



DEPARTMENT of COMPUTING

College of Business & Technology

EAST TENNESSEE STATE UNIVERSITY

CSCI 5000 – DATA MANAGEMENT

PROJECT 3 – UPDATING AND REPORTING FROM A RELATIONAL DATABASE

OVERVIEW

One of the most important aspects of data management is leveraging the data to gain information and insights. This project asks you to set up and verify an existing data store that models a university preparatory program. The database tracks students enrolled in the preparatory program, college entrance exams they have taken, volunteer work and other activities, schools that they have applied to, and their parents/guardians.

PROJECT GOALS

1. Set up and verify an existing data store.
2. Modify data using UPDATE, INSERT, and DELETE statements.
3. Report on data using simple and complex SELECT statements.

PROJECT PREPARATION

COPY DATA

1. Download the file, **createTables.sql**, from D2L. In this file is the SQL necessary to create a database complete with tables populated with data.
2. Using SQL Developer, connect to your database.
3. From the SQL Developer menu, select File→Open and navigate to where you downloaded **createTables.sql** and open that file. You should see the SQL code in your SQL editor.
4. Click the **Run Script** button.
 - a. After this has run through completion, view the log. The only errors you should see in the log are DROP TABLE failures. DROP TABLE failures can be caused by a number of things. The table likely did not exist. **Do not be alarmed if you get these failure messages.**
 - b. **You should see where the 10 tables were successfully created** as well as the tables altered after adding primary keys and other constraints. You should also see where the indexes are successfully created.

VERIFY DATA

Explore the new database and ensure the number of records for each table matches the following row counts.

Order	Table	Records	Order	Table	Records
1	STUDENT	10,369	6	ACTIVITY	77,726
2	SCHOOL	7,160	7	SCHOOL_APPLY	39,488
3	GUARDIAN	10,514	8	SCHOOL_ATTEND	9,568
4	EXAM	3	9	STUDENT_GUARDIAN	13,600
5	VOLUNTEER_WORK	43,331	10	STUDENT_EXAM	23,329

On D2L, I have provided an ER Diagram that details the layout of the database.

PART 1: MODIFYING DATA

For each of the following, provide (1) the SQL statement(s) used, (2) the result of executing the statement(s) (number of rows affected or failure), (3) and why the statement(s) did not succeed (if failure occurred). **Some of these tasks may result in an error. You are not to fix the error, only report the error.** Use comments in your SQL file so I can easily find your answers. **Save your file as Project3.sql.**

1. There was an error when inserting Justin Haberman's name (student ID 10390). The student's name should be Justin Haberman-McHadden. Update the student's record accordingly.
2. SSAT test scores (exam ID 0) for students who took the exam on 03-14-2011 have been received. Add the following scores to each student:
 - a. Becki Hutchcroft (student ID 46) – 924
 - b. James Larcom (student ID 1850) – 1232
 - c. Pauletta Difusco (student ID 2844) – 1109
3. Anne Benjamin (student ID 18949) is no longer with AP. Remove the student from the student table.
4. AP has received notification that on 12-20-2010 Antony Podaras (student ID 1007) transferred from the University of Miami (school ID 12106) to the University of South Florida (school ID 12460).
 - a. Update Antony's school attendance for the University of Miami to have an end date of 12-20-2010 and an end reason of Transfer.
 - b. Add a new school attendance for Antony for the University of South Florida with a start date of 01-15-2011.
5. Carlie Goldsmith (student ID 8992) has received a new legal guardian.
 - a. Enter Margaret Yuters (guardian ID: 22583; Address: 1382 N. 5th Ave. Sarasota, FL 34234; Phone: (941) 341-1961) as a new guardian. (Note: only numbers should be entered for phone (no spaces, parentheses, dashes, etc.).)
 - b. Associate Margaret as being Carlie's new Legal Guardian. (Remove Talisha Katie (previous guardian; guardian ID: 9914) as Carlie's legal guardian, but do not remove Talisha from the database.)

