QMB 6358: Software Tools for Business Analytics
Executive Development Center
College of Business
University of Central Florida
Fall 2020

Assignment 8

Due Wednesday, December 2, 2020 at 11:59 PM
in your GitHub repo.

Instructions:

Complete this assignment within the space on your GitHub repo in a folder called `assignment_08`. In this folder, save a copy of your SQL scripts and the output in folders called `question_01` and `question_01` for Questions 1 and 2 in this assignment. The data for the required tables are provided in each of the folders for the respective questions.

When you are finished, submit your code by pushing your changes to your GitHub repo, following the instructions in Question 3. You are free to discuss your approach to each question with your classmates but you must `git push` your own work.

Question 1:

Use the database `AuctionsDataBase.db` from the in-class demonstration to pull new datasets from those tables as described below. The datasets are needed to provide information for the accounting department of the auctioneers. Their accounting system is down and they have called you to calculate the information direct from the database, using SQL queries. Save your queries and resulting tables for this question in a folder called `question_01` under your main folder `assignment_08`.

a) Write a SQL query that calculates the highest bid for each auction and stores it with the associated AuctionID.

b) Write another query that collects the AuctionID, Date and highest bid for each auction, along with the BidID and BidderID from the winning Bid. You can build on your answer to part (a) by embedding that query into this one.

c) Make a similar table that joins these fields with the volumes from the auctions to calculate the total revenue for each auction. Then output the AuctionID, Date, TotalRevenue and BidderID for each auction. This list will help accounting reconcile the bank statements.

d) Extend this by tabulating the TotalRevenue by fiscal quarter. For financial statements, only the Quarter (YYYYQX form, X from 1-4) and TotalRevenue are required.

Question 2:

In this exercise, you will design your own database to organize information contained in a list of spreadsheets. The database consists of information about students and employees at a major university you might be familiar with. Save your queries and resulting tables for this question in a folder called `question_02` under your folder `assignment_08`.

a) Begin by getting familiar with the contents of the spreadsheets in the folder `question_02` (after copying them to your own folder, of course). Form an entity-relationship diagram as in page 65 of the textbook and save an image of it in the folder for future analysts to understand the structure of the database. A photo of the whiteboard or notepad will do fine.

b) Create a schema for each of the tables, each named `<TableName>`, to match the file names `<TableName>.csv` and save them in a files called `Create<TableName>Table.sql`. Then import the data from the `.csv` files into each of the tables.

c) Some administrators at the Institute for the Prevention of Student Overtiredness are concerned that students' academic performance may suffer if they work while studying. To help these students, you can provide a list of all full-time students who also work on campus, along with their name, NID and GPA. Provide the script and the list output from the script.

d) The Centre for the Investigation of Student Connectivity is interested in documenting student and employee involvement in coursework, employment and extracurriculars. Create a list with NID, first name and last name for each member of the university community, along with their employer and job title, extracurricular group and position, and course codes. Provide the script and the list output from the script.

Question 3:

Push your completed files to your GitHub repository following these steps. See the `README.md` and the `GitHub_Quick_Reference.md` in the folder `demo_04_version_control` in the QMB6358F20 course repository for more instructions.

1. Open GitBash and navigate to the folder inside your local copy of your git repo containing your assignments. Any easy way to do this is to right-click and open GitBash within the folder in Explorer. A better way is to navigate with UNIX commands.

2. Enter `git add .` to stage all of your files to commit to your repo. You can enter `git add my_filename.ext` to add files one at a time, such as `my_filename.ext`. in this example.

3. Enter `git commit -m "Describe your changes here"`, with an appropriate description, to commit the changes. This packages all the `add`ed changes into a single unit and stages them to `push` to your online repo.

4. Enter `git push origin master` to push the changes to the online repository. After this step, the changes should be visible on a browser, after refreshing the page.