



UMS
UNIVERSITI MALAYSIA SABAH

OBJECT ORIENTED PROGRAMMING (KK14203)

SEMESTER 2 (2019/2020)

PROJECT 2

NAME	NO MATRIC	NO TELEFON
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JAVA CODE CALCULATOR GUI

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1  /*
2    NAME : NURMUNIRAH BINTI ASRI
3    MATRIC NO : BI19110077
4    PROJECT 2 : CALCULATOR (GUI)
5  */
6
7  import java.awt.*;
8  import java.awt.event.*;
9  import javax.swing.*;
10 import javax.swing.event.*;
11 //required for border
12 import javax.swing.BorderFactory;
13 import javax.swing.border.Border;
14 //required for exception
15 import java.io.IOException;
16
17 public class Project2_Calculator extends JFrame {
18     private ButtonGroup buttonGroup1;
19     private JButton jButton1;
20     private JButton jButton10;
21     private JButton jButton11;
22     private JButton jButton12;
23     private JButton jButton13;
24     private JButton jButton14;
25     private JButton jButton15;
26     private JButton jButton16;
27     private JButton jButton17;
28     private JButton jButton18;
29     private JButton jButton2;
30     private JButton jButton3;
31     private JButton jButton4;
32     private JButton jButton5;
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33     private JButton jButton6;
34     private JButton jButton7;
35     private JButton jButton8;
36     private JButton jButton9;
37     private JLabel jLabel1;
38     private JRadioButton jButtonon1;
39     private JRadioButton jButtonon2;
40     private JTextField jTextField2;
41
42     double num, ans;
43     int calculation;
44
45     public Project2_Calculator() {
46         initComponents();
47         jButtonon2.setEnabled(true); //ON button
disable
48         jButtonon1.setEnabled(false); //OFF button
enable
49
50     }
51
52     private void initComponents() {
53
54         buttonGroup1 = new ButtonGroup();
55         jButtonon1 = new JRadioButton();
56         jButtonon2 = new JRadioButton();
57         jButton1 = new JButton();
58         jButton2 = new JButton();
59         jButton3 = new JButton();
60         jButton4 = new JButton();
61         jButton5 = new JButton();
62         jButton6 = new JButton();
63         jButton7 = new JButton();
64         jButton8 = new JButton();

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65         jButton9 = new JButton();
66         jButton10 = new JButton();
67         jButton11 = new JButton();
68         jButton12 = new JButton();
69         jButton13 = new JButton();
70         jButton14 = new JButton();
71         jButton15 = new JButton();
72         jButton16 = new JButton();
73         jButton17 = new JButton();
74         jButton18 = new JButton();
75         jTextField2 = new JTextField();
76         jLabel1 = new JLabel();
77
78         buttonGroup1.add(jRadioButton1);
79         jRadioButton1.setText("ON");
80         jRadioButton1.addActionListener(new
ActionListener() {
81             public void actionPerformed(ActionEvent evt) {
82                 jRadioButton1ActionPerformed(evt);
83             }
84         });
85
86         buttonGroup1.add(jRadioButton2);
87         jRadioButton2.setText("OFF");
88         jRadioButton2.addActionListener(new
ActionListener() {
89             public void actionPerformed(ActionEvent evt) {
90                 jRadioButton2ActionPerformed(evt);
91             }
92         });
93
94         jButton1.setText("C");
95         jButton1.addActionListener(new ActionListener()
{

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```

96         public void actionPerformed(ActionEvent evt) {
97             jButton1ActionPerformed(evt);
98         }
99     });
100
101     jButton2.setText("<-");
102     jButton2.addActionListener(new ActionListener()
103     {
104         public void actionPerformed(ActionEvent evt)
105         {
106             jButton2ActionPerformed(evt);
107         }
108     });
109
110     jButton3.setText("4");
111     jButton3.addActionListener(new ActionListener()
112     {
113         public void actionPerformed(ActionEvent evt)
114         {
115             jButton3ActionPerformed(evt);
116         }
117     });
118
119     jButton4.setText("5");
120     jButton4.addActionListener(new ActionListener()
121     {
122         public void actionPerformed(ActionEvent evt)
123         {
124             jButton4ActionPerformed(evt);
125         }
126     });
127
128     jButton5.setText("6");
129     jButton5.addActionListener(new ActionListener()
130     {
131         public void actionPerformed(ActionEvent evt)
132         {
133             jButton5ActionPerformed(evt);
134         }
135     });
136 }
```

```
{
124         public void actionPerformed(ActionEvent evt)
125         {
126             jButton5ActionPerformed(evt);
127         }
128     });
129     jButton6.setText("-");
130     jButton6.addActionListener(new ActionListener()
131     {
132         public void actionPerformed(ActionEvent evt)
133         {
134             jButton6ActionPerformed(evt);
135         }
136     });
137     jButton7.setText("1");
138     jButton7.addActionListener(new ActionListener()
139     {
140         public void actionPerformed(ActionEvent evt)
141         {
142             jButton7ActionPerformed(evt);
143         }
144     });
145     jButton8.setText("2");
146     jButton8.addActionListener(new ActionListener()
147     {
148         public void actionPerformed(ActionEvent evt)
149         {
150             jButton8ActionPerformed(evt);
151         }
152     });
153 }
```

