CMSI 182

Introduction to Computer Science

Fall 2008

Assignment 1014

This assignment seeks to reinforce our new post-midterm topics, and also adds some less technical reading material to serve as food for thought.

Not for Submission

As before, the recommended dates are provide so that you can space your work out better.

By October 9

1. Read Sections 1.1 to 1.4 in the Brookshear book for more details on this week's topic.
2. Be ready with a scheme for representing the following types of information solely in terms of bits (i.e., **0**s and **1**s):
   a. Integers ≥ 0
   b. Individual symbols, a.k.a. *characters*: letters, digits, punctuation)
   c. Text, a.k.a. *strings* [of characters]: "Hello," "computer," "The score is 55.2."

By October 14

Read Peter Denning's *Voices in Computing* article (distributed in class on October 7).

Extra Credit

For additional homework credit, submit the following on hardcopy by the beginning of class on October 14. Each subtask counts as a separate additional credit — the more you do, the more you get.

Acronyms Version 2.0

Modify the acronym JavaScript code from the midterm key so that the code interacts directly with the JavaScript scratch page in the following ways:

1. The text to convert into an acronym is taken from the *Input 1* text field, and
2. The acronym result is displayed at the bottom of the page.

Additional Exercises

Do the following additional textbook exercises, found on pages 73–75: 6, 18, 19, 20, and 22.

For Submission

Submit the following on hardcopy by the beginning of class on October 14.

Exercises

1. Write up your proposed schemes for representing the information listed on the left (integers ≥ 0, characters, and strings). The schemes should specify how to convert this information to binary form and back.
2. Do the textbook exercises 5, 7, 9, 11, and 24, found on pages 73–75.

Reflection

After reading *Voices in Computing*, answer the following reflection questions:

1. What do you think motivated the author to write this article?
2. Did you learn anything new from the article? If so, what did you learn?
3. Was there anything in the article that you did not understand? If so, what was it?
4. Which of the voices in the article appeal to you the most? Provide a brief explanation with some specific personal examples or anecdotes.
5. Modify "the Last Voice" in the article in a way that you think might attract more college students to computer science.