Programming Design, Spring 2014
Suggested Solution for Homework 04

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Problem 1:

(a) The chance should be decrease after a wrong guess, so the output would be “cout << "Wrong. " << 9 - i << " chances left. \n";”

(b) This function starts comparing the first character of each string. If they are equal to each other, it continues with the following pairs until the characters differ or until a terminating null-character is reached. For example, if we compare “ab” and “ac”, the first character is equal but the second one isn’t. ‘c’ is greater than ‘b’ so the function will return a value less than zero.

(c) Using a constant variable to replace the trial array length 20 in order to change the value easily.

(d) The fuction strcmp is defined in cstring(or string.h), the <string> is another library.

(e) The program won’t output correct because cin will stop reading input while a space is encounter.

Problem 2:

The “num” is a pointer that point to the first address of the array. So if we use “num + 1”, the pointer pass to the function is the pointer with offset 1 (means the pointer that point to num[1].) So this program will output the last four elements in array “num.”

Problem 3:

See the file “PD14-04a.cpp.”

Problem 4:

See the file “PD14-04b.cpp.”

The following steps are the way to find LCS:

1. Prepare a local LCS to record the nearest CS, and a global LCS to record the longest CS so far.
2. For each character in sentence, check whether it is a vowel.
3. If it is a vowel, add it in the local LCS. If the local LCS is longer than global LCS, let gLCS = lLCS
4. If it isn’t a vowel, reset the local LCS to empty.
5. After dealing with all character in the sentence, the global LCS is the answer of the problem.

Note that in this problem, space is not in the consideration of consecutive sequence. So if the character is space, the step 4 will be skipped.