```
150     jButton9.setText("3");
151     jButton9.addActionListener(new ActionListener()
152     {
153         public void actionPerformed(ActionEvent evt)
154         {
155             jButton9ActionPerformed(evt);
156         }
157     });
158
159     jButton10.setText("+");
160     jButton10.addActionListener(new ActionListener()
161     {
162         public void actionPerformed(ActionEvent evt)
163         {
164             jButton10ActionPerformed(evt);
165         }
166     });
167
168     jButton11.setText("7");
169     jButton11.addActionListener(new ActionListener()
170     {
171         public void actionPerformed(ActionEvent evt)
172         {
173             jButton11ActionPerformed(evt);
174         }
175     });
```

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176     });
177
178     jButton13.setText("9");
179     jButton13.addActionListener(new ActionListener()
180     {
181         public void actionPerformed(ActionEvent evt)
182         {
183             jButton13ActionPerformed(evt);
184         }
185     });
186
187     jButton14.setText("*");
188     jButton14.addActionListener(new ActionListener()
189     {
190         public void actionPerformed(ActionEvent evt)
191         {
192             jButton14ActionPerformed(evt);
193         }
194     });
195
196     jButton15.setText("=");
197     jButton15.addActionListener(new ActionListener()
198     {
199         public void actionPerformed(ActionEvent evt)
200         {
201             jButton15ActionPerformed(evt);
202         }
203     });
204
205     jButton16.setText("/");
206     jButton16.addActionListener(new ActionListener()
207     {
208         public void actionPerformed(ActionEvent evt)
209         {
210             jButton16ActionPerformed(evt);
211         }
212     });
213
214     jButton17.setText("%");
215     jButton17.addActionListener(new ActionListener()
216     {
217         public void actionPerformed(ActionEvent evt)
218         {
219             jButton17ActionPerformed(evt);
220         }
221     });
222
223     jButton18.setText("^");
224     jButton18.addActionListener(new ActionListener()
225     {
226         public void actionPerformed(ActionEvent evt)
227         {
228             jButton18ActionPerformed(evt);
229         }
230     });
231
232     jButton19.setText("<");
233     jButton19.addActionListener(new ActionListener()
234     {
235         public void actionPerformed(ActionEvent evt)
236         {
237             jButton19ActionPerformed(evt);
238         }
239     });
240
241     jButton20.setText(">");
242     jButton20.addActionListener(new ActionListener()
243     {
244         public void actionPerformed(ActionEvent evt)
245         {
246             jButton20ActionPerformed(evt);
247         }
248     });
249
250     jButton21.setText("C");
251     jButton21.addActionListener(new ActionListener()
252     {
253         public void actionPerformed(ActionEvent evt)
254         {
255             jButton21ActionPerformed(evt);
256         }
257     });
258
259     jButton22.setText("X");
260     jButton22.addActionListener(new ActionListener()
261     {
262         public void actionPerformed(ActionEvent evt)
263         {
264             jButton22ActionPerformed(evt);
265         }
266     });
267
268     jButton23.setText("E");
269     jButton23.addActionListener(new ActionListener()
270     {
271         public void actionPerformed(ActionEvent evt)
272         {
273             jButton23ActionPerformed(evt);
274         }
275     });
276
277     jButton24.setText("D");
278     jButton24.addActionListener(new ActionListener()
279     {
280         public void actionPerformed(ActionEvent evt)
281         {
282             jButton24ActionPerformed(evt);
283         }
284     });
285
286     jButton25.setText("S");
287     jButton25.addActionListener(new ActionListener()
288     {
289         public void actionPerformed(ActionEvent evt)
290         {
291             jButton25ActionPerformed(evt);
292         }
293     });
294
295     jButton26.setText("A");
296     jButton26.addActionListener(new ActionListener()
297     {
298         public void actionPerformed(ActionEvent evt)
299         {
300             jButton26ActionPerformed(evt);
301         }
302     });
303
304     jButton27.setText("M");
305     jButton27.addActionListener(new ActionListener()
306     {
307         public void actionPerformed(ActionEvent evt)
308         {
309             jButton27ActionPerformed(evt);
310         }
311     });
312
313     jButton28.setText("I");
314     jButton28.addActionListener(new ActionListener()
315     {
316         public void actionPerformed(ActionEvent evt)
317         {
318             jButton28ActionPerformed(evt);
319         }
320     });
321
322     jButton29.setText("N");
323     jButton29.addActionListener(new ActionListener()
324     {
325         public void actionPerformed(ActionEvent evt)
326         {
327             jButton29ActionPerformed(evt);
328         }
329     });
330
331     jButton30.setText("P");
332     jButton30.addActionListener(new ActionListener()
333     {
334         public void actionPerformed(ActionEvent evt)
335         {
336             jButton30ActionPerformed(evt);
337         }
338     });
339
340     jButton31.setText("B");
341     jButton31.addActionListener(new ActionListener()
342     {
343         public void actionPerformed(ActionEvent evt)
344         {
345             jButton31ActionPerformed(evt);
346         }
347     });
348
349     jButton32.setText("V");
350     jButton32.addActionListener(new ActionListener()
351     {
352         public void actionPerformed(ActionEvent evt)
353         {
354             jButton32ActionPerformed(evt);
355         }
356     });
357
358     jButton33.setText("T");
359     jButton33.addActionListener(new ActionListener()
360     {
361         public void actionPerformed(ActionEvent evt)
362         {
363             jButton33ActionPerformed(evt);
364         }
365     });
366
367     jButton34.setText("L");
368     jButton34.addActionListener(new ActionListener()
369     {
370         public void actionPerformed(ActionEvent evt)
371         {
372             jButton34ActionPerformed(evt);
373         }
374     });
375
376     jButton35.setText("K");
377     jButton35.addActionListener(new ActionListener()
378     {
379         public void actionPerformed(ActionEvent evt)
380         {
381             jButton35ActionPerformed(evt);
382         }
383     });
384
385     jButton36.setText("J");
386     jButton36.addActionListener(new ActionListener()
387     {
388         public void actionPerformed(ActionEvent evt)
389         {
390             jButton36ActionPerformed(evt);
391         }
392     });
393
394     jButton37.setText("H");
395     jButton37.addActionListener(new ActionListener()
396     {
397         public void actionPerformed(ActionEvent evt)
398         {
399             jButton37ActionPerformed(evt);
400         }
401     });
402
403     jButton38.setText("G");
404     jButton38.addActionListener(new ActionListener()
405     {
406         public void actionPerformed(ActionEvent evt)
407         {
408             jButton38ActionPerformed(evt);
409         }
410     });
411
412     jButton39.setText("F");
413     jButton39.addActionListener(new ActionListener()
414     {
415         public void actionPerformed(ActionEvent evt)
416         {
417             jButton39ActionPerformed(evt);
418         }
419     });
420
421     jButton40.setText("U");
422     jButton40.addActionListener(new ActionListener()
423     {
424         public void actionPerformed(ActionEvent evt)
425         {
426             jButton40ActionPerformed(evt);
427         }
428     });
429
430     jButton41.setText("O");
431     jButton41.addActionListener(new ActionListener()
432     {
433         public void actionPerformed(ActionEvent evt)
434         {
435             jButton41ActionPerformed(evt);
436         }
437     });
438
439     jButton42.setText("Q");
440     jButton42.addActionListener(new ActionListener()
441     {
442         public void actionPerformed(ActionEvent evt)
443         {
444             jButton42ActionPerformed(evt);
445         }
446     });
447
448     jButton43.setText("W");
449     jButton43.addActionListener(new ActionListener()
450     {
451         public void actionPerformed(ActionEvent evt)
452         {
453             jButton43ActionPerformed(evt);
454         }
455     });
456
457     jButton44.setText("Y");
458     jButton44.addActionListener(new ActionListener()
459     {
460         public void actionPerformed(ActionEvent evt)
461         {
462             jButton44ActionPerformed(evt);
463         }
464     });
465
466     jButton45.setText("Z");
467     jButton45.addActionListener(new ActionListener()
468     {
469         public void actionPerformed(ActionEvent evt)
470         {
471             jButton45ActionPerformed(evt);
472         }
473     });
474
475     jButton46.setText("X");
476     jButton46.addActionListener(new ActionListener()
477     {
478         public void actionPerformed(ActionEvent evt)
479         {
480             jButton46ActionPerformed(evt);
481         }
482     });
483
484     jButton47.setText("C");
485     jButton47.addActionListener(new ActionListener()
486     {
487         public void actionPerformed(ActionEvent evt)
488         {
489             jButton47ActionPerformed(evt);
490         }
491     });
492
493     jButton48.setText("V");
494     jButton48.addActionListener(new ActionListener()
495     {
496         public void actionPerformed(ActionEvent evt)
497         {
498             jButton48ActionPerformed(evt);
499         }
500     });
501
502     jButton49.setText("T");
503     jButton49.addActionListener(new ActionListener()
504     {
505         public void actionPerformed(ActionEvent evt)
506         {
507             jButton49ActionPerformed(evt);
508         }
509     });
510
511     jButton50.setText("L");
512     jButton50.addActionListener(new ActionListener()
513     {
514         public void actionPerformed(ActionEvent evt)
515         {
516             jButton50ActionPerformed(evt);
517         }
518     });
519
520     jButton51.setText("K");
521     jButton51.addActionListener(new ActionListener()
522     {
523         public void actionPerformed(ActionEvent evt)
524         {
525             jButton51ActionPerformed(evt);
526         }
527     });
528
529     jButton52.setText("J");
530     jButton52.addActionListener(new ActionListener()
531     {
532         public void actionPerformed(ActionEvent evt)
533         {
534             jButton52ActionPerformed(evt);
535         }
536     });
537
538     jButton53.setText("H");
539     jButton53.addActionListener(new ActionListener()
540     {
541         public void actionPerformed(ActionEvent evt)
542         {
543             jButton53ActionPerformed(evt);
544         }
545     });
546
547     jButton54.setText("G");
548     jButton54.addActionListener(new ActionListener()
549     {
550         public void actionPerformed(ActionEvent evt)
551         {
552             jButton54ActionPerformed(evt);
553         }
554     });
555
556     jButton55.setText("F");
557     jButton55.addActionListener(new ActionListener()
558     {
559         public void actionPerformed(ActionEvent evt)
560         {
561             jButton55ActionPerformed(evt);
562         }
563     });
564
565     jButton56.setText("U");
566     jButton56.addActionListener(new ActionListener()
567     {
568         public void actionPerformed(ActionEvent evt)
569         {
570             jButton56ActionPerformed(evt);
571         }
572     });
573
574     jButton57.setText("O");
575     jButton57.addActionListener(new ActionListener()
576     {
577         public void actionPerformed(ActionEvent evt)
578         {
579             jButton57ActionPerformed(evt);
580         }
581     });
582
583     jButton58.setText("Q");
584     jButton58.addActionListener(new ActionListener()
585     {
586         public void actionPerformed(ActionEvent evt)
587         {
588             jButton58ActionPerformed(evt);
589         }
590     });
591
592     jButton59.setText("W");
593     jButton59.addActionListener(new ActionListener()
594     {
595         public void actionPerformed(ActionEvent evt)
596         {
597             jButton59ActionPerformed(evt);
598         }
599     });
600
601     jButton60.setText("Y");
602     jButton60.addActionListener(new ActionListener()
603     {
604         public void actionPerformed(ActionEvent evt)
605         {
606             jButton60ActionPerformed(evt);
607         }
608     });
609
610     jButton61.setText("Z");
611     jButton61.addActionListener(new ActionListener()
612     {
613         public void actionPerformed(ActionEvent evt)
614         {
615             jButton61ActionPerformed(evt);
616         }
617     });
618
619     jButton62.setText("X");
620     jButton62.addActionListener(new ActionListener()
621     {
622         public void actionPerformed(ActionEvent evt)
623         {
624             jButton62ActionPerformed(evt);
625         }
626     });
627
628     jButton63.setText("C");
629     jButton63.addActionListener(new ActionListener()
630     {
631         public void actionPerformed(ActionEvent evt)
632         {
633             jButton63ActionPerformed(evt);
634         }
635     });
636
637     jButton64.setText("V");
638     jButton64.addActionListener(new ActionListener()
639     {
640         public void actionPerformed(ActionEvent evt)
641         {
642             jButton64ActionPerformed(evt);
643         }
644     });
645
646     jButton65.setText("T");
647     jButton65.addActionListener(new ActionListener()
648     {
649         public void actionPerformed(ActionEvent evt)
650         {
651             jButton65ActionPerformed(evt);
652         }
653     });
654
655     jButton66.setText("L");
656     jButton66.addActionListener(new ActionListener()
657     {
658         public void actionPerformed(ActionEvent evt)
659         {
660             jButton66ActionPerformed(evt);
661         }
662     });
663
664     jButton67.setText("K");
665     jButton67.addActionListener(new ActionListener()
666     {
667         public void actionPerformed(ActionEvent evt)
668         {
669             jButton67ActionPerformed(evt);
670         }
671     });
672
673     jButton68.setText("J");
674    
```



```

202         jButton16ActionPerformed(evt);
203     }
204 });
205
206     jButton17.setText("0");
207     jButton17.addActionListener(new ActionListener()
208     {
209         public void actionPerformed(ActionEvent evt)
210         {
211             jButton17ActionPerformed(evt);
212         }
213     });
214
215     jButton18.setText(".");
216     jButton18.addActionListener(new ActionListener()
217     {
218         public void actionPerformed(ActionEvent evt)
219         {
220             jButton18ActionPerformed(evt);
221         }
222     });
223
224     jTextField2.setFont(new Font("Tahoma", 1, 12));
225     // NOI18N
226     jTextField2.setHorizontalAlignment(JTextField.RIGHT);
227
228     javax.swing.GroupLayout layout = new
229     GroupLayout(getContentPane());
230     getContentPane().setLayout(layout);
231     layout.setHorizontalGroup(
232     layout.createParallelGroup(GroupLayout.Alignment.LEADING)
233     .addGroup(layout.createSequentialGroup()

