

LAB ASSIGNMENT #3 – Abstract classes and Interfaces

Due Date: Wednesday, February 19, 2014.

Purpose: The purpose of this Lab assignment is to:

- Practice the use of abstract classes
- Practice the use of interfaces

References: Read the course's text "Introduction To Java Programming, 9th edition", <http://www.cs.armstrong.edu/liang/intro9e/>, chapter 16 and the ppt slides. This material provides the necessary information that you need to complete the exercises.

This lab must be completed individually by all the students. You will have to demonstrate your solution in a scheduled lab session when submitting the assignment. The assignments/projects should be submitted **through the assignment link on Blackboard**.

The Eclipse project for this assignment should be named as: *FullName_CXC320_Assignment3*. Each exercise should be included in a separate package. For example, first exercise in a package named *exercise1*, etc.

The entire project directory should be zipped in a file named as *FullName_CXC320_Assignment3*.

1. Read and work through Chapters 16: "Abstract classes and Interfaces" in textbook (p. 560 - 590)

2. Exercise 15.5 (Display a calendar):

Write a program that displays the calendar for the current month, as shown in Figure 15.10. Use labels, and set text on the labels to display the calendar. Use the `GregorianCalendar` class to obtain the information for the month, year, first day of the month, and number of days in the month.

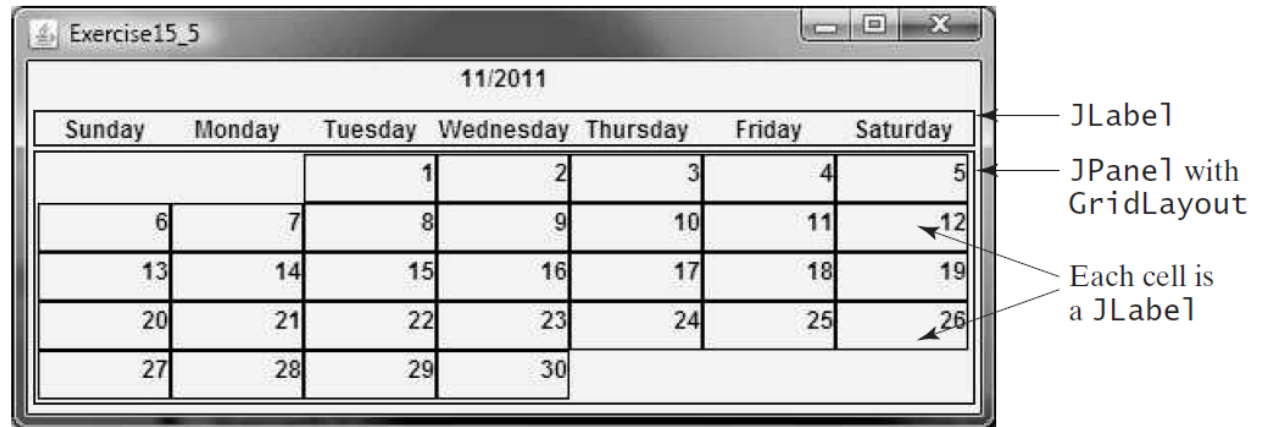


FIGURE 15.10 The program displays the calendar for the current month.

(5 marks)

3. **Exercise 15.9** (The Colorable interface):

Design an interface named Colorable with a void method named howToColor(). Every class of a colorable object must implement the Colorable interface.

Design a class named Square that extends GeometricObject and implements Colorable. Implement howToColor to display the message Color all four sides.

Write a test program that creates an array of five GeometricObjects. For each object in the array, invoke its howToColor method if it is colorable.

(5 marks)