MSBA 5223 – Database Foundations
Assignment 6

The purpose of this assignment is to help you practice the following skills that are essential to your success in this course and in your professional life beyond school if you have the opportunity to work with databases.

- Apply knowledge that you have acquired from your readings or in class
- Code SELECT statements that require any of the language elements presented in these chapters or previous chapters.

Another purpose of this assignment is for you to possibly struggle and feel confused while you apply what you have learned in a slightly different context than what was provided in examples. This will allow you to internalize the use of the various techniques and develop your own approach for addressing problems. The purpose is NOT to make you struggle overmuch and hit your head against a brick wall. Work with your study group! If you don't know why something isn't working, ask me! If you are not sure why something is doing something other than you expected, ask me. I am here to help you learn although I do expect you to think about it and try before asking!

Notes about submitting your assignment:

More detailed information was in Assignment 2.

Be sure to save your document periodically. When you have finished the assignment, save the document as a PDF.

Submit the PDF to the assignment.

Each answer is weighted equally and is worth 12.5 points.

Execute Queries with Functions to Retrieve Information from the MurachCollege Database

Make sure all columns have appropriate column names.

1. Write a SELECT statement that returns these columns from the Instructors table:
   The AnnualSalary column
   A column named MonthlySalary that is the result of dividing the AnnualSalary column by 12
   A column named MonthlySalaryRounded that calculates the monthly salary and then uses the ROUND function to round the result to 2 decimal places

   Paste your entire query into Word.
   Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #1.

2. Write a SELECT statement that returns these columns from the Students table:
   The EnrollmentDate column
   A column that returns the four-digit year that's stored in the EnrollmentDate column. Name this column **EnrollYear**.
   A column that returns only the day of the month that's stored in the EnrollmentDate column. Name this column **EnrollDoM**.
   A column that returns the result from adding four years to the EnrollmentDate column; use the YEAR() function so only the year is returned. Name this column **PossibleGradYear**.

Paste your entire query into Word.
Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #2.

3. Write a SELECT statement that returns these columns:
   The DepartmentName column from the Departments table
   The CourseNumber column from the Courses table
   The FirstName column from the Instructors table
   The LastName column from the Instructors table
   Add a column that includes the first three characters from the DepartmentName column in uppercase, concatenated with the CourseNumber column, the first character of the FirstName column if this column isn't null or an empty string otherwise, and the LastName column. For this to work, you will need to cast the CourseNumber column to a character column.
      As an example, this course would look like **MSB5223TWilliams**.

Paste your entire query into Word.
Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #3.

4. Write a SELECT statement that returns these columns from the Students table:
   The FirstName column
   The LastName column
   The EnrollmentDate column
   The GraduationDate column
   A column that shows the number of months between the EnrollmentDate and GraduationDate columns
   Return one row for each student who has graduated.

Paste your entire query into Word.
Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #4.

5. Write a SELECT statement that answers this question: What is the total number of courses **taught by parttime** instructors? Return these columns:
   The instructor last name and first name from the Instructors table in this format: Doe, John
      When the instructor's first name is NULL, use **FNU** as the first name (First Name Unknown)
   The total number of courses taught for each instructor in the Courses table
   Use the ROLLUP operator to include a row that gives the grand total. The grand total row should have the InstructorName (or description) as **Grand Total**.

Paste your entire FINAL query into Word.
Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #5.

Execute Queries with Functions to Retrieve Information from AP

6. You need to show the number of sales for each InvoiceDate along with a running total and a 7-day lag.

   To do this, first write a query that will list each InvoiceDate with the number of sales for that day. You should have 71 rows.

   Then use that query as a subquery in the FROM clause of a new query. This query will list these columns:
   - InvoiceDate
   - The number of sales for this date in a column named NmbrSales
   - The running total of sales in a column named RunningTotal
   - The 7-day lag of the number of sales in a column named 7DayLag

   You will have 71 rows. The 7-day lag of the first 7 rows will be NULL. Think about it.

   Paste your entire FINAL query into Word.
   Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #6.

Execute Queries with Functions to Retrieve Information from AdventureWorks

7. Type and execute a query that uses the **CASE** statement to create a column for all three names in Person.Person. When the MiddleName is NULL, nothing should be displayed for the MiddleName. Name this column **FullName.**

   When that is working, add a column that uses the **CASE** statement to evaluate the column Person.Person.PersonType. Use a column name of Person_Type. You can find the definition of the types here - https://www.sqldatadictionary.com/AdventureWorks2014/ (They are the same in 2017.)

   Paste your entire query into Word.
   Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #7.

8. Create and execute a new query that will list the LastName, TerritoryName, CountryRegionName from Sales.vSalesPerson. Do not include rows where the TerritoryName is NULL. Sort the results by the TerritoryName when the CountryRegionName is the United States and by the CountryRegionName when it is not. (Hint: Use a CASE statement in the ORDER BY clause.)

   Paste your entire query into Word.
   Use the Snipping Tool to capture the complete Results area of your query. Paste it into your Word document as Answer #8.

9. Make sure your name and the page numbers are on your document. Submit the one document **as a PDF** to Assignment 6.