```



```
        GroupLayout.DEFAULT_SIZE,
        GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
244                .addComponent(jButton17,GroupL
        GroupLayout.PREFERRED_SIZE, 57, GroupLayout.PREFERRED_SIZE))
245                .addGap(18, 18, 18)
246                .addGroup(layout.createParallelGroup
        GroupLayout.Alignment.LEADING, false)
247                .addComponent(jButton8,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
248                .addComponent(jButton4,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
249                .addComponent(jButton12,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
250                .addComponent(jButton18,
        GroupLayout.PREFERRED_SIZE, 56,
        GroupLayout.PREFERRED_SIZE))
251                .addGap(18, 18, 18)
252                .addGroup(layout.createParallelGroup
        GroupLayout.Alignment.LEADING, false)
253                .addComponent(jButton5,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
254                .addComponent(jButton9,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
255                .addComponent(jButton13,
        GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
        Short.MAX_VALUE)
256                .addComponent(jButton15,
        GroupLayout.PREFERRED_SIZE, 62,
        GroupLayout.PREFERRED_SIZE))
```

```

257                .addGap(18, 18, 18)
258                .addGroup(layout.createParallelGroup(
 GroupLayout.Alignment.LEADING)
259                .addGroup(layout.createSequentialGroup()
260                .addGap(0, 0,
 Short.MAX_VALUE)
261                .addGroup(layout.createParallelGroup(
 GroupLayout.Alignment.LEADING, false)
262                .addComponent(jButton6,
 GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
 Short.MAX_VALUE)
263                .addComponent(jButton14,
 GroupLayout.DEFAULT_SIZE, GroupLayout.DEFAULT_SIZE,
 Short.MAX_VALUE)
264                .addComponent(jButton16,
 GroupLayout.PREFERRED_SIZE,
69, GroupLayout.PREFERRED_SIZE)))
265                .addComponent(jButton10,
 GroupLayout.PREFERRED_SIZE, 69,
 GroupLayout.PREFERRED_SIZE)))
266                .addGroup(layout.createSequentialGroup()
267                .addGap(18, 18, 18)
268                .addComponent(jTextField2)))
269        );
270        layout.setVerticalGroup(
271
 layout.createParallelGroup(GroupLayout.Alignment.LEADING)
272        .addGroup(layout.createSequentialGroup()
273        .addGap(26, 26, 26)
274        .addGroup(layout.createParallelGroup(
 GroupLayout.Alignment.TRAILING, false)
275        .addComponent(jTextField2,

