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Module 5 Narrative

CS 499

4/6/25

The artifact I chose was Project Three from CS210, C++ class. The program was to open and read an input file and place data in an output file. It was a very basic program and was created back in late 2023 I believe. I wanted to enhance this program to read a file and place the contents into a SQL database and be able to perform CRUD operations. The original program used a simple text file. I decided to make the program use a csv file because a lot of data is stored in excel files. I was able to find a sample csv file with random data to use for my project. After the enhancements, I realized I basically created a whole new program. I would say enhancement is either a stretch or an understatement depending on how you look at it.

I chose this artifact because it shows different skills. It demonstrates skills in C++ programming language, working with a relational database, and demonstrates my ability to adapt to different data files. The artifact was greatly improved by adding more functionality that would be useful in the real world.

I met some of the course outcomes with this enhancement. I met outcome one with employing strategies for collaborative environments. I am still working on outcome five. I want to make sure my queries do not lead to SQL injection attacks.

I have learned that some great, thought-out plans do not go as expected. I thought this enhancement would be straight forward and I would have very little issues. However, I ran into issues with some of my functions. I can not get my insert data function to work. It will not insert the data from the CSV file that I placed into a vector. I want to perform a bulk insert and tried many different methods without success.

Questions:

Any thoughts on the best way to insert the data from the CSV file?

I tried:

1. Reading the file and inserting the data into a vector. Then I tried looping through the data while inserting it into a table w/o success. It seems to only put in ID 1, then it stops.
2. Then I tried to insert straight from the CSV file but didn’t really get anywhere with that. I kept running into exception errors with this attempt.
3. I tried inserting a test data manually to make sure my SQL statement was functioning properly which it was.
4. I attempted to use a SQL statement and binding function but could not fully understand the literature to execute it properly.

**Status Checkpoints for All Categories**

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| --- | --- | --- | --- |
| **Checkpoint** | **Software Design and Engineering** | **Algorithms and Data Structures** | **Databases** |
| **Name of Artifact Used** | Artifact Name: Project Three, utilizing functions to process file data.  Origin: CS 210, C++ | Artifact: Project Two, Junit Testing  Origin: CS320, Software Testing | Artifact Name: Project Three, utilizing functions to process file data.  Origin: CS 210, C++ |
| **Status of Initial Enhancement** | Completed. | Submitted but it needs more enhancement. Ran into issues testing program. | In process. Setting up SQLite Database. |
| **Submission Status** | Submitted 3/23/25. | Submitted 3/30/25. | Submitted on 4/6/25. |
| **Status of Final Enhancement** | In process. | In process. | Not completed. |
| **Uploaded to ePortfolio** | Not completed. | Not completed. | Not completed. |
| **Status of Finalized ePortfolio** | Not complete | Not complete | Not complete |

vector<string> openFile(string fileName) {

fileName = "CS210\_Project\_Three\_Input\_File.txt";

ifstream file(fileName);

vector<string> productList;

string fileLine;

if (!file.is\_open()) {

cout << "Could not open file." << endl;

}

else {

while (!file.eof()) {

getline(file, fileLine);

productList.push\_back(fileLine); //adds each item into vector

}

}

return productList;

file.close();

}