

# CS44800 Project 1

## Storage and Logs

### Spring 2018

Due: January 23, 2018, 11:50PM

**Total Points: 5**

---

## Tasks

Your goal for the project is to create a very simple database application to store one relation. The application must perform the following tasks:

1. Store a permanent file containing the relation specified on page 153 of the textbook, figure 5.1 (7<sup>th</sup> edition). If you don't have the textbook available yet, this is available on the Chapter 5 slides, slide number 7.
2. Perform INSERT, UPDATE, and DELETE operations on the data
3. Record a log of each operation

You must provide some interface to enter the various update commands. The operations do the following:

INSERT <record>: appends the provided record to the end of the stored relation file.

DELETE <record>: deletes the requested record from the file.

UPDATE <originalRecord> <newRecord>: updates the originalRecord in the file to be the newRecord

The format of the file and the syntax of the commands is up to you. This is a simple project to get you started in the course, so you do not need to overthink things: your application will not be tested for whether it can handle errors like a mismatched schema or updating/deleting records that are not there.

After performing each operation, the database should ensure that the updated file is saved to the disk, and should also maintain a log of the operations performed. Record an entry representing the operation performed in the log and save the log to the disk.

If your program works correctly, you should be able to start with some database file representing the relation, perform update operations, and end with an updated database file and have generated a corresponding log file.

Choice of the format of the file, commands/interface, and choice of language are up to you. However, **make sure that your application can run on the University machines**. If it cannot be run, this may cause delays in your grading. Java, Python, or C are good standard options for programming that should work on the university machines.

## What to Turn in

1. A database file containing the starting contents of the relation
2. An application allowing updates of the database file and generating the log
3. **VERY IMPORTANT:** A README file specifying how to run the program and what the syntax of the commands are. Since there is no set specification for how to format the application and how to run it, **this README file is part of the grade and you will lose some points if it is not provided.**

In the README you may also include your own set of commands that show the correctness of all the tasks of the assignment in case there are issues with grading. If you choose to do this, include at least one each of INSERT, UPDATE, and DELETE operations.