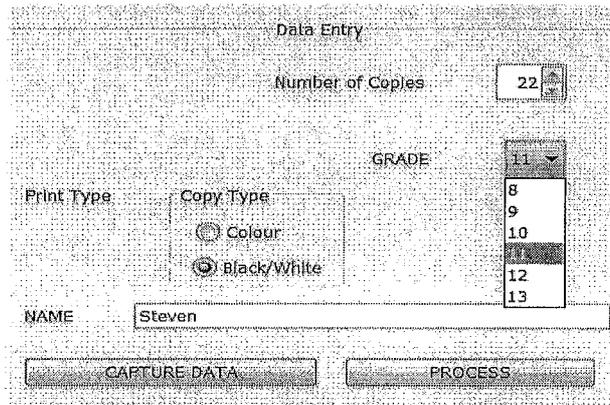
2.1. Program the components in the **Data Entry** panel as follows:

    2.1.1. Format the jPanel3 to a border entitled Quotation. (3)
    2.1.2. Set the spinner in the   from 0 to **100**, type integer, using the properties window. (3)
    2.1.3. Set the combo box to select the grade(8 – 13) as integers. (3)
    2.1.4. Initialise the radio buttons into the same group. (3)
    2.1.5. Place a title at the top of jPanel1 that reads: **"Photocopy Application"** (3)

2.2. Declare the global variables for the following data entries in the **Q1Frame** class. (3)

Name of Identifier	Type	Description
numCopies	Integer value	The number of copies made by the client – accessed from spinner
gr	Integer	A value in the range 8 to 13 – combo box selection. Nb. 13 represents a teacher
name	Text	The name of the client – jTextfield
numBlack	Integer	The number of black copies made – jTextfield
numCol	Integer	The number of colour copies.

2.3. Write code, for the **CAPTURE DATA** button in the <u>Data Entry</u> panel, that assigns the values upon entry to the global variables.

Note:
   ✓ The number for colour must be entered only if Colour radio button is selected.
   ✓ If Black/White is selected, the number is taken from the text field on the top.
   ✓ If a learner selects a colour photocopy, display a suitable message to ask them to reselect.
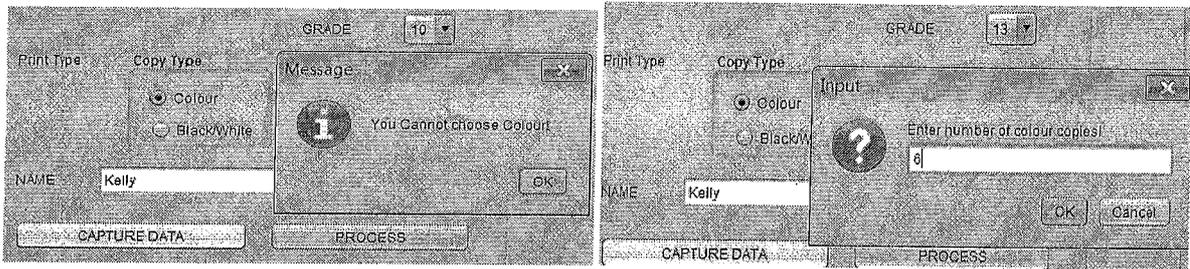
(8)

2.4. Program the **PROCESS** button to calculate the price that the client must pay. Take note of the following:

➢ Teachers will only pay for colour copies. Black and white copies are free for teachers. Therefore the number of copies for teachers will be for colour only.

Use the sample run below:
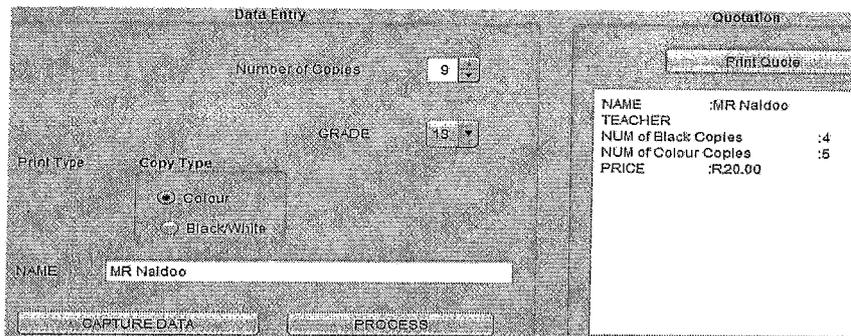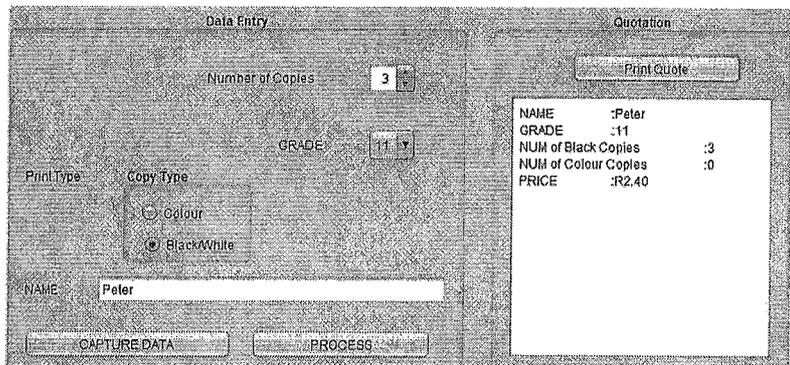
(8)

