

Exercises for Programming Practice 1

The submitted program will be evaluated as described in “Lesson Plan (2021)”.

Note:

- ✓ Do not create “module-info.java”, when you create a Java Project.
- ✓ Do not set Package name in the window “New Java Class”.
- ✓ The following information must be included as a comment at the first part of the program.
 - Contents of the program
 - ❖ Do not use the title of exercise for “contents of the program”
Think about “contents of the program” yourself.
 - Submission date
 - Program creator
- ✓ Wrong file name (including case sensitivity) is not accepted.

The deadline for submitting the programs is 18:00 on November 11th, 2021.

Exercise 12 (file name “Exercise12.java”)

Create Java program “Exercise12.java” which draws two buttons and one text field. The program “Exercise12.java” must satisfy the following conditions as shown in Figure 1.

- (a) The window size is 400 pixels wide by 300 pixels vertical.
- (b) Two buttons are arranged to NORTH region, and the text field is arranged to CENTER region.
- (c) The label of the button which is appended to container at first is “blue”, and the label of the second button is “red” as shown in Figure 1.
- (d) The text field has empty TextField with the 20 columns.

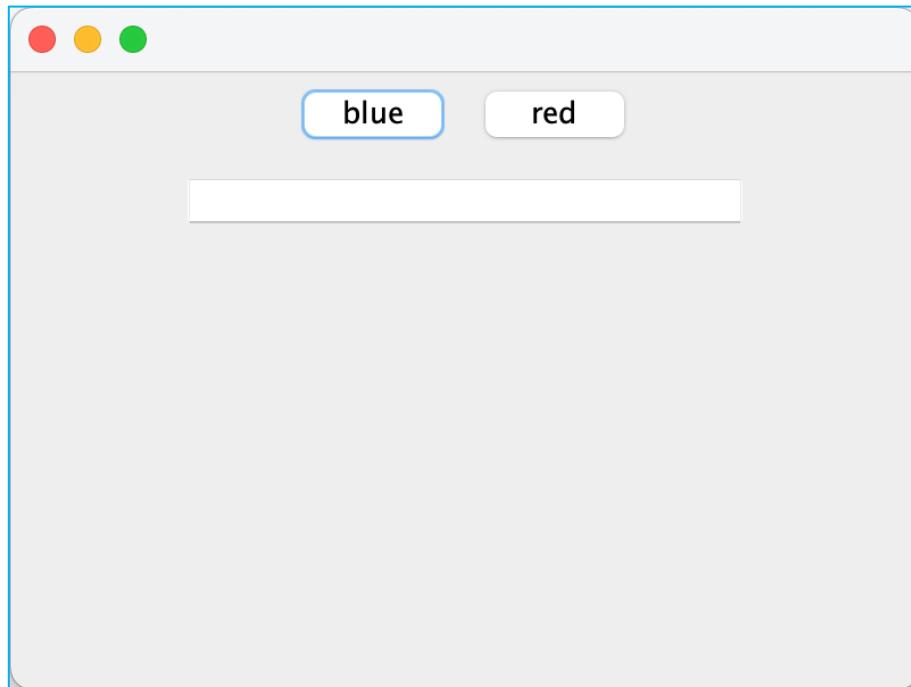


Figure 1. The result of “Exercise12.java” execution.

Exercise 13 (file name “Exercise13.java”)

Create Java program “Exercise13.java” which displays the pressed button in the text field. The following actions are added event processing to the buttons of program “Exercise12.java”.

- When the blue button is pressed, a message “Blue button was pressed.” is described in the text field as shown in Figure 2.
- When the red button is pressed, a message “Red button was pressed.” is described in the text field as shown in Figure 3.

Refer the program “Example74.java” in 6.2 of “Swing” (The seventh day).

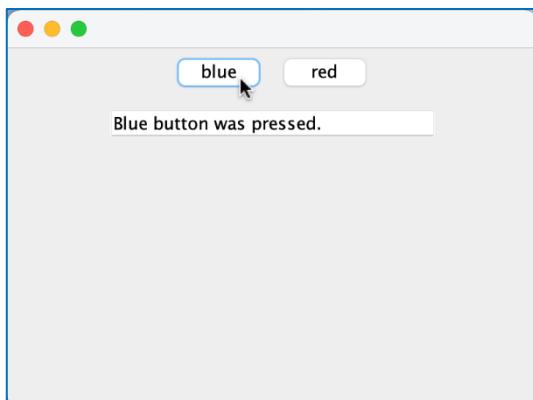


Figure 2. In the case of (a).

