Homework 1: Insertion and Retrieval of Records using Berkeley DB

CSCI 585: Database Systems
Prof. Ghandeharizadeh
Due Date: Lunch time January 27, 2009

Description
The objective of this homework is to familiarize you with Berkeley DB (BDB) as a storage manager. You will use BDB to insert and retrieve 100 records. Each record might be variable length and consists of four attributes:

1. Id: an integer (4 bytes)
2. MemberName: a variable sized array of characters constructed by concatenating a string token (JaneDoe) with the id.
3. Age: an integer (4 bytes) and a function of the record Id; Age = 20 + (id % 15)
4. Salary: an integer (4 bytes) and a function of age; Salary = 40,000 + (Age * 1000)

To simplify implementation, we have made MemberName, Age, and Salary a function of Id. This means that the value of all attributes can be computed in a single for loop, generating a record. Notice that the value of age and salary attributes are correlated with one another.

While Id, Age, and Salary are fix sized attributes, MemberName is variable sized. As an implementation hint, consider placing MemberName as the last attribute of the record. This trivializes a design because it eliminates the need to maintain the size of the MemberName attribute for each record.

Your program must be written in C++ using Berkeley DB and Microsoft Visual Studio. It should (a) insert 100 records into a database named Employee and organized using a B+-tree on the Age attribute, and (b) retrieve all records stored in the Employee table and print the value of all fields of each record.

Deliverables: A zipped archive of your visual studio project uploaded onto the blackboard system http://den.usc.edu.
Due date: Lunch time, January 27, 2009.
Notes: Due to simplicity of this project, no late assignments are accepted.