Project 1

William Crutchfield

CMSC 330

11/18/18

Table of Contents

Test Cases

This section contains all of the test cases I performed on my program to ensure that it was working as intended. There are slight discrepancies between my screenshots, and the screenshots provided. It is due to the fact that I am on macOS, and the provided screenshots were taken on a Windows machine.

Test Checklist

The following Test Cases will test the following:

- Window Generation
- Flow Layout
- Grid Layout
- Button Widgets
- Group Widgets
- Radio Button Widgets
- Label Widgets
- Panel Widgets
- Textfield Widgets
- Nested Panels
- Syntax Error Detection

Case #1

In this test case, I simply used the provided input file to see if the GUI was generated correctly.

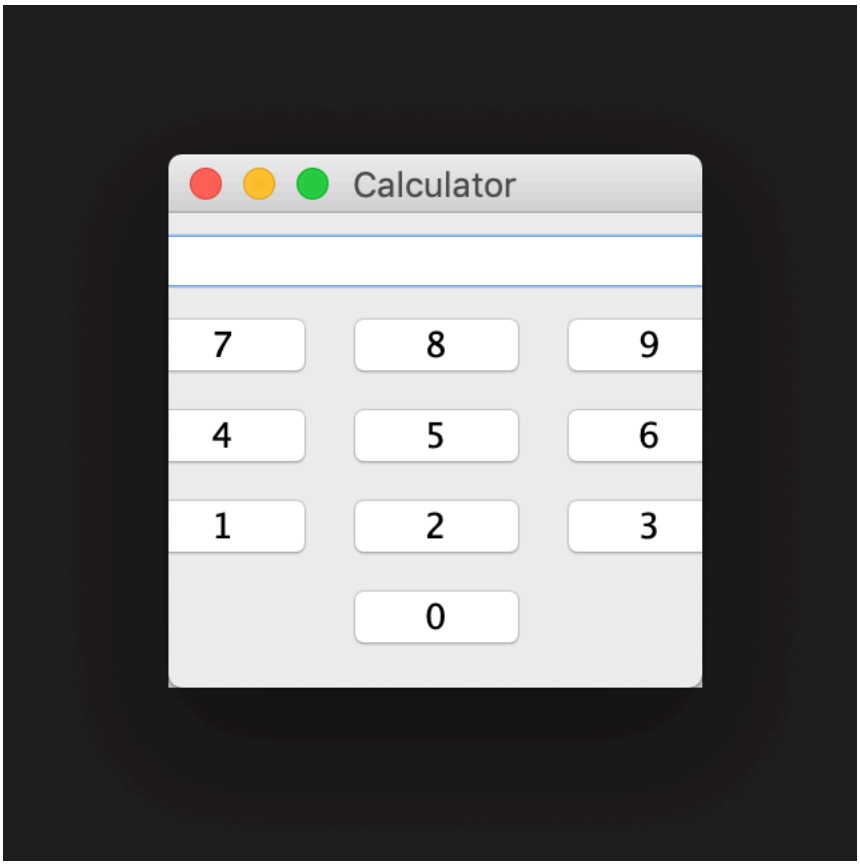
Input File

```
Window "Calculator" (200, 200) Layout Flow:
 Textfield 20;
```

```
 Panel Layout Grid(4, 3, 5, 5):
 Button "7";
 Button "8";
 Button "9";
 Button "4";
 Button "5";
 Button "6";
 Button "1";
 Button "2";
 Button "3";
 Label "";
 Button "0";
 End;
End.
```

Screenshots

From the pictures below, you can see that it did in fact generate correctly.



From this first test, we can cross off a lot from our Test Checklist. This test confirms that Window Generation, Panels, Grid Layout, Flow Layout, Textfield Widgets, and Button Widgets are all working properly.

Case #2

This test case actually comes from another student. I saw this input file “Test2.txt” from Allan Johnson on the discussions and figured I should include it in a test case. The reason I have done this, is the fact that I actually used this input file while I was creating my program. It helped me a lot in terms of finding logical errors in my program relating to nesting panels. However, I have gone ahead and modified it slightly from the original (highlighted in `red`). I have made the window slightly wider, due to macOS having slightly larger widgets over Windows.

