Database Assignment #2

Structured Query Language (SQL) (expected time – 2 to 6 hours)

Learning Objective:

1. Understand how to write SQL statements and run queries to retrieve data from databases;
2. Master the basic usage of SELECT statement;
3. Get familiar with the popular database management system (DBMS), Microsoft Access.

Tasks:

a) Start Microsoft Access and familiarize yourself with its user interface. Detailed instructions on how to create databases, import tables, run SQL queries, and all other operations necessary to complete the tasks can be found in the file **MS Access Instructions.pptx** under T-Square->Resources->**MS Access**.

b) Download the **three** Access database (.accdb) files attached to the homework from T-Square (**Problem1.accdb, Problem2.accdb, and Problem3.accdb**). All tables necessary to complete this homework have already been imported in the database files. There is no need to further import any data yourself.

c) For each of the three problems, **create two queries**. Enter the appropriate SQL statement for each query, and do the following:

   o Run the SQL statement you entered. If the outcome is not what you want, you can always modify the SQL statement and run it again.

   o Once you get the right query results, **SAVE your queries in the database file**.

   Note: **Before submitting, make sure that each .accdb file has its two corresponding queries (including the full SQL statements) properly saved. You will NOT receive points if queries are missing or improperly saved in the submitted homework files.**

MS Access Availability:

- Most standard versions of Microsoft Office includes Access, along with Word, Excel, etc.

- Most computers available for public use around the campus have MS Access installed, for example, in GT Library, in the 1st Floor lab in the Scheller College of Business building, etc.

- You can also remotely access virtual desktop through https://mycloud.gatech.edu. Login with your GT credentials and then select either "Library -2015" or "COB-Lab2014-Remote" virtual desktops. More detailed information about MS Access Availability can be found in **MS Access Availability.pptx** under **T-Square->Resources->MS Access**.

Naming Convention: RENAME the three Access database files using the following naming convention – **LastFirst-ProblemX.accdb** or **LastFirst1-LastFirst2-ProblemX.accdb**, where X = 1, 2, or 3. For example, BrownAlice-SmithJohn-Problem2.accdb.

Submission: Submit the **three Access database (.accdb) files** through the "Assignment" page on T-Square. If you work in a two-person team, only one submission is needed. **Please make sure to include both team members' names in the file names following the naming convention.** The assignment is **due on Apr 19 (Wednesday) at 12:00pm (noon)**. The submission link will close automatically after the assignment is due.

Problem 1 – Frequent Flyer Records

File "**Problem1.accdb**" contains the normalized database structure (3 tables) for the sample question in DB HW #1. Go back to last homework and review the sample problem for the context.

Write the appropriate SQL statements for each of the following queries, run them in MS Access, and save the queries in your Access database file.

    i.   A query that retrieves the distinct frequent flyer IDs of the passengers who have ever taken flight US1511, with the output results sorted in ascending order by frequent flyer ID.

    ii.   A query that will retrieve the distinct frequent flyer IDs and names of those passengers who took some flight(s) with fare between $300 and $500.

Problem 2 – Job Interviews at Manybranches Company

File "**Problem2.accdb**" contains the normalized database structure (3 tables) for Problem 1 in DB HW #1. Go back to last homework and review Problem 1 for the context.

Write the appropriate SQL statements for each of the following queries, run them in MS Access, save the queries in your Access database file.

    i.   A query that will retrieve the candidate IDs, interview rounds, and interview results for those interviews whose results are "pass" and rounds are either the first or the second, with the query results sorted in descending order by candidate ID.

    ii.   Retrieve the distinct IDs and names of those candidates who have ever interviewed at a branch located in Atlanta, GA or Austin, TX. **Use set inclusion to write the conditions**. **(You may lose partial points otherwise)**

Problem 3 – Book Loans at Awesome University Library

File "**Problem3.accdb**" contains the normalized database structure (4 tables) for the Problem 2 in DB HW #1. Go back to last homework and review Problem 2 for the context.

Write the appropriate SQL statements for each of the following queries, run them in MS Access, save the queries in your Access database file.

    i.   A query that will retrieve the student IDs, student names, book call numbers, and due dates for those instances when a student borrowed a book before 2012/02/15 but has not returned it yet, sorted first in descending order by student ID and then in ascending order by due date.

    ii.   A query that will retrieve the distinct book ISBN, book titles, and book first author names for those books ever borrowed by students from the management department (MGT).