```

```
GroupLayout.PREFERRED_SIZE, 73, GroupLayout.PREFERRED_SIZE)
276         .addGroup(layout.createSequentialGroup
p()
277         .addComponent(jLabel1, GroupLayout.
PREFERRED_SIZE, 22, GroupLayout.PREFERRED_SIZE)
278         .addPreferredGap(LayoutStyle.Comp
onentPlacement.RELATED)
279         .addComponent(jRadioButton1)
280         .addPreferredGap(LayoutStyle.Comp
onentPlacement.UNRELATED)
281         .addComponent(jRadioButton2)))
282         .addGap(4, 4, 4)
283         .addGroup(layout.createParallelGroup(Gro
upLayout.Alignment.BASELINE)
284         .addComponent(jButton8,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
285         .addComponent(jButton9,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
286         .addComponent(jButton7,
GroupLayout.PREFERRED_SIZE, 44, GroupLayout.PREFERRED_SIZE)
287         .addComponent(jButton2,
GroupLayout.PREFERRED_SIZE, 44, GroupLayout.PREFERRED_SIZE)
288         .addComponent(jButton10,
GroupLayout.PREFERRED_SIZE, 45,
GroupLayout.PREFERRED_SIZE))
289         .addPreferredGap(LayoutStyle.ComponentPl
acement.RELATED)
290         .addGroup(layout.createParallelGroup(Gro
upLayout.Alignment.LEADING)
291         .addGroup(layout.createParallelGroup(
javax.swing.GroupLayout.Alignment.BASELINE)
292         .addComponent(jButton4,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
293         .addComponent(jButton5,
```

```
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
294         .addComponent(jButton6,
GroupLayout.PREFERRED_SIZE, 45,
GroupLayout.PREFERRED_SIZE))
295         .addGroup(GroupLayout.Alignment.TRAILING,
layout.createParallelGroup(GroupLayout.Alignment.BASELINE)
296         .addComponent(jButton3,
GroupLayout.PREFERRED_SIZE, 44, GroupLayout.PREFERRED_SIZE)
297         .addComponent(jButton1,
GroupLayout.PREFERRED_SIZE, 50,
GroupLayout.PREFERRED_SIZE)))
298         .addPreferredGap(LayoutStyle.ComponentPl
acement.RELATED)
299         .addGroup(layout.createParallelGroup(Gro
upLayout.Alignment.BASELINE)
300         .addComponent(jButton13,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
301         .addComponent(jButton12,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
302         .addComponent(jButton11,
GroupLayout.PREFERRED_SIZE, 44, GroupLayout.PREFERRED_SIZE)
303         .addComponent(jButton14,
GroupLayout.PREFERRED_SIZE, 45,
GroupLayout.PREFERRED_SIZE))
304         .addPreferredGap(LayoutStyle.ComponentPl
acement.RELATED)
305         .addGroup(layout.createParallelGroup(Gro
upLayout.Alignment.BASELINE)
306         .addComponent(jButton16,
GroupLayout.PREFERRED_SIZE, 45, GroupLayout.PREFERRED_SIZE)
307         .addComponent(jButton15,
GroupLayout.PREFERRED_SIZE, 47, GroupLayout.PREFERRED_SIZE)
308         .addComponent(jButton18,
```

```

GridLayout.PREFERRED_SIZE, 47, GridLayout.PREFERRED_SIZE)
309         .addComponent(jButton17,
GridLayout.PREFERRED_SIZE, 44,
GridLayout.PREFERRED_SIZE))
310         .addContainerGap(22, Short.MAX_VALUE)
311     );
312
313     pack();
314 }
315
316     private void jButton4ActionPerformed(ActionEvent evt)
317     {
318         jTextField2.setText(jTextField2.getText()+"5");
319     }
320
321     private void jButton8ActionPerformed(ActionEvent evt)
322     {
323         jTextField2.setText(jTextField2.getText()+"2");
324     }
325
326     private void jButton12ActionPerformed(ActionEvent
327     evt) {
328         jTextField2.setText(jTextField2.getText()+"8");
329     }
330
331     private void jButton18ActionPerformed(ActionEvent
332     evt) {
333         jTextField2.setText(jTextField2.getText()+".");
334     }

