Assignment 3: Reading and Programming Project due 9/24

Reading Assignment

1. If you have not yet done so, complete the reading and self-test exercises from Chapter 2. Sections on the String class should be most helpful to you while working on the programming project.
2. Read Sections 3.1, Branching Statements, and 3.4, The type Boolean, of the textbook completing self-test exercises. Skip examples and exercises that use loops (while, do and for statements).

Programming Assignment

This assignment consists of project ExtractPhoneNumber which emphasizes the use of string methods and basic conditional statements.

Programming Project

ExtractPhoneNumber: Find a phone number in a message due 11:00 p.m. on 9/24, Wednesday worth 10 points

There are intelligent tools being built that extend the functionality of typical email processing software by reviewing the contents of a message and trying to detect information that the user might possibly be interested in storing somewhere else for a future reference. For example, the LookOut system is a tool that when used with Microsoft’s Outlook, tries to identify if an email message contains a reference to some meeting, and offers to record meeting-related information (time, location) into a user’s calendar.

While in this assignment you will not be programming a page relevancy ranking algorithm, you will work on a simplified related task.

For this project you’ll have to write a program that reads a text string and identifies a phone number in it. We will make the following simplifying assumptions:

- there can be at most one phone number in the text,
- a phone number, if present in the text, always follows the pattern (XXX)-XXX-XXXX, where each X stands for a single digit.
- the text message does not contain any parenthesis other than those occurring in a phone number.

After reading in the text string, the program must identify whether or not the message contains a phone number, and print out its components (area code, first three digits, last four digits) separately as show on the following interaction.
Please enter a text string: Our next meeting will take place on Sunday, November 21-st at the usual location. If you have any questions do not hesitate to call me at (313)-978-2467.

I found a phone number in this message.
Area code: 313
First three digits: 978
Last four digits: 2467

Here is another interaction.

Please enter a text string: Please RSVP by Tuesday, September 30, 2003 to Academic Services by email someplace@some.edu

I did not find a phone number in this message.

As you are working on your program you may want to hardcode or, in other words, fix the text part of the input in the program to avoid having to type it in every time you run your code. (However, make sure that your algorithm is not only working on this particular string and is general enough to handle any valid input.) To do that, set the variable that you intend to use for storing the text to a sentence of your choice. Here’s how you could do it

```java
String text = "Our next meeting will take place on Sunday, November 21-st at the usual location. If you have any questions do not hesitate to call me at (313)-978-2467."
```

It will be easier to test your program with various keywords while the text is fixed. When you are confident that the version of the program with the hardcoded text line satisfies the requirements, you should modify your program to get the text from the user input instead and run a series of tests again.

Good luck and Happy Programming!