



程式語言 (Programming Language)

Lec. 09 顏色調整程式範例



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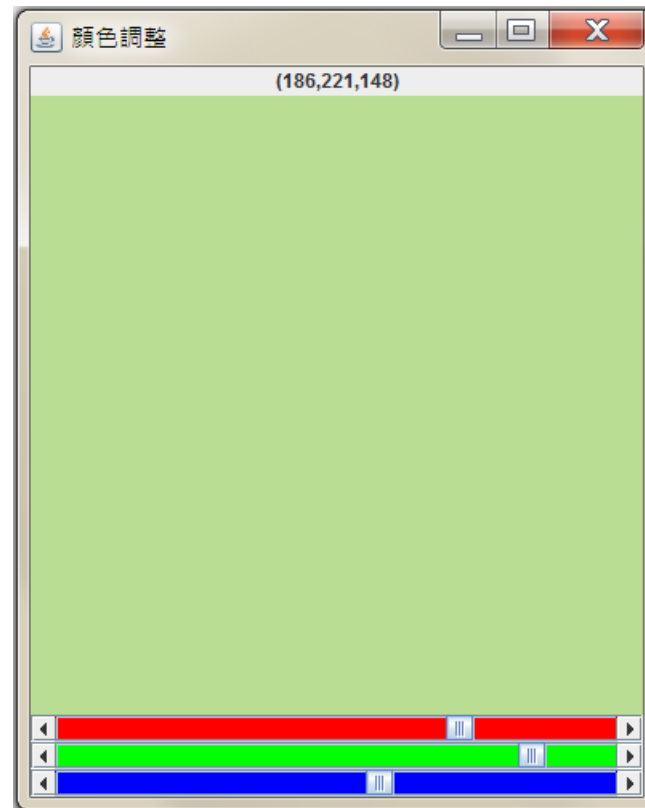
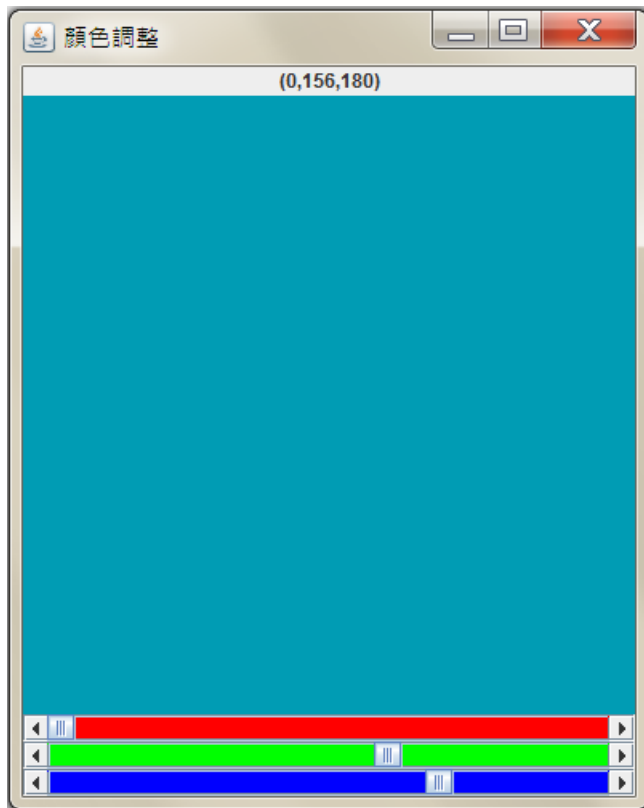


綱要 (Outline)