```

```
335
336     private void
jRadioButton2ActionPerformed(ActionEvent evt) {    //Off
button
337         disabled(); //call disable method
338     }
339
340     private void jButton7ActionPerformed(ActionEvent evt)
{
341         jTextField2.setText( jTextField2.getText()+ "1");
342     }
343
344     private void jButton9ActionPerformed(ActionEvent evt)
{
345         jTextField2.setText( jTextField2.getText()+ "3");
346     }
347
348     private void jButton3ActionPerformed(ActionEvent evt)
{
349         jTextField2.setText( jTextField2.getText()+ "4");
350     }
351
352     private void jButton5ActionPerformed(ActionEvent evt)
{
353         jTextField2.setText( jTextField2.getText()+ "6");
354     }
355
356     private void jButton11ActionPerformed(ActionEvent
evt) {
357         jTextField2.setText( jTextField2.getText()+ "7");
358     }
359
360     private void jButton17ActionPerformed(ActionEvent
evt) {
```



```
361         jTextField2.setText( jTextField2.getText()+ "0");
362     }
363
364     private void jButton15ActionPerformed(ActionEvent
evt) {
365         math_operation();
366         jLabel1.setText("");
367     }
368
369     private void jButton10ActionPerformed(ActionEvent
evt) {    //addition button
370         num = Double.parseDouble(jTextField2.getText());
371         calculation = 1;
372         jTextField2.setText("");
373         jLabel1.setText(num + "+");
374
375     }
376
377     private void jButton6ActionPerformed(ActionEvent evt)
{    //subtraction button
378         num = Double.parseDouble(jTextField2.getText());
379         calculation = 2;
380         jTextField2.setText("");
381         jLabel1.setText(num + "-");
382     }
383
384     private void jButton14ActionPerformed(ActionEvent
evt) {    //multiplication button
385         num = Double.parseDouble(jTextField2.getText());
386         calculation = 3;
387         jTextField2.setText("");
388         jLabel1.setText(num + "*");
389     }
390
```

```

391     private void jButton16ActionPerformed(ActionEvent
evt) {    //divide button
392         num = Double.parseDouble(jTextField2.getText());
393         calculation = 4;
394         jTextField2.setText("");
395         jLabel1.setText(num + "/" );
396     }
397
398     private void jButton1ActionPerformed(ActionEvent evt)
{ //button clear
399         jTextField2.setText("");
400     }
401
402     private void
jRadioButton1ActionPerformed(ActionEvent evt) {    //on
button
403         enable(); //call method for enable
404     }
405
406     private void jButton2ActionPerformed(ActionEvent evt)
{
407
408         int length = jTextField2.getText().length();
409         int number = jTextField2.getText().length() - 1;
410         String store;
411
412         if (length > 0){
413
414             StringBuilder back = new StringBuilder
(jTextField2.getText());
415             back.deleteCharAt(number);
416             store = back.toString();
417             jTextField2.setText(store);
418