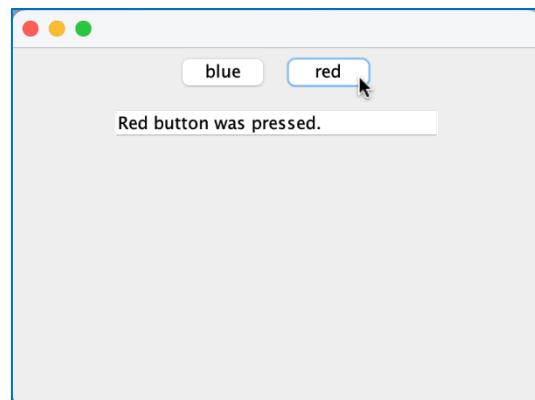


Figure 3. In the case of (b)

Exercise 14 (file name “Exercise14.java”)

Create Java program “Exercise14.java” that displays the characters in the text field in the window in the color indicated by the button. Satisfy the following conditions.

- (a) When the blue button is pressed, the font is set by Font(“Rockwell”, Font.PLAIN, 30) and the string which is read from the text field is displayed from the lower left coordinated (50, 150) with **blue** letters as shown in Figure 4.
- (b) When the red button is pressed, the font is set by Font(“Georgia”, Font.PLAIN, 30) and the string which is read from the text field is displayed from the lower left coordinated (50, 200) with **red** letters as shown in Figure 5.

Since each button is used to display the text in different places, different character strings can be displayed at the same time. Figure 6 shows an example in which the text area is rewritten to "Ritsumeikan University" and the red button is pressed after Figure 4.

Refer the program “Example75.java” in 6.3 of “Swing” (The seventh day).

- ✓ The Option explained below is not a required item, but please challenge the Option to create a program that is easier to use.

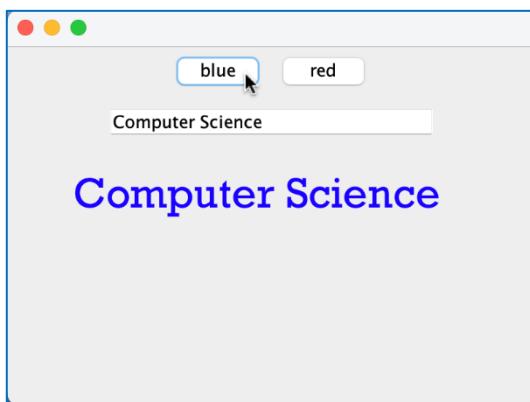


Figure 4. In the case of (a).

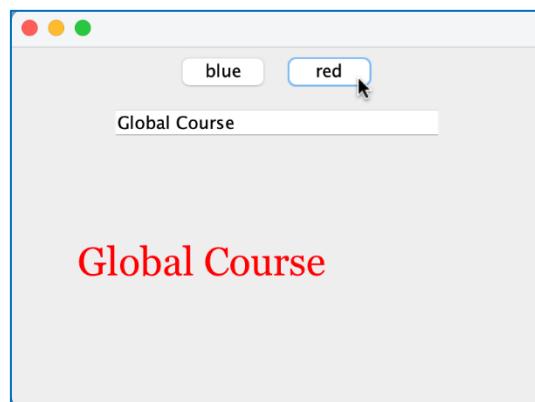


Figure 5. In the case of (b).

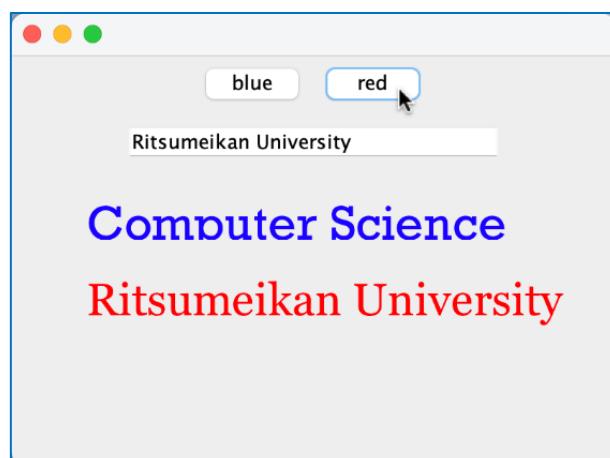


Figure 6. An example of using two buttons for different character strings.

★ Option

After displaying words once, it is necessary to erase the displayed characters before displaying different words. We can use “`clearRect`” method of `Graphics` class to erase the displayed characters.

`clearRect(int topLeftX, int topLeftY, int width, int height)`

clears the specified rectangle by filling it with the background color of the current drawing surface. The left and right edges of the rectangle are at `topLeftX` and `topLeftX + width`. The top and bottom edges are at `topLeftY` and `topLeftY + height`.