- 程式規劃
- 排版規劃
- 元件規劃
- 事件設定
- 功能擴充

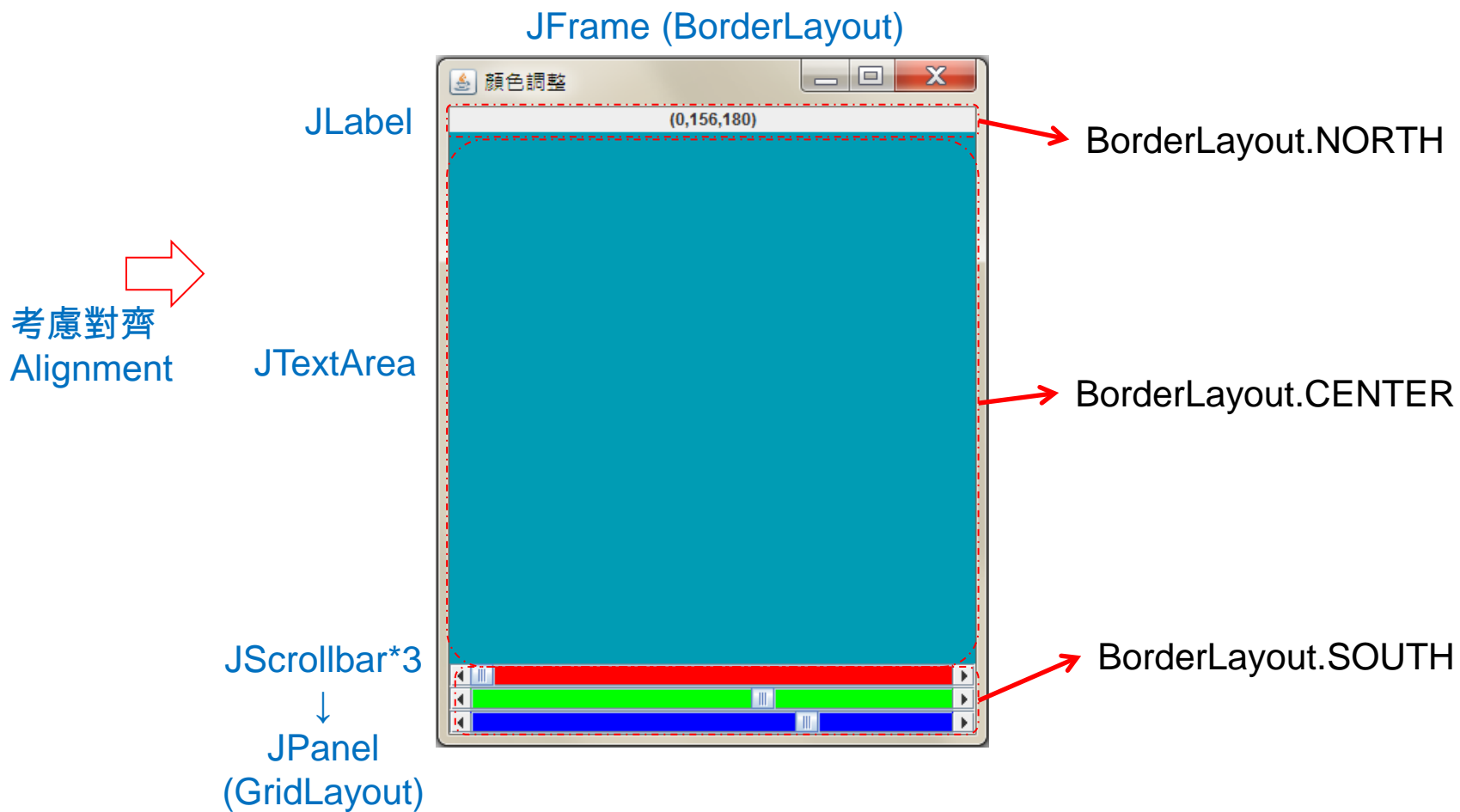


初步想法





排版規劃





元件規劃

➤ 產生元件

- ✓ JPanel srgb;
- ✓ JScrollBar **sr**, sg, sb;
- ✓ sr = new JScrollbar(JScrollBar.HORIZONTAL, 0, 10, 0, 265);

➤ 加入版面

- ✓ srgb.add(**sr**);
- ✓ fr.add(BorderLayout.SOUTH, srgb);

➤ 動作對應

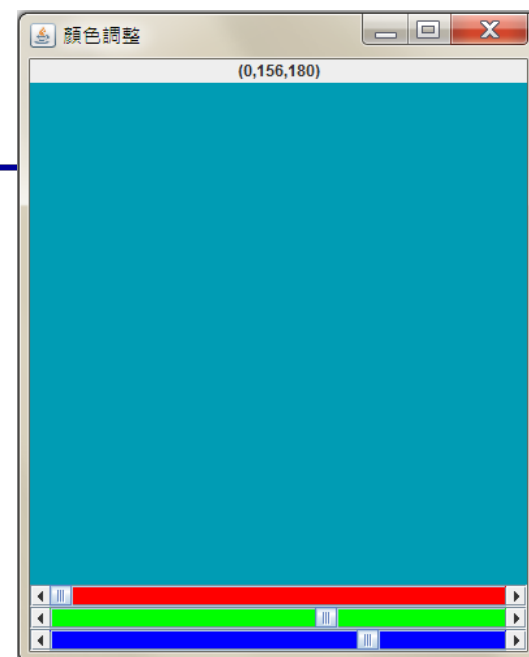
- ✓ **sr**.addAdjustmentListener(this);

<i>Semantic Events</i>	
Button List MenuItem TextField	ActionListener
Choice Checkbox CheckboxMenuItem List	ItemListener
Scrollbar	AdjustmentListener
TextArea TextField	TextListener