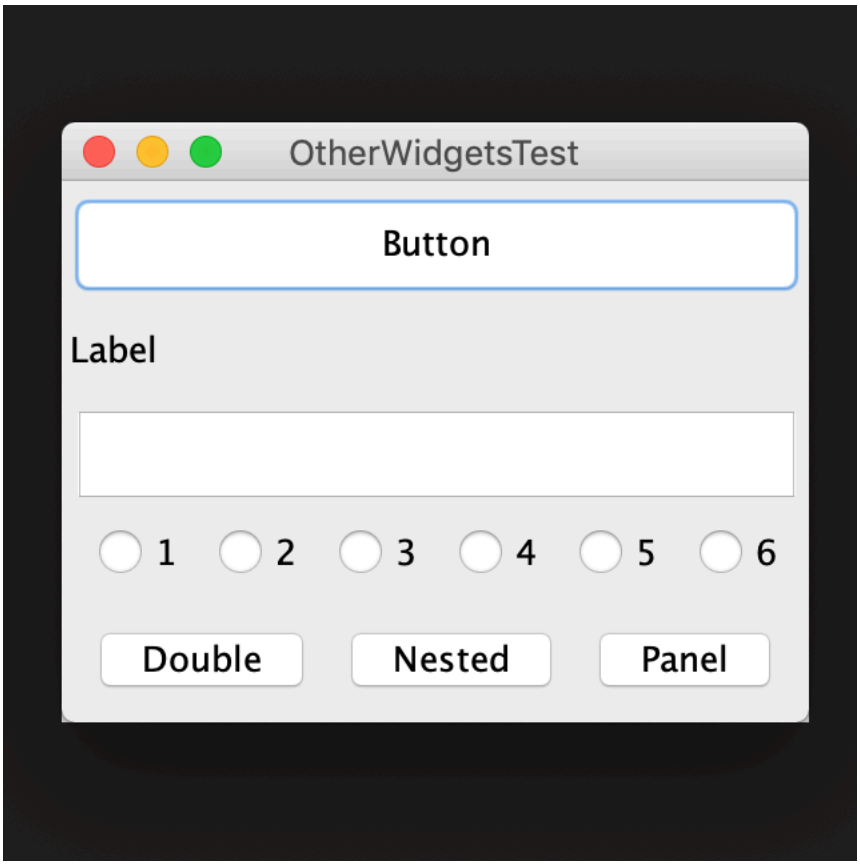
Input File

```
Window "OtherWidgetsTest" (280,225) Layout Flow:
```

```
Panel Layout Grid(5,1):
Button "Button";
Label "Label";
Textfield 10;
Panel Layout Flow:
Panel Layout Grid(1, 6, 5, 5):
Group
Radio "1" ;
Radio "2" ;
Radio "3";
Radio "4" ;
Radio "5" ;
Radio "6";
End;
End;
End;
Panel Layout Flow:
Button "Double";
Button "Nested";
Button "Panel";
End;
End;
End.
```

Screenshots

From the pictures below, you can see that it did in fact generate correctly.



This test confirms that Group widgets, Radio widgets, Label widgets, and most importantly Nested Panels are all working properly.

Case #3

This final test case is a modified version of the original input file. This test case shows that the program correctly detects syntax errors.

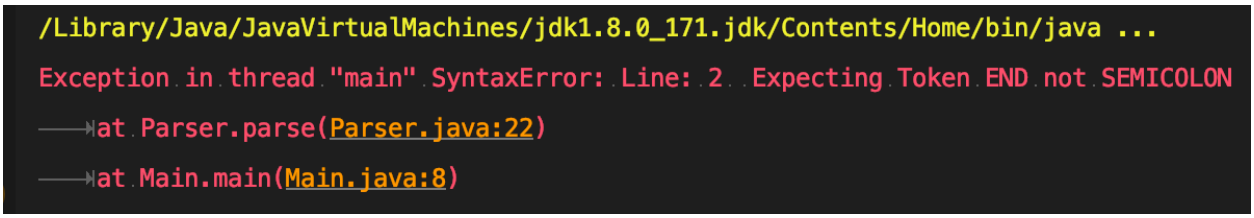
Input File

```
Window "Calculator" (200, 200) Layout Flow:
 Textfield 20;;
 Panel Layout Grid(4, 3, 5, 5):
 Button "7";
 Button "8";
 Button 9;
```

```
 Button "4";
 Button "5";
 Button "6";
 Button "1";
 Button "2";
 Button "3";
 Label "";
 Button "0";
 End;
End.
```

Screenshots

From the pictures below, you can see that it did in fact correctly detect the syntax error. More importantly, it shows that the first error detected is returned.



This test confirms that Syntax Error Detection is working properly.

Conclusion

In conclusion, I really enjoyed this project. It really opened my eyes to how much work is involved in a parser. This was a parser for a relatively simple grammar too, and I still found it to be a good challenge. The main thing I struggled with was nested panels. However, the hint that you posted on the Announcements was a big help and I was able to pass a Container type to the layout and widget parsing methods. Overall this was a great project!