```

```
419         }
420
421     }
422
423
424     public void math_operation() {
425
426
427         switch (calculation)
428         {
429             case 1 : //addition
430                 ans = num +
Double.parseDouble(jTextField2.getText());
431
jTextField2.setText(Double.toString(ans));
432                 break;
433             case 2 : //subtaction
434                 ans = num -
Double.parseDouble(jTextField2.getText());
435
jTextField2.setText(Double.toString(ans));
436                 break;
437             case 3 : //multiplication
438                 ans = num *
Double.parseDouble(jTextField2.getText());
439
jTextField2.setText(Double.toString(ans));
440                 break;
441             case 4 : //division
442                 ans = num /
Double.parseDouble(jTextField2.getText());
443
jTextField2.setText(Double.toString(ans));
444                 break;
```

```
445     }
446 }
447 public void disabled(){ //OFF button
448     jTextField2.setEnabled(false);
449     jTextField2.setText("");
450     jButton1.setEnabled(true);
451     jButton2.setEnabled(false);
452     jButton3.setEnabled(false);
453     jButton4.setEnabled(false);
454     jButton5.setEnabled(false);
455     jButton6.setEnabled(false);
456     jButton7.setEnabled(false);
457     jButton8.setEnabled(false);
458     jButton9.setEnabled(false);
459     jButton10.setEnabled(false);
460     jButton11.setEnabled(false);
461     jButton12.setEnabled(false);
462     jButton13.setEnabled(false);
463     jButton14.setEnabled(false);
464     jButton15.setEnabled(false);
465     jButton16.setEnabled(false);
466     jButton17.setEnabled(false);
467     jButton18.setEnabled(false);
470
471 }
472
473 public void enable(){ // ON button
474     jTextField2.setEnabled(true);
475     jButton1.setEnabled(false);
476     jButton2.setEnabled(true);
477     jButton3.setEnabled(true);
478     jButton4.setEnabled(true);
```

```
479         jButton3.setEnabled(true);
480         jButton4.setEnabled(true);
481         jButton5.setEnabled(true);
482         jButton6.setEnabled(true);
483         jButton7.setEnabled(true);
484         jButton8.setEnabled(true);
485         jButton9.setEnabled(true);
486         jButton10.setEnabled(true);
487         jButton11.setEnabled(true);
488         jButton12.setEnabled(true);
489         jButton13.setEnabled(true);
490         jButton14.setEnabled(true);
491         jButton15.setEnabled(true);
492         jButton16.setEnabled(true);
493         jButton17.setEnabled(true);
494         jButton18.setEnabled(true);
495
496     }
497
498     public static void main(String args[]) {
499
500         JFrame f = new JFrame ("Calculator");
501
502         f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
503
504         try {
505             for (UIManager.LookAndFeelInfo info :
506                 UIManager.getInstalledLookAndFeels()) {
507                 if ("Nimbus".equals(info.getName())) {
508                     UIManager.setLookAndFeel(info.getClassName());
509                     break;
510                 }
511             }
512         }
```

```

510         }
511     } catch (ClassNotFoundException ex) {
512
513         java.util.logging.Logger.getLogger(Project2_Calculator.cl
514         ass.getName()).log(java.util.logging.Level.SEVERE, null,
515         ex);
516     } catch (InstantiationException ex) {
517
518         java.util.logging.Logger.getLogger(Project2_Calculator.cl
519         ass.getName()).log(java.util.logging.Level.SEVERE, null,
520         ex);
521     } catch
522     (javax.swing.UnsupportedLookAndFeelException ex) {
523
524         java.util.logging.Logger.getLogger(Project2_Calculator.cl
525         ass.getName()).log(java.util.logging.Level.SEVERE, null,
526         ex);
527     }
528
529     EventQueue.invokeLater(new Runnable() {
530         public void run() {
531             new
532             Project2_Calculator().setVisible(true);
533         }
534     });
535
536     //add panels to frame

