```java
1  /*
2
3  Jared Dyreson
4  CWID: 889546529
5  JMenuFrame.java ->
6  csrc_compile: TRUE
7
8  */
9
10 import javax.swing.*;
11 import java.awt.*;
12 import java.awt.event.*;
13 import java.awt.Color;
14 import java.text.MessageFormat;
15
16 import java.io.*;
17 import java.util.*;
18
19 public class JMenuFrame extends JFrame implements ActionListener{
20         // there may be some duplicate elements and that's because once an element is applied
21         // to a container, you cannot use it in another container
22
23         JMenuBar main_bar = new JMenuBar();
24         JMenu file_menu = new JMenu("File");
25         JMenuItem exit = new JMenuItem("Exit");
26
27         JMenu select_bar = new JMenu("Select");
28         JMenu font_selection = new JMenu("Font");
29         JMenu color_menu = new JMenu("Color");
30         JMenu sub_menu = new JMenu("Submenu");
31
32         String[] select_options = {"Home", "Congratulations Card", "Birthday Card"};
33         String[] font_options = {"Serif", "Noto Sans CJK JP DemiLight", "Suruma"};
34         String[] color_options = {"Yellow", "Red", "Green"};
35         Color[] color_parallel = {Color.YELLOW, Color.RED, Color.GREEN};
36         Color current_frame_color = Color.LIGHT_GRAY;
37
38         JLabel application_banner = new JLabel("Card Designer Application");
39         JLabel instructions = new JLabel("Then Get Started By Making Selections From the Menu");
40         JLabel instruction_copy = new JLabel("Then Get Started By Making Selections From the Menu");
41
42         JLabel birthday_main_message = new JLabel();
43         JLabel congrats_main_message = new JLabel();
44
45         String name_instructions = "Please Enter The Recipient's Name";
46         JTextField name_field = new JTextField();
47
48         JTextArea birthday_card_message = new JTextArea();
49         JTextArea congrats_card_message = new JTextArea();
50
51         CardLayout card_layout = new CardLayout();
52         JPanel birthday_panel = new JPanel();
```

```java
53         JPanel congrats_panel = new JPanel();
54         JPanel home_panel = new JPanel();
55
56         private final int FRAME_HEIGHT = 500, FRAME_WIDTH = 500;
57
58         public JMenuFrame(){
59                 super("Card Builder");
60
61                 // defining all features of the JFrame
62                 this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
63                 this.setSize(FRAME_HEIGHT, FRAME_WIDTH);
64                 this.setLayout(card_layout);
65                 this.setLocationRelativeTo(null);
66                 this.setJMenuBar(main_bar);
67
68                 // all components for the home card layout
69                 home_panel.add(application_banner);
70                 home_panel.setLayout(new GridLayout(3, 0));
71                 home_panel.setBackground(this.current_frame_color);
72                 home_panel.add(name_field);
73                 home_panel.add(instructions);
74                 this.add(home_panel, "HOME");
75
76                 // all components for the congratulations card layout
77                 congrats_panel.setLayout(new GridLayout(3, 0));
78                 congrats_panel.add(congrats_main_message);
79                 congrats_panel.add(congrats_card_message);
80                 congrats_panel.add(instructions);
81                 this.add(congrats_panel, "CONGRATS");
82
83                 // all components for the birthday card layout
84                 birthday_panel.setLayout(new GridLayout(3, 0));
85                 birthday_panel.add(birthday_main_message);
86                 birthday_panel.add(birthday_card_message);
87                 birthday_panel.add(instruction_copy);
88                 this.add(birthday_panel, "BIRTHDAY");
89
90                 // since each menu item has three elements (depth 2), i decided to run a loop instead of writing
91                 // nine times the amount of code
92                 for(int i = 0; i < select_options.length; ++i){
93                         // construct each menu item
94                         JMenuItem select_element = new JMenuItem(select_options[i]);
95                         JMenuItem font_element = new JMenuItem(font_options[i]);
96                         JMenuItem color_element = new JMenuItem(color_options[i]);
97
98                         // make it have an action listener
99                         select_element.addActionListener(this);
100                        font_element.addActionListener(this);
101                        color_element.addActionListener(this);
102
103                        // put it in its respective container
104                        select_bar.add(select_element);
```

```java
105                        font_selection.add(font_element);
106                        color_menu.add(color_element);
107                }
108                // add all the menu's (depth 1)
109                main_bar.add(file_menu);
110                main_bar.add(select_bar);
111                main_bar.add(color_menu);
112                main_bar.add(font_selection);
113
114                file_menu.add(exit);
