# Self Check Questions

1. What happens if you omit the first JLabel object?
   1. The text, “Interest Rate: ” does not appear.
2. If a text field holds an integer, what expression do you use to read its contents?
   1. Integer.parseInt(textField.getText());
3. What is the difference between a text field and a text area?
   1. A text field holds one line of text, while a text area holds multiple lines of text.
4. Why did the InvestmentFrame program call resultArea.setEditable(false)?
   1. The method was called so that resultArea could not be modified by the user, since it is only meant to be an output display.
5. How would you modify the InvestmentFrame program if you didn’t want to use scroll bars?
   1. Instead of creating a JScrollPane from resultArea and adding that to panel, I would add resultArea to panel directly.
6. How do you add two buttons to the north area of a frame?
   1. You add the buttons to a smaller panel and add the button panel to the north area of a bigger panel with a BorderLayout.
7. How can you stack three buttons on top of each other?
   1. You can put the buttons in a panel with a GridLayout that has 3 rows and 1 column.
8. What is the advantage of a JComboBox over a set of radio buttons? What is the disadvantage?
   1. A JComboBox is more practical for storing a larger list of user options, but the return type for the getSelectedItem() method is Object so typecasting is required.
9. Why do all user-interface components in the FontViewerFrame class share the same listener?
   1. Because all of the user-interface components have the same function, which is to change the font of the label.
10. Why was the combo box placed inside a panel? What would have happened if it had been added directly to the control panel?
    1. It was placed in a panel so that it could be grouped with the buttons below the label. If it were added directly, it would either be placed on top of the label or overridden by the buttons.
11. Why do JMenu objects not generate action events?
    1. Because the user has to add items to the menu and assign action events to those items.
12. Why is the name parameter in the createFaceItem method declared as final?
    1. Because the name parameter is not meant to be altered.
13. Suppose you want to allow users to pick a color from a color dialog box. Which class would you use? Look in the API documentation.
    1. JColorChooser.
14. Why does a slider emit change events and not action events?
    1. Because the slider continuously changes instead of performing a single action.

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# Programming Exercise

P18.4: Write an application with three labeled text fields, one each for the initial amount of a savings account, the annual interest rate, and the number of years. Add a button “Calculate” and a read-only text area to display the result, namely, the balance of the savings account after the end of each year.

# Project

Project 18.2: Write a program that displays a scrolling message in a panel. Use a timer for the scrolling effect. In the timer’s action listener, move the starting position of the message and repaint. When the message has left the window, reset the starting position to the other corner. Provide a user interface to customize the message text, font, foreground and background colors, and the scrolling speed and direction.