

# Welcome to the Class



**Department of Computing and Information System**

# Design pattern

**Md. Selim Hossain**

Senior Lecturer

Department of Computing and Information System

Daffodil International University (DIU), Dhaka, Bangladesh

# Coding of a Simple Project Part-2

```
1 package calculator1;
2 import javax.swing.*;
3 import java.awt.*;
4 import java.awt.event.*;
5
6 public class Calculator1 implements ActionListener{
7
8     JFrame frame;
9     JTextField textfield;
10    JButton[] numberButtons = new JButton[10];
11    JButton[] functionButtons = new JButton[9];
12    JButton addButton, subButton, mulButton, divButton;
13    JButton decButton, equButton, delButton, clrButton, negButton;
14    JPanel panel;
15
16    Font myFont = new Font("Ink Free", Font.BOLD, 30);
17
18    double num1=0, num2=0, result=0;
19    char operator;
20
21    Calculator1(){
22
23        frame = new JFrame("Calculator");
24        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
25        frame.setSize(420, 550);
26        frame.setLayout(null);
27
28        textfield = new JTextField();
29        textfield.setBounds(50, 25, 300, 50);
30        textfield.setFont(myFont);
31        textfield.setEditable(false);
32
33        addButton = new JButton("+");
34        subButton = new JButton("-");
35        mulButton = new JButton("*");
36        divButton = new JButton("/");
37        decButton = new JButton(".");
38        equButton = new JButton("=");
39        delButton = new JButton("Del");
40        clrButton = new JButton("Clr");
41        negButton = new JButton("(-)");
42
```

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```
addButton = new JButton("+");
subButton = new JButton("-");
mulButton = new JButton("*");
divButton = new JButton("/");
decButton = new JButton(".");
equButton = new JButton("=");
delButton = new JButton("Del");
clrButton = new JButton("Clr");
negButton = new JButton("(-)");

functionButtons[0] = addButton;
functionButtons[1] = subButton;
functionButtons[2] = mulButton;
functionButtons[3] = divButton;
functionButtons[4] = decButton;
functionButtons[5] = equButton;
functionButtons[6] = delButton;
functionButtons[7] = clrButton;
functionButtons[8] = negButton;

for(int i =0;i<9;i++) {
    functionButtons[i].addActionListener(this);
    functionButtons[i].setFont(myFont);
    functionButtons[i].setFocusable(false);
}

for(int i =0;i<10;i++) {
    numberButtons[i] = new JButton(String.valueOf(i));
    numberButtons[i].addActionListener(this);
    numberButtons[i].setFont(myFont);
    numberButtons[i].setFocusable(false);
}

negButton.setBounds(50,430,100,50);
delButton.setBounds(150,430,100,50);
clrButton.setBounds(250,430,100,50);

panel = new JPanel();
panel.setBounds(50, 100, 300, 300);
```

```

72     panel.setBounds(50, 100, 300, 300);
73     panel.setLayout(new GridLayout(4,4,10,10));
74
75     panel.add(numberButtons[1]);
76     panel.add(numberButtons[2]);
77     panel.add(numberButtons[3]);
78     panel.add(addButton);
79     panel.add(numberButtons[4]);
80     panel.add(numberButtons[5]);
81     panel.add(numberButtons[6]);
82     panel.add(subButton);
83     panel.add(numberButtons[7]);
84     panel.add(numberButtons[8]);
85     panel.add(numberButtons[9]);
86     panel.add(mulButton);
87     panel.add(decButton);
88     panel.add(numberButtons[0]);
89     panel.add(equButton);
90     panel.add(divButton);
91
92     frame.add(panel);
93     frame.add(negButton);
94     frame.add(delButton);
95     frame.add(clrButton);
96     frame.add(textfield);
97     frame.setVisible(true);
98 }
99
100 public static void main(String[] args) {
101
102     Calculator1 calc = new Calculator1();
103 }
104
105 @Override
106 public void actionPerformed(ActionEvent e) { //actionPerformed invoked automatically
107
108     for(int i=0;i<10;i++) {
109         if(e.getSource() == numberButtons[i]) {
110             textfield.setText(textfield.getText().concat(String.valueOf(i)));
111         }
112     }
113     if(e.getSource()==decButton) {
114         textfield.setText(textfield.getText().concat("."));
115     }
116     if(e.getSource()==addButton) {
117         num1 = Double.parseDouble(textfield.getText());
118         operator = '+';
119         textfield.setText("");

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```
118     textField.setText("");
119 }
120 if(e.getSource()==subButton) {
121     num1 = Double.parseDouble(textField.getText());
122     operator = '-';
123     textField.setText("");
124 }
125 if(e.getSource()==mulButton) {
126     num1 = Double.parseDouble(textField.getText());
127     operator = '*';
128     textField.setText("");
129 }
130 if(e.getSource()==divButton) {
131     num1 = Double.parseDouble(textField.getText());
132     operator = '/';
133     textField.setText("");
134 }
135 if(e.getSource()==equButton) {
136     num2=Double.parseDouble(textField.getText());
137
138     switch(operator) {
139     case '+':
140         result=num1+num2;
141         break;
142     case '-':
143         result=num1-num2;
144         break;
145     case '*':
146         result=num1*num2;
147         break;
148     case '/':
149         result=num1/num2;
150         break;}
151     textField.setText(String.valueOf(result));
152     num1=result;
153 }
154 if(e.getSource()==clrButton) {
155     textField.setText(""); }
156 if(e.getSource()==delButton) {
157     String string = textField.getText();
158     textField.setText("");
159     for(int i=0;i<string.length()-1;i++) {
160         textField.setText(textField.getText()+string.charAt(i));
161     } }
162 if(e.getSource()==negButton) {
163     double temp = Double.parseDouble(textField.getText());
164     temp*=-1;
165     textField.setText(String.valueOf(temp)); } } }
```

Thanks to All