115
116                exit.addActionListener(this);
117
118                name_field.setText(this.name_instructions);
119        }
120        public static void main(String[] args){
121                // Auto generated with caffine and getty@.service
122                JMenuFrame frame = new JMenuFrame();
123                frame.setVisible(true);
124        }
125        public int find_pos(String[] arr, String value){
126                // find where the string is in an array of strings
127                for(int i = 0; i < arr.length; ++i){
128                        if(arr[i] == value){ return i; }
129                }
130                // if not found, return -1
131                return -1;
132        }
133        @Override
134                public void actionPerformed(ActionEvent event){
135                        // this is where the code gets....creative
136                        // since we don't have declared objects for the MenuItems
137                        // we still need a way to access and call them
138
139                        // this object handles which drop down is called
140                        JMenuItem text_source = (JMenuItem)event.getSource();
141                        // this object only exists to allow us to exit
142                        Object source = event.getSource();
143
144                        // we attempt to find them in the inside each array
145                        // 2/3 of these values will be -1 because only one drop down can be called
146                        int selection_position = find_pos(select_options, text_source.getText());
147                        int font_position = find_pos(font_options, text_source.getText());
148                        int color_position = find_pos(color_options, text_source.getText());
149
150                        // here we retrieve the name given in the textfield
151                        // if someone did not put anything in we will give them
152                        // a default name of Timmy and save it to the textfield
153
154                        String name = name_field.getText();
155                        String font_name = "";
156
```

```java
157                        // find the font and if it cannot find the font give a default of Ubuntu
158                        if(font_position >= 0){ font_name = font_options[font_position]; }
159                        else{ font_name = "Ubuntu"; }
160
161                        // if color in array
162                        if(color_position >= 0){
163                                // if the current color of the JPanel is not the same as the one looked up
164                                if(this.current_frame_color != color_parallel[color_position]){
165                                        // update the color
166                                        this.current_frame_color = color_parallel[color_position];
167                                }
168                        }
169                        // since we don't know what frame will be displayed, each frame gets the same color
170                        home_panel.setBackground(this.current_frame_color);
171                        congrats_panel.setBackground(this.current_frame_color);
172                        birthday_panel.setBackground(this.current_frame_color);
173
174                        if(selection_position >= 0){
175                                // here we treat the card layout like an array
176                                // 0 -> home
177                                // 1 -> congratulations
178                                // 2 -> birthday
179                                switch(selection_position){
180                                        case 0:
181                                                card_layout.show(getContentPane(), "HOME");
182                                                break;
183                                        case 1:
184                                                card_layout.show(getContentPane(), "CONGRATS");
185                                                congrats_main_message.setText(MessageFormat.format("Congratulations {0}", name));
186                                                break;
187                                        case 2:
188                                                card_layout.show(getContentPane(), "BIRTHDAY");
189                                                birthday_main_message.setText(MessageFormat.format("Happy Birthday {0}", name));
190                                                break;
191                                }
192                        }
193                        else{
194                                // since we don't know what frame will be displayed, each frame gets the same font
195                                congrats_card_message.setFont(new Font(font_name, Font.ITALIC, 24));
196                                birthday_card_message.setFont(new Font(font_name, Font.ITALIC, 24));
197                        }
198
199                        if(source == exit){ System.exit(0); }
200                }
201 }
```