2.5. Program the **Print Quote** button in the Quotation panel to display the output as shown in the sample run.

(5)


```
NAME          :Daniel
TEACHER
NUM of Black Copies        :9
NUM of Colour Copies       :5
PRICE         :R20.00
```
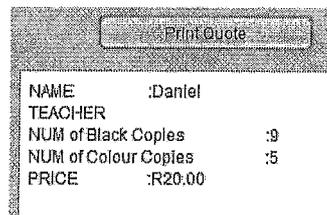
[40]

QUESTION THREE   [40 minutes]

Learners who use the internet have to be given a rating category. Each learner is given a code which is made up of their Last name and four digits e.g. "Pillay8540". The four digit code consists of:
  ➢ The number of times the person used the internet out of 100, i.e. the first two digits. This must be a two digit number.
  ➢ The second two digits is a randomly generated number from ten to ninety nine.

3.1. You are required to complete the application that allows the user to enter his/her last name and the number of times they used the internet as a single string e.g. "Pillay85". Then you should join the randomly generated number to the other input e.g. "Pillay8540" where 40 is generated.
Form the code and display it in the appropriate textfield given. (8)

3.2. The rating of the learner depends on the first two digits after the last name. The rating is worked out as follows:

Value	Rating
0<=Value<30	D
30<=Value<50	C
50<=Value<70	B
70<=Value<=100	A

Study the GUI frame called **RatingFrame** and complete the code as requested and program the GET RATING!! button.

3.2.1. Use the code formed to extract the number of times the internet was used. (4)

3.2.2. Use the of times to determine the rating(assume the number of times represents a %) according to the rating table given above. (12)

[24]

