

Department of Computer Science
The City College of CUNY

CSc 22100: Software Design Laboratory [Fall 2019]

Project

A printout showing the codes (including DML and SQL scripts) developed and outputs produced for the tasks indicated is due during and before the end of the class on Tuesday, 10 December 2019. The deadline is strictly observed.

Demonstration of the project is required. Demonstration of the project is scheduled on Tuesday, 17 December 2019 from 2:00 pm to 4:45 pm.

Consider the **Student** database and Listing 25.2 in Chapter 25 of the textbook. Your tasks are:

- a. Amend the database to include the following Tables: **Students**(studentID, firstName, lastName, sex), **Courses**(courseID, courseTitle, department), and **Classes**(classCode, courseID, studentID, year, semester, GPA) Table. The underlined attributes are the primary keys of their corresponding tables. The value of attribute sex may be either 'F' or 'M'. The Only GPAs allowed in the database are A, B, C, D, F, and W.
- b. Amend Listing 25.2 to build and test a Java application that connects to the amended database, creates and populates the **Students**, **Courses**, and **Classes** Tables.
- c. Amend Listing 25.2 to return and display the number of students enrolled in CSc 211 in the Fall 2019 semester and their GPAs.
- d. Utilize the Java class **PieChart** in Exercise 3 to build and display a pie chart showing the proportion of students for each GPA. In the pie chart:
 - i. Each segment has a different color;
 - ii. Each segment has a legend showing the corresponding GPA and number of students;
 - iii. The segments for the GPAs are displayed in alphabetical order.

Your report should show all DML and SQL scripts used in a separate section with appropriate heading. Your application should utilize JavaFX graphics and "PreparedStatements" for the execution of SQL statements/queries. You may use any Relational Database Management System (RDBMS) of your choice.

Best wishes!

Hesham A Auda
18 November 2019