

CSC221 – Laboratory #3*

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This lab is concerned with the construction of tables using open address hashing or chaining. In particular you will implement one of these, and use your main program from the last lab to read and insert strings. You must compute the load factor for your hashtable, and when the load factor becomes too high you must rehash. Your smallest table size should be in the 50s and you should basically double the size of the table as needed. You will compute and graph the average number of probes per entry for various load factors.

The lab is worth 100 points.

The input to your program will be text. You will be placing into your table the words of your text with the number of occurrences of each. The first time the word is placed in the table, its number of occurrences is 1. All subsequent accesses for that word will update its number of occurrences. Please note that the Internet is a rich source for text!

You must use a reasonable programming style. Your style must make the program readable to others. You may **not** use global variables.

I strongly encourage you to create a new subdirectory for this lab. You most likely want to copy your main program from the last lab, as well as the Makefile. You must write the code to implement the hashtable as a separate class. It is not necessary to implement it as a template class.

Your program is due no later than the beginning of class on Wednesday, November 12, 2008. This is a pledged work assignment. You must work on this assignment by yourself. You may not collaborate

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with anyone else¹. A good *C++* reference is [1]. If you have questions about your work, you must ask me². Beware, I have little sympathy for late work. Being a student is your full-time job, it is important that you work full-time as a student.

References

- [1] H. M. Deitel and P. J. Deitel. *C++ How to Program*. Prentice Hall, Upper Saddle River, New Jersey, 3rd edition, 2001.

¹You may consult with anyone you wish concerning *C++* syntax questions.

²I will not answer questions concerned with *C++* syntax unless that are unusually interesting. I am more than willing to talk with you about conceptual issues, *make*, and linking and loading problems.