Cosc 2P03 Fall 2014
Assignment#5

(Due date for assignment is Friday Nov. 28th 4:00 p.m., Late date Monday Dec. 1st, 4:00 p.m.)

Data Input Below.

Objective

To implement a double hashing scheme.

The Assignment

This assignment will allow you to implement a hash table using double hashing as a means of collision resolution. Your job is to design a table and the associated functions prior to implementation. The data will be string and count representing the number of times the string appears in the data input. Similar to previous assignments.

Part A.

The following is to be word processed

Design a table which will hold the data set. When all data is entered, the table must be greater then 80% full and less then 90%. The table will need to implement insertion, deletion and find.

What is the size of the table? Prove it?

What fields will the table need to represent?

Give the logical structure of the table.

Design a primary hash function which will distribute the keys (strings) as evenly as possible. Can you prove that the distribution adheres to the principles of good hash functions?

Design a secondary functions which will be used in the event of a collision. Show that this function will adequately produce the desired results.

Data Input Above.

Part B.

Implement the above data structure, and load the table with the supplied input. In the event of a duplicate string, you are to increase the count of this string. Same as previous assignments.

Print the table in order from entry 0 to N indicating (Table Position(0-N), Delete Field State, String, Count).

Rescan the input data and remove every element from the table which starts with a letter between (d - m or D - M inclusive). Print the table a second time using the same format as above.

The data for this assignment is the text between but not including the headings Data Input Below and Data Input Above. You are to treat each word as case sensitive. You may ignore punctuation, brackets, white space and hyphens. A word can be a number. All words are to be trimmed.

Output expected:

- Print out of the table in the format described after all data has been inserted.
- Print out of the table in the format described after elements have been deleted as described above.

Submission Requirements:

- **Cover Sheet** completely filled out, available from: "http://www.cosc.brocku.ca/coverpage" Note: your assignment will not be marked unless one is submitted with the assignment on the assignment due date.
- **Commented and properly documented** source code listing, use Java Doc style.
- Listing of any input you used to test your program.
- Listing of your output which reflects the input.
- Part A to be word processed, hand written submissions will not be marked.
- Source code is to be Java.
- Electronic submission, run the script "submit2p03" from sandcastle.
- Neatly edited response to each part. If you use any web or book sources be sure to reference these.
- Statement on coversheet with following information.
    - Platform, e.g. Mac, PC, Commodor 64, my Java enabled wrist watch.
    - Compiler Version, e.g. Java 1.6, Java 1.7 e.g.

Good Luck