程式說明 – 程式架構

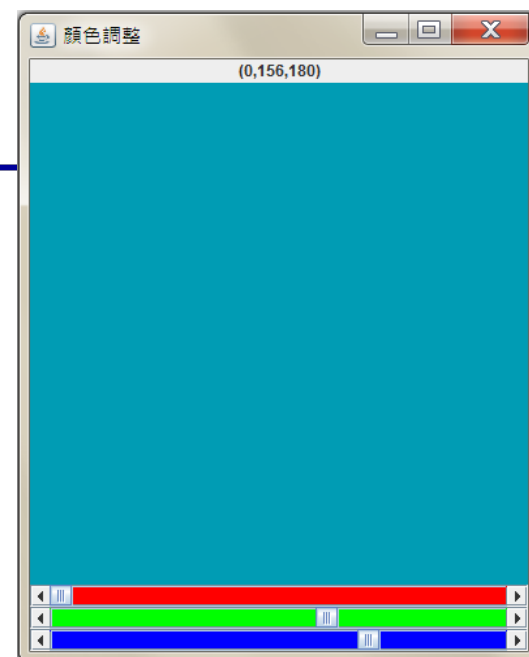
```
1 import java.awt.*;
2 import javax.swing.*;
3 import java.awt.event.*;
4
5 public class ColorAdjFrame1 implements AdjustmentListener{
6
7     JFrame fr = new JFrame("顏色調整");
8     JTextArea ta = new JTextArea();
9     JScrollBar sr,sg,sb;
10    JPanel srgb = new JPanel();
11    int r=0, g=0, b=0;
12    JLabel lb = new JLabel("(0,0,0)");
13
14    public ColorAdjFrame1() {}
15
16
17    public void adjustmentValueChanged(AdjustmentEvent e) {}
18
19
20    public static void main(String[] args) {
21        ColorAdjFrame1 app = new ColorAdjFrame1();
22    }
23
24 }
```





程式說明 – 元件設定

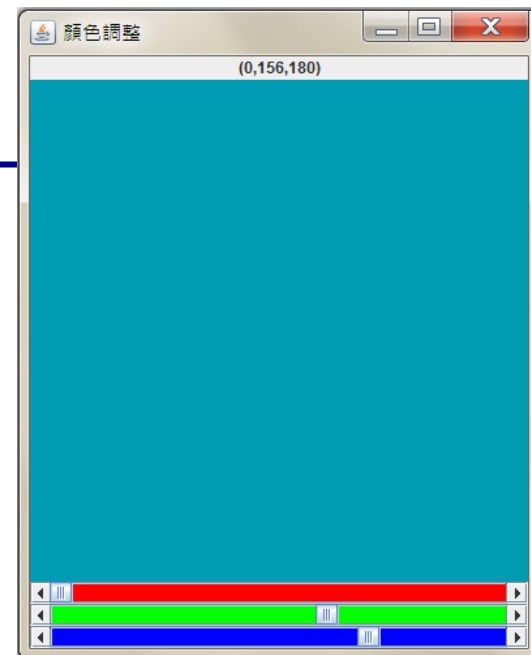
```
14 public ColorAdjFrame1() {  
15     sr = new JScrollBar(JScrollBar.HORIZONTAL, 0, 10, 0, 265);  
16     sr.setBackground(Color.RED);  
17     sr.addAdjustmentListener(this);  
18     sg = new JScrollBar(JScrollBar.HORIZONTAL, 0, 10, 0, 265);  
19     sg.setBackground(Color.GREEN);  
20     sg.addAdjustmentListener(this);  
21     sb = new JScrollBar(JScrollBar.HORIZONTAL, 0, 10, 0, 265);  
22     sb.setBackground(Color.BLUE);  
23     sb.addAdjustmentListener(this);  
24     srgb.setLayout(new GridLayout(3, 0));  
25     srgb.add(sr); srgb.add(sg); srgb.add(sb);  
26     lb.setHorizontalAlignment(SwingConstants.CENTER);  
27     ta.setEditable(false);  
28     fr.setSize(400, 500);  
29     fr.setLayout(new BorderLayout());  
30     fr.add(BorderLayout.CENTER, ta);  
31     fr.add(BorderLayout.NORTH, lb);  
32     fr.add(BorderLayout.SOUTH, srgb);  
33     fr.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
34     fr.setVisible(true);  
35 }
```





程式說明 – 對應事件設定

```
37 public void adjustmentValueChanged(AdjustmentEvent e) {  
38     if(e.getSource()==sr) r = sr.getValue();  
39     if(e.getSource()==sg) g = sg.getValue();  
40     if(e.getSource()==sb) b = sb.getValue();  
41     ta.setBackground(new Color(r,g,b));  
42     lb.setText("(" + r + ", " + g + ", " + b + ")");  
43 }
```



思考問題

➤ 如何修改成在網頁下執行

- ✓ 使用JFrame改為繼承JFrame
- ✓ 繼承JFrame改為繼承JApplet
- ✓ 撰寫對等HTML檔案 (有必要時須設定security policy)

➤ 更友善挑選顏色之介面

- ✓ JColorChooser (大型介面)