```

```
530         f.setVisible(true);
531     }
532
533
534 }
535
```

OBJECT ORIENTED CONCEPT FOR CALCULATOR

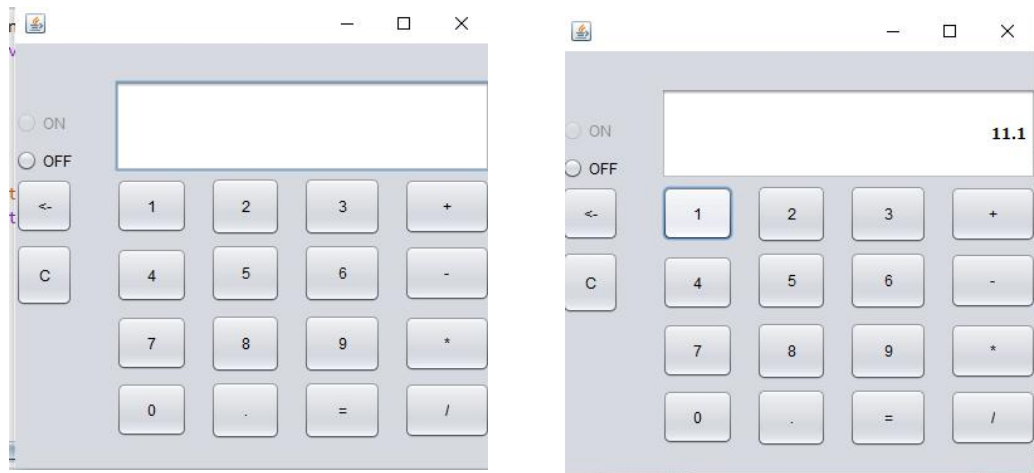
```
1  /*
2   NAME : NURMUNIRAH BINTI ASRI
3   MATRIC NO : BI19110077
4   OBJECT ORIENTED CONCEPT
5  */
6
7  import java.util.Scanner;
8
9  class calculator{
10     double a, b;
11
12     calculator(double a, double b){
13         this.a = a;
14         this.b = b;
15     }
16
17     double add(){
18         return a+b;
19     }
20
21     double sub(){
22         return a-b;
23     }
24
25     double mult(){
26         return a*b;
27     }
28
29     double div(){
30         return a/b;
31     }
32 }
```



