CSCE 156/156H
Assignment 5 - Project Phase IV
Database Connectivity – Data Retrieval

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1 Introduction

You will modify the application you developed in Phases I & II to interact with the database you designed in Phase III. Your application will be modified to load data from your database rather than from flat data files. Specifically, you will implement methods to connect to your database using the Java Database Connectivity API (JDBC), load the data into your Java objects and produce the same summary and detail reports.

1.1 Database Connectivity

For grading purposes, the database you designed in the previous assignment will need to be setup on your MySQL account on the cse server. Your code should be configured to connect and interact with this database. You should add/remove/modify data to your database as needed for your own testing purposes, but when we grade your program, your test cases should be loaded into the database to produce the report. In the next phase you will add functionality to add and remove data.

2 Requirements

You will modify the Java classes you developed in the prior phase to make the following updates.

The driver class that generates the summary and detail reports will retain its functionality; however instead of reading data from flat files, it will make a connection to your database,

load the appropriate data and create the appropriate objects. It is highly recommended that you implement (and reuse) several *factory* methods that retrieve instances of your defined classes by loading from your database. The webgrader will run your JAR file which should make the database connection and produce the reports.

3 Artifacts

You will turn in all of your code and artifacts using the usual process. Name your JAR file `Project.jar` and hand it in using the CSE webhandin.

4 Design Write-up

Your design document draft will be for *both* this assignment and the next (both data retrieval as well as data insertion/deletion). You will update and modify your Design Document draft to include details on your new database API. You must hand in an updated printed hardcopy will be handed in 1 week prior to the assignment due date.

In the new section, make sure to given enough details so that a technically competent individual would be able to reasonably reproduce an implementation of your design. Be sure to address at least the following.

- How are records loaded from the database and into Java objects?
- How does your API persist data to your database?
- What are the various side-effects of each method? That is, what other records are consequently removed from the database in order to maintain data integrity?
- Document any additional helper methods that you designed and implemented
- What, if any, data validation do you perform? Where does the validation occur? What expectations do you place on the user with respect to the API?
- The API allows a user to submit `null` data–what consequences does this have on how have you handled it?
- Detail your testing strategies and any changes that were made as a result