**CSCE 4523 Database Management Systems**

**Homework 1**

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**Objectives**

The objectives of this homework are to practice and understand basic methods for managing a database such as create database, open database, close database, display record, update record, create report, add record, delete record, and quit.

**Approach**

How did you handle overflow file (methods)?

We implemented these objectives using C++ on visual studio code. Our strategy was to work carefully through each method one by one, making sure to test each part of each method individually in order to limit the amount of unknown errors. For our formatting for the database file we listed fixed length records in order of least to greatest passenger ID. For fields we had ID (size =7), first\_name (size =12), last\_name (size =20, age (size =3), ticket\_num (size =20), fare (size =6), and finally purchase\_date (size =10). When reading from the .csv we used ‘,’ for the delimiter and wrote to the .data database with a total record size of 20.

A screenshot of a computer

Description automatically generated

Sample record

We also had a .config file which kept track of the record size and file size.

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Description automatically generated

Config file

We used the provided C++ sample code from Dr. Gauch’s site and built upon it to complete this assignment. Finally, for overflow file methods we used simple if conditional statements to check if the file was full.

**Results**

For error handling we used lots of conditional statements, mostly ifs to make sure user input values were within acceptable ranges. What worked best for us was voicing our ideas for how to implement each method between each other to find middle ground in an attempt to work more efficiently.

**Testing**

For testing, we used the provided test cases word document to make sure each method worked exactly as intended. In the end, everything worked as expected.

**Typescript**

See submission file for typescript