

## CSCI 4370/6370 - Database Management - Fall 2009

### Project 2: Indexing Algorithms

**Due:** Sep 24

#### What to Implement

This project will extend the previous project. You will need to add methods for each of the indexing operations to your existing code.

- Implement indexing using **one** of the following: B+Trees, Linear Hashing or Extendable Hashing. Since you now have an index, you can use it for several other things: speeding up selects and eliminating duplicates (primary indexes). Also conduct a performance evaluation of the algorithms for select: (i) table scan select and (ii) indexed select.
- Print out the indexes to the screen and add appropriate output messages to show the progress of your program using the 'test' attribute in the 'Table' class.
- A performance evaluation of the indexing algorithm on a variety of different tables needs to be included. To do this you will need to use a tuple generator (supplied by the TA) that can randomly produce populated tables given a schema description. Try a variety of different tables with increasing amounts of data in each table. Be sure to run tests on tables that contain at least several thousand tuples. Graph your results on a spreadsheet and summarize the results of the experiment in your readme file.
- Your program must be thoroughly documented (generate javadoc). Use the @author tag for each class and method. Each method should have a single author. The coding workload should be split roughly in half. We will check this by examining the @author tags. Please make sure that the output of your program is easy to understand. Provide a flag for turning on/off your tracing/debugging messages in your program's output.

#### Which Programming Language to Use

Java is required for the project.

#### What to submit

Please submit

- all source code
- all the javadoc files
- spreadsheets and graphs
- a readme file

The readme file should contain: your names, how to compile and run your code and other specifications you want to make. Please pack all your files in a zip package with the file name: "project2" + last names of group members. For example: project1\_chen\_kim.zip

### **How to submit**

Mail your ".zip" file to the TA (Meghana Viswanath)  
e-mail: meghanav@uga.edu