PART 2: REPORTING FROM THE DATA

Continuing within your SQL file, for each of the following, **provide (1) the SQL statement(s) used and (2) the number of results returned.** Again, be sure to add comments so I can find each individual query. Some queries may require joins. Side Note: column aliases do not work in WHERE clauses because the SELECT portion of the SQL statement is performed after the WHERE portion

1. Display the exam name, average score, and the number of attempts for each exam. Only exam attempts taken starting from the beginning of 2006 should be included in the calculations. Display the exam with the most number of attempts first.
2. Display the student name and number of school applications that were accepted for each student. The name should be displayed in "last, first" form. Also, only current 8th graders who had two or fewer acceptances should be shown. Students with the most acceptances should be displayed first. Students with the same number of acceptances should be listed A-Z by the last name and then the first name.
3. Display each student's first and last name along with the college he or she is currently attending. Only include students who have graduated from AP since 2006 and are attending a college in Georgia. Results should be shown by the college name first and then student last and first name.
4. Display each student's first and last name, a description of his or her volunteer work, and the number of days he or she worked on his or her volunteer project. Include students that worked on the project for 30-90 days and are in the 5th grade. Display those students who worked the longest on their projects first.
5. Obtain a list of all current students and their foster mothers or foster fathers who do not live in the same city—display names in "last, first" format. Also, use the column headings of "student_name" and "guardian_name" (i.e., you should combine the names using concatenation). Sort the results by student_name in ascending order.
6. Display each student's grade level, last and first name, and phone number (which does not need to be formatted). Students should be sorted by grade level, last name, and first name.
7. Display the number of students currently enrolled for each grade level (in grade-level order). (Note: the grade levels only range from 1–8; kindergarten is not considered.)

PART 3: REFLECTION

This portion counts as Lab Journal 5-2. Include your reflection in a **Journal5.2.docx** document. Be sure to include:

1. A reflection of your experience learning through this activity.
2. A reflection of the importance of learning this material.

PROJECT SUBMISSION

Submit the following work to the **Project 3 dropbox**.

1. **Project3.sql** – the SQL file that contains the UPDATE and SELECT statements from Parts 1 & 2

Submit the following work to the **Journal 5.2 Dropbox**.

1. **Journal5.2.docx** – the reflection questions from Part 3.

The grading rubric appears on the next page.

The suggested deadline to maintain pacing is Monday, November 1, 2021.

GRADING RUBRIC

PROJECT ACTIVITY GRADING RUBRIC

Criterion	A-Level 10 Points	B-Level 8 Points	C-Level 6 Points	D-Level 4 Points	F-Level 2 Points	No Attempt 0 Points
	Excellent; All aspects correct	Minor Errors	Code works the result is not correct	Code does not work; fair attempt	Code has significant issues	No answer
Part 1 – Modifying Data						
1.1 – Haberman update						
1.2 – SSAT Scores						
1.3 – Remove Anne Benjamin						
1.4 – Podaras Transfer						
1.5 – Goldsmith Guardian						
Part 2 – Reporting from the Data						
2.1 – Exam Report						
2.2 – School Applications Report						
2.3 – College Attendance Report						
2.4 – Volunteer Work Report						
2.5 – Foster Family Report						
2.6 – Phone Book Report						
2.7 – Enrollments by Grade Level Report						

REFLECTION GRADING RUBRIC

Criterion	Excellent	Good	Average	Below Average	Poor	No Attempt
Activity	10 points Completes all aspects of the activity correctly	8 points Completes most aspects of the activity correctly	6 points Completes aspects of the activity correctly, and some incorrectly	4 points Completes most aspects of the activity incorrectly, or does not attempt many aspects	2 points Minimal effort or completes few aspects of the activity or very few correctly	0 points Did not complete the activity
Reflection	10 points Reflection clearly ties to the module content; experience and importance clearly laid out	8 points Reflection mostly ties to the module content; experience & importance are discussed	6 points Reflection ties minimally to the module content; experience & importance are discussed but not thoroughly	4 points Reflection does not tie to the module content; experience & importance are minimally discussed	2 points Minimal effort to tie to content; minimal effort to describe experience/ importance	0 points Did not complete the reflection