TOTAL P1 = 100

GREENBURY SECONDARY SCHOOL
DEPARTMEN⋯ ⋯S & SCIENCES
H.O.⋯ ⋯R L PILLAY
9/6/2015
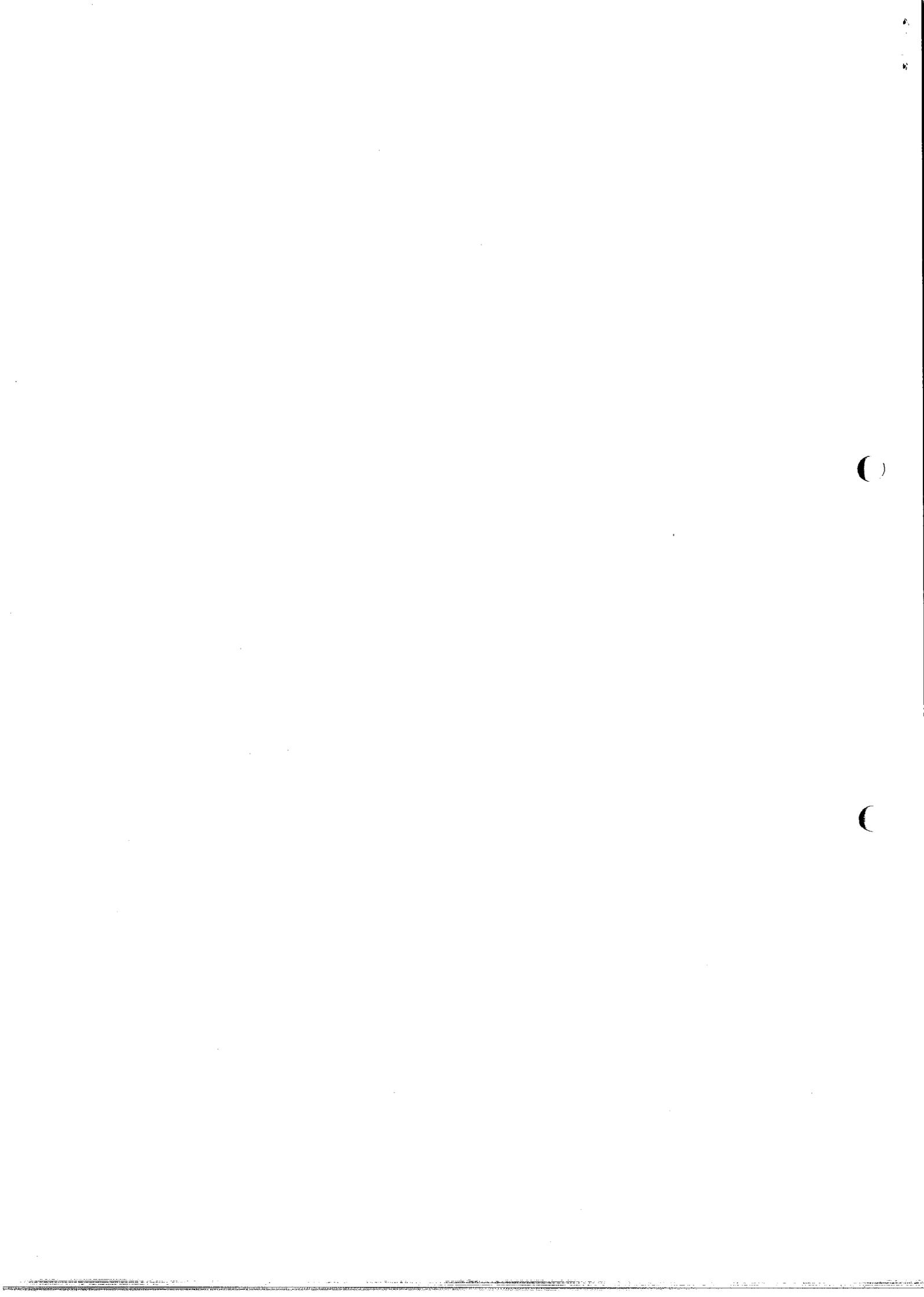
```
1 /*
2  * To change this template, choose Tools | Templates
3  * and open the template in the editor.
4  */
5 package JunePac;
6
7 import javax.swing.JOptionPane;
8
9 /**
10  *
11  * @author comp13
12  */
13 import java.text.*;
14 public class Q2Frame extends javax.swing.JFrame {
15
16     /**
17      * Creates new form Q1Frame
18      */
19     private int numCopies;
20     private int numBlack;
21     private int numCol;
22     private int gr;
23     private String name;
24     private double price = 0.00;
25     DecimalFormat d = new DecimalFormat("0.00");
26     public Q2Frame() {
27         initComponents();
28         this.setLocationRelativeTo(null);
29         this.setTitle("Photocopy Application");
30
31     }
32
33     /**
34      * This method is called from within the constructor to initialize the form.
35      * WARNING: Do NOT modify this code. The content of this method is always
36      * regenerated by the Form Editor.
37      */
38     @SuppressWarnings("unchecked")
39     // <editor-fold defaultstate="collapsed" desc="Generated Code">
40     private void initComponents() {
41
42         buttonGroup1 = new javax.swing.ButtonGroup();
43         jLabel5 = new javax.swing.JLabel();
44         jPanel1 = new javax.swing.JPanel();
45         jPanel2 = new javax.swing.JPanel();
46         jLabel1 = new javax.swing.JLabel();
47         jSpinner1 = new javax.swing.JSpinner();
48         jLabel2 = new javax.swing.JLabel();
49         jComboBox1 = new javax.swing.JComboBox();
50         jPanel4 = new javax.swing.JPanel();
51         jRadioButton1 = new javax.swing.JRadioButton();
52         jRadioButton2 = new javax.swing.JRadioButton();
53         jLabel3 = new javax.swing.JLabel();
54         jLabel4 = new javax.swing.JLabel();
55         jTextField1 = new javax.swing.JTextField();
56         jButton1 = new javax.swing.JButton();
57         jButton2 = new javax.swing.JButton();
58         jPanel3 = new javax.swing.JPanel();
59         jScrollPane1 = new javax.swing.JScrollPane();
60         jTextArea1 = new javax.swing.JTextArea();
61         jButton3 = new javax.swing.JButton();
```

```
62
63        jLabel5.setText("jLabel5");
64
65        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
66
67        jPanel2.setBorder(javax.swing.BorderFactory.createTitledBorder(null, "Data Entry",
javax.swing.border.TitledBorder.CENTER, javax.swing.border.TitledBorder.DEFAULT_POSITION));
68
69        jLabel1.setText("Number of Copies");
70
71        jSpinner1.setModel(new javax.swing.SpinnerNumberModel(0, 0, 100, 1));
72
73        jLabel2.setText("GRADE");
74
75        jComboBox1.setModel(new javax.swing.DefaultComboBoxModel(new String[] { "8", "9", "10", "11", "12", "13" }));
76
77        jPanel4.setBorder(javax.swing.BorderFactory.createTitledBorder("Copy Type"));
78
79        buttonGroup1.add(jRadioButton1);
80        jRadioButton1.setText("Colour");
81
82        buttonGroup1.add(jRadioButton2);
83        jRadioButton2.setText("Black/White");
84
85        javax.swing.GroupLayout jPanel4Layout = new javax.swing.GroupLayout(jPanel4);
86        jPanel4.setLayout(jPanel4Layout);
87        jPanel4Layout.setHorizontalGroup(
88          jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
89          .addGroup(jPanel4Layout.createSequentialGroup()
90            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
91            .addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
92              .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, jPanel4Layout.createSequentialGroup()
93                .addComponent(jRadioButton1)
94                .addGap(36, 36, 36))
95              .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, jPanel4Layout.createSequentialGroup()
96                .addComponent(jRadioButton2)
97                .addContainerGap())))
98        );
99        jPanel4Layout.setVerticalGroup(
100         jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
101         .addGroup(jPanel4Layout.createSequentialGroup()
102           .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
103           .addComponent(jRadioButton1)
104           .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
105           .addComponent(jRadioButton2))
106        );
107
108       jLabel3.setText("Print Type ");
109
110       jLabel4.setText("NAME");
111
112       jButton1.setText("CAPTURE DATA");
113       jButton1.addActionListener(new java.awt.event.ActionListener() {