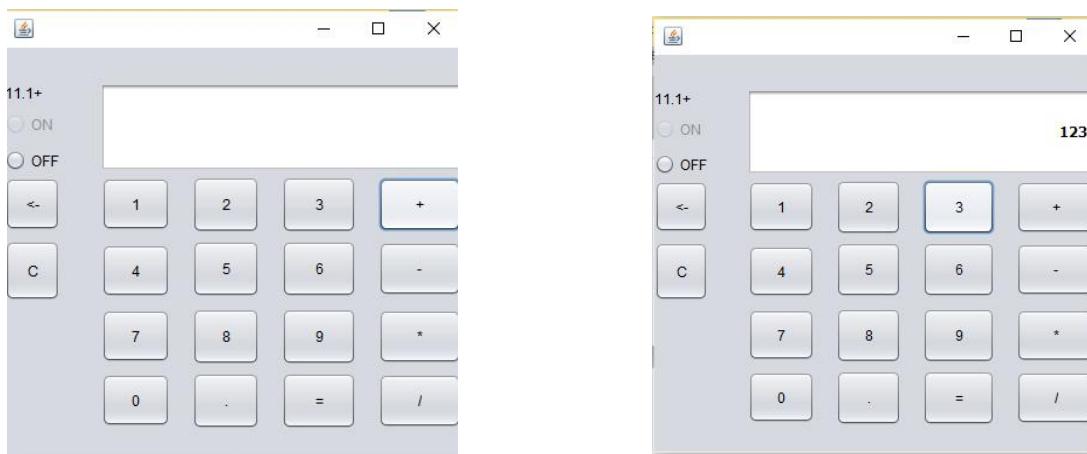
```
33
34 public class Calc {
35     public static void main (String[] args){
36
37         Scanner sc = new Scanner (System.in);
38         double a, b, c = 0.0;
39         String op;
40
41         System.out.print ("Enter value of a : ");
42         a = sc.nextDouble();
43         System.out.print ("Enter value of b : ");
44         b = sc.nextDouble();
45         System.out.print ("Enter the operation (+ , - , * ,
/ ) : ");
46         op = sc.next();
47
48         calculator obj = new calculator(a,b);
49         switch (op){
50             case "+" : System.out.println(a + op + b + " = "
+ obj.add()); break;
51             case "-" : System.out.println(a + op + b + " = "
+ obj.sub()); break;
52             case "*" : System.out.println(a + op + b + " = "
+ obj.mult()); break;
53             case "/" : System.out.println(a + op + b + " = "
+ obj.div()); break;
54             default : System.out.print("\nInvalid!");
55         }
56
57     }
58
```

USER MANUAL

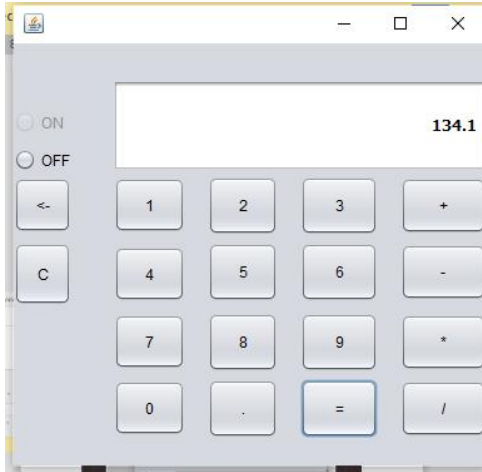
1. When the program is run, the user has to input the number.



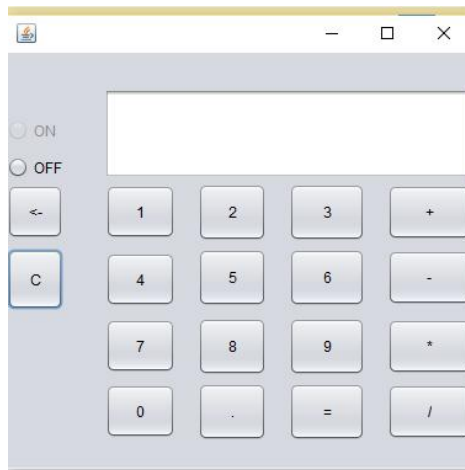
2. Pick the operation. The number will be displayed on the top-left corner of the calculator. After that click a new number.



3. Click the '=' button and the result will be displayed on the white box on the top-corner of the calculator.



4. If the user want to delete all the number, the user can click on the 'C' button which is on the left corner of the calculator.



5. If the user want to turn of the calculator, the user can click the 'OFF' button and click the 'ON' button to turn it on.

