

CS 535 Object-Oriented Programming and Design
Fall Semester, 2013
Assignment 2
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San Diego State University -- This page last updated 9/4/13

Due Sept 10 in Class
Version 1.1

- 1a. Make sure that your VisualWorks home is set correctly. Open a System Browser and find the Array class. Look at the method **literalArrayEncoding** in the converting protocol. What is the source code in the method?
- 1b. Now change the VisualWorks home setting so it is not correct. Then deselect and reselect the method **literalArrayEncoding** in the fourth list pane from the left in the System Browser. What happens?
- 1c. Now set the VisualWorks home to the correct value and deselect and reselect the method **literalArrayEncoding**. What happens?
- 2a. Which Launcher menu contains an item to allow you to find the implementers of a method (or Selector)? That is all the classes that implement the method.
- 2b. Which class(es) implement the method **return** ?
- 3a. Which Launcher menu contains an item to allow you to find the senders of a method?
- 3b. Which method(s) send the message **return:value:** ?
4. Add the following method to the Character class in accessing category.

```
next
  ^(self asInteger + 1) asCharacter
```

What is printed when you evaluate the following expressions in a workspace using "Print It"?

```
$a next
$z next
'xyz' collect: [:each | each next]
```

5. Exit VisualWorks and save the image as CS535. You should now have two images with different names: CS535.im and visualnc.im. Start VisualWorks with the image visualnc.im and search for the method **next** in the Character class. Can you find it? Exit VisualWorks and start VisualWorks with the image CS535.im and search for the method **next** in the Character class. Can you find it?

6. When you find the method **next** in the Character class file it out using the “File Out as...” item in the “Method” menu of the System Browser. Use the VisualWorks File Browser to open the file you just saved. What is the first line of the file?
7. Open the settings window by selecting the “Settings” item in the “System” menu of the Launcher. Select “Source” in the tree view on the left. Change the file-out format to Smalltalk chunk source code. Now file out the method **next** in the Character class again. What is the first line of the file now?
8. Modify your Character>>next method so that:

\$z next returns \$a

and

\$Z next returns \$z

In all other cases the Character>>next method should return the same value as the one given in problem 4. Turn in your source code for the method.

9. Implement a method called "rotate:" in the string class. The method shifts (rotates) each character in the receiver n characters, where n is the argument to method. For example:

expression	returned value
'cat' rotate: 1	'dbu'
'cat' rotate: 2	'ecv'
'zed' rotate: 1	'afe'
'afe' rotate: -1	'zed'

Turn in the source code for this method.

What to turn in

You are to turn in this assignment in class on paper. Print out all your answers on paper. No electronic submissions for this assignment.

Change Log

- 1.1 Changed "sender" to "implementer" in problem 2a.