114         public void actionPerformed(java.awt.event.ActionEvent evt) {
115           jButton1ActionPerformed(evt);
116         }
117       });
118
119       jButton2.setText("PROCESS");
120       jButton2.addActionListener(new java.awt.event.ActionListener() {
121         public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
122          jButton2ActionPerformed(evt);
123      }
124    });
125
126    javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
127    jPanel2.setLayout(jPanel2Layout);
128    jPanel2Layout.setHorizontalGroup(
129       jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
130       .addGroup(jPanel2Layout.createSequentialGroup()
131       .addContainerGap()
132       .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
133          .addGroup(jPanel2Layout.createSequentialGroup()
134          .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
135              .addComponent(jLabel4, javax.swing.GroupLayout.PREFERRED_SIZE, 58,
javax.swing.GroupLayout.PREFERRED_SIZE)
136              .addComponent(jLabel3))
137          .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
138              .addGroup(jPanel2Layout.createSequentialGroup()
139              .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
140              .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
141                 .addGroup(jPanel2Layout.createSequentialGroup()
142                 .addGap(0, 0, Short.MAX_VALUE)
143                 .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
144                     .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 58,
javax.swing.GroupLayout.PREFERRED_SIZE)
145                     .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 125,
javax.swing.GroupLayout.PREFERRED_SIZE))
146                 .addGap(26, 26, 26)
147                 .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
148                     .addComponent(jComboBox1, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
149                     .addComponent(jSpinner1, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.PREFERRED_SIZE, 47, javax.swing.GroupLayout.PREFERRED_SIZE))
150                 .addGap(30, 30, 30))
151             .addComponent(jTextField1))
152             .addContainerGap())
153         .addGroup(jPanel2Layout.createSequentialGroup()
154             .addGap(33, 33, 33)
155             .addComponent(jPanel4, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
156             .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))))
157       .addGroup(jPanel2Layout.createSequentialGroup()
158         .addComponent(jButton1, javax.swing.GroupLayout.PREFERRED_SIZE, 198,
javax.swing.GroupLayout.PREFERRED_SIZE)
159         .addGap(18, 18, 18)
160         .addComponent(jButton2, javax.swing.GroupLayout.PREFERRED_SIZE, 170,
javax.swing.GroupLayout.PREFERRED_SIZE)
161         .addGap(0, 21, Short.MAX_VALUE))))
162    );
163    jPanel2Layout.setVerticalGroup(
164       jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
165       .addGroup(jPanel2Layout.createSequentialGroup()
166       .addGap(19, 19, 19)
167       .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
168         .addComponent(jLabel1)
169         .addComponent(jSpinner1, javax.swing.GroupLayout.PREFERRED_SIZE, 30,
javax.swing.GroupLayout.PREFERRED_SIZE))
170       .addGap(33, 33, 33)
171       .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
172         .addComponent(jComboBox1, javax.swing.GroupLayout.PREFERRED_SIZE, 32,
```

```
    javax.swing.GroupLayout.PREFERRED_SIZE)
173             .addComponent(jLabel2))
174           .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
175           .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
176             .addComponent(jLabel3)
177             .addComponent(jPanel4, javax.swing.GroupLayout.PREFERRED_SIZE,
    javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
178           .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
    javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
179           .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
180             .addComponent(jLabel4)
181             .addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED_SIZE,
    javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
182           .addGap(24, 24, 24)
183           .addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
184             .addComponent(jButton1)
185             .addComponent(jButton2))
186           .addContainerGap())
187       );
188
