

Assignment 10

Hand-in date: Monday 16-11-2015 15:00h

11.1 Write a method that removes duplicate elements from an **ArrayList** of integers using the following header:

public static void removeDuplicates(ArrayList<Integer> list)

Write a test program that prompts the user to enter 10 integers to a list and displays the distinct integers separated by exactly one space. Here is a sample run:

Enter ten integers: 34 5 3 5 6 4 33 2 2 4 The distinct integers are: 34 5 3 6 4 33 2

11.2 Write a program that keeps a map in which both keys and values are strings – the name of students and their course grades. One student has one grade. Write methods for adding a student, removing a student, modifying a student's grade, and for printing all grades. The printout should be sorted by name and formatted like this:

Carl: B+

Joe: C

Sarah: A

Write a test program where all the methods are used.

11.3 Use a stack to reverse the words of a sentence. Keep reading words until you have a word that ends in a period, adding them onto a stack. When you have a word with a period, pop the words off and print them. Stop when there are no more words in the input. For example, you should turn the input:

Mary had a little lamb. Its fleece was white as snow.

into

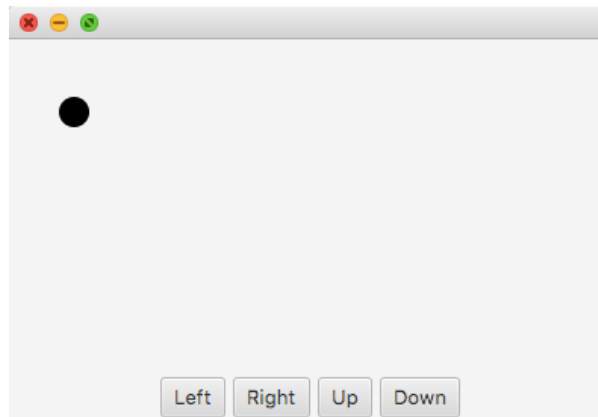
Lamb little a had mary. Snow as white was fleece its.

Pay attention to capitalization and the placement of the period.

11.4 (OPTIONAL, Choose one between 11.4 – 11.6) Write a GUI program that moves a circle up, down, left, or right using the arrow keys. Additionally, add four buttons doing the same operations:

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Hint 1: You will need to disable the focus over the button. In order to do that you have to use: **btn.setFocusTraversable(false);**

Hint 2: You will need to attach EventHandler to either the Circle or the container of the Circle in order to track the keyboard e.g.:

```
pane.setOnKeyPressed(e -> {
    if (e.getCode() == KeyCode.UP) {
        // Move the circle up
    }
    else if (e.getCode() == KeyCode.DOWN) {
        // Move the circle down
    }
    else if (e.getCode() == KeyCode.LEFT) {
        // Move the circle left
    }
    if (e.getCode() == KeyCode.RIGHT) {
        // Move the circle right
    }
});
```

11.5 (OPTIONAL, Choose one between 11.4 – 11.6) Write a GUI program that converts miles and kilometers. If you enter a value in the Mile text field and press the Enter key, the corresponding result is shown in the other text field:



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11.6 (OPTIONAL, Choose one between 11.4 – 11.6) Write a program that displays and saves a text file in a text area. The user enters a file name in a text field and clicks the View button; the file is then displayed in a text area. The user can modify the text area and then can save the content via the save button.

