Due Date
Monday, October 7, 2013

Program objectives
The objectives of this assignment are as follows.
An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution (ABET b).

Value
This program is worth 15 points. The distribution of points will be as follows.

Criterion	Value
Global functions	1
bag with linked-list	4
Program style	4
Correct output with annotation	5
Error checking	1

Delivery method
Archive your files using the tar command (see below). Attach the tar file which will be named hw4.tar to an email that you send to the class at csc2421@orion.ucdenver.edu In the Subject field, type HW4. In the body of the email type your name, then send the mail. Archive your files as follows. Notice that all file names are in lowercase.

tar -cvf hw4.tar hw4.cpp hw4functions.h hw4functions.cpp bag.h bag.cpp node.h node.cpp

Problem
This exercise asks you to create random sentences from a bag of nouns and a bag of verbs. You should use the standard library function, std::rand( ) to pick the words.

Input
A text file containing 5, space-delimited nouns (line 1) and 5 space-delimited verbs (line 2).

Output
On the standard output, display 5, line-delimited sentences constructed randomly from the 5 nouns and 5 verbs that read from the file. The sentences must be formed properly, and you may use adjectives and adverbs.

Program requirements
1. Present the user with a greeting.
2. Open a file (name in argv[1] to read the data and save.
3. Construct 5 sentences using English syntax (**noun phrase verb phrase)**. You may use adjectives and adverbs of your choice to complete the sentence.
4. Display the sentences on the standard output, then quit.

Notes

1. You are permitted to copy the node class, the linked-list toolkit, and the bag class from the textbook.
2. As usual, style will count as part of your grade. This includes (but is not limited to) whitespace, indentation, header comments, pre and post conditions, value semantics, and short main function.
3. The linked-list toolkit can be placed in the node files. For example, put the prototypes in node.h and the implementations in node.cpp.
4. Use one or more linked-list bags of type T (typedef for an appropriate type that you decide).
5. The standard library function, std::rand( ) generates a uniformly distributed integer in the range [0, RAND_MAX], where RAND_MAX is machine dependent, but is a large, positive number. Therefore, you must write an expression that shifts and scales the output to the range [1, 5]. Furthermore, this must be done through a global function.