189       jPanel3.setBorder(javax.swing.BorderFactory.createTitledBorder(null, "Quotation",
    javax.swing.border.TitledBorder.CENTER, javax.swing.border.TitledBorder.DEFAULT_POSITION));
190
191       jTextArea1.setColumns(20);
192       jTextArea1.setRows(5);
193       jScrollPane1.setViewportView(jTextArea1);
194
195       jButton3.setText("Print Quote");
196       jButton3.addActionListener(new java.awt.event.ActionListener() {
197           public void actionPerformed(java.awt.event.ActionEvent evt) {
198               jButton3ActionPerformed(evt);
199           }
200       });
201
202       javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
203       jPanel3.setLayout(jPanel3Layout);
204       jPanel3Layout.setHorizontalGroup(
205           jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
206           .addGroup(jPanel3Layout.createSequentialGroup()
207             .addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
208               .addGroup(jPanel3Layout.createSequentialGroup()
209                 .addGap(65, 65, 65)
210                 .addComponent(jButton3, javax.swing.GroupLayout.PREFERRED_SIZE, 161,
    javax.swing.GroupLayout.PREFERRED_SIZE))
211               .addGroup(jPanel3Layout.createSequentialGroup()
212                 .addContainerGap()
213                 .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 251,
    javax.swing.GroupLayout.PREFERRED_SIZE)))
214             .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
215       );
216       jPanel3Layout.setVerticalGroup(
217           jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
218           .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, jPanel3Layout.createSequentialGroup()
219             .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
220             .addComponent(jButton3)
221             .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
222             .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 251,
    javax.swing.GroupLayout.PREFERRED_SIZE)
223             .addGap(7, 7, 7))
224       );
225
```

```
226      javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
227      jPanel1.setLayout(jPanel1Layout);
228      jPanel1Layout.setHorizontalGroup(
229        jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
230        .addGroup(jPanel1Layout.createSequentialGroup()
231          .addGap(29, 29, 29)
232          .addComponent(jPanel2, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
233          .addGap(18, 18, 18)
234          .addComponent(jPanel3, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
235          .addContainerGap(97, Short.MAX_VALUE))
236      );
237      jPanel1Layout.setVerticalGroup(
238        jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
239        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, jPanel1Layout.createSequentialGroup()
240          .addGap(42, 42, 42)
241          .addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
242            .addComponent(jPanel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
243            .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
244          .addContainerGap())
245      );
246
247      javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
248      getContentPane().setLayout(layout);
249      layout.setHorizontalGroup(
250        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
251        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
252          .addContainerGap()
253          .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
254          .addContainerGap())
255      );
256      layout.setVerticalGroup(
257        layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
258        .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
259          .addContainerGap()
260          .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
261          .addContainerGap())
262      );
263
264      pack();
265    }// </editor-fold>
266
267    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
268      numCopies = (int)(jSpinner1.getValue());
269      JOptionPane.showMessageDialog(null,numCopies+"");
270      String grd = (String)(jComboBox1.getSelectedItem());
271      gr = Integer.parseInt(grd);
272      name = jTextField1.getText();
273      if(jRadioButton1.isSelected()) {
274        if (gr == 13) {
275          numCol = Integer.parseInt(JOptionPane.showInputDialog("Enter number of colour copies!"));
276          numBlack = numCopies - numCol;
277        }
278
279        else {
280              numBlack = numCopies;
```

```
281
