Implementation of data structures and algorithms
Fall 2018
Short Project 7: Comparison of hashing implementations
Thu, Oct 11, 2018

Version 1.0: Initial description (Thu, Oct 11).

Due: 11:59 PM, Sun, Oct 21.

Submission procedure:

* Create a folder whose name is your netid (NId).
* Place all files you are submitting in that folder.
* Use "package NId;" in all your java files.
* Include the class files also in your zip file.
* Include a text file named "readme.txt", that explains how to compile and run the code.
* Zip the contents into a single zip or rar file.
* If the zip file is bigger than 1 MB, you have included unnecessary files.
* Delete them and create the zip file again.
* Upload the zip or rar file on elearning.
* Submission can be revised before the deadline.
* The final submission before the deadline will be graded.
* Only one member of each team needs to submit project.
* Include the names of all team members in ALL files.

Note that teams have changed.

Team task:

1. Implement one or more hashing algorithms from the following:
   Double hashing / Robin Hood / Hopscotch / Cuckoo
   Compare its/their performance with Java's HashMap/HashSet on millions of
   operations: add, contains, and remove.

   Generate an array of random integers, and calculate how many distinct
   numbers it has: static<T> int distinctElements(T[ ] arr) { ... }
   Compare running times of HashSet and your hashing implementation, for large n.