282                 JOptionPane.showMessageDialog(null,"You Cannot choose Colour!");
283         }
284
285
286     }
287     else {
288         numBlack = numCopies;
289     }
290 }
291
292 private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
293
294     switch (gr) {
295         case 8: case 9: {
296                 if(numCopies>15 && numCopies >50){
297                     price = 15*0.5 + 35*0.8 + (numCopies - 50)*1.8;
298                 }else {
299                     if(numCopies >15 && numCopies<=50){
300                         price = 15*0.5 + (numCopies -15) *0.8;
301                     }
302                     else{ price = numCopies*0.5;}
303                 }
304                 } break;
305         case 10: case 11: {
306                 if(numCopies>25 && numCopies >50){
307                     price = 15*0.8 + 25*1.3 + (numCopies - 50)*2.5;
308                 }else {
309                     if(numCopies >15 && numCopies<=50){
310                         price = 15*0.8 + (numCopies -25) *1.3;
311                     }
312                     else{ price = numCopies*0.8;}
313                 }
314                 } break;
315         case 12: {
316                 if(numCopies>15 && numCopies >35){
317                     price =  (35-15)*1.1 + (numCopies - 35)*1.6;
318                 }else {
319                     if(numCopies >15 && numCopies<=35){
320                         price = (numCopies -15) *1.1;
321                     }
322
323                 }
324
325     } break;
326         case  13 : {
327                 price = numCol * 4;
328         } break;
329
330     }
331 //   deault: JOptionPane.showMessageDialog(null,"INVALID!");
332 }
333
334 private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
335     jTextArea1.append("NAME \t:"+name+"\n");
336     if(gr == 13){
337         jTextArea1.append("TEACHER\n");
338     }
339     else {
340         jTextArea1.append("GRADE \t:"+gr+"\n");
341     }
```

```
342    jTextArea1.append("NUM of Black Copies \t:"+numBlack+"\n");
343    jTextArea1.append("NUM of Colour Copies \t:"+numCol+"\n");
344    jTextArea1.append("PRICE \t:R"+d.format(price)+"\n");
345  }
346
347  /**
348   * @param args the command line arguments
349   */
350  public static void main(String args[]) {
351    /* Set the Nimbus look and feel */
352    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
353    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
354     * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
355     */
356    try {
357      for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {
358        if ("Nimbus".equals(info.getName())) {
359          javax.swing.UIManager.setLookAndFeel(info.getClassName());
360          break;
361        }
362      }
363    } catch (ClassNotFoundException ex) {
364      java.util.logging.Logger.getLogger(Q2Frame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
365    } catch (InstantiationException ex) {
366      java.util.logging.Logger.getLogger(Q2Frame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
367    } catch (IllegalAccessException ex) {
368      java.util.logging.Logger.getLogger(Q2Frame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
369    } catch (javax.swing.UnsupportedLookAndFeelException ex) {
370      java.util.logging.Logger.getLogger(Q2Frame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
371    }
372    //</editor-fold>
373
374    /* Create and display the form */
375    java.awt.EventQueue.invokeLater(new Runnable() {
376      public void run() {
377        new Q2Frame().setVisible(true);
378      }
379    });
380  }
381  // Variables declaration - do not modify
382  private javax.swing.ButtonGroup buttonGroup1;
383  private javax.swing.JButton jButton1;
384  private javax.swing.JButton jButton2;
385  private javax.swing.JButton jButton3;
386  private javax.swing.JComboBox jComboBox1;
387  private javax.swing.JLabel jLabel1;
388  private javax.swing.JLabel jLabel2;
389  private javax.swing.JLabel jLabel3;
390  private javax.swing.JLabel jLabel4;
391  private javax.swing.JLabel jLabel5;
392  private javax.swing.JPanel jPanel1;
393  private javax.swing.JPanel jPanel2;
394  private javax.swing.JPanel jPanel3;
395  private javax.swing.JPanel jPanel4;
396  private javax.swing.JRadioButton jRadioButton1;
397  private javax.swing.JRadioButton jRadioButton2;
398  private javax.swing.JScrollPane jScrollPane1;
399  private javax.swing.JSpinner jSpinner1;
400  private javax.swing.JTextArea jTextArea1;
401  private javax.swing.JTextField jTextField1;
402  // End of variables declaration
```