

MISM 6210 - Assignment 2

Myles D. Garvey, Ph.D

Spring, 2021



1 Week 1 Problems

(50 Points) From our discussions held in class on 2/3, 2/10, and 2/17, you should be able to answer the following questions.

Take the dataset from the previous assignment that you created and answer the following questions:

1. Normalize the dataset. Identify and list the tables that should be created, the types of columns for each table, as well as the primary and foreign keys of each table.
2. After you have identified the tables, types of columns, and primary/foreign keys, create a MySQL Database that stores this information.
3. Once the information is stored in the database, create a MySQL query (using SQL) that will create a dataset with the columns "metric name", "year", and "metric value", where the unit of analysis is "metric - year" (one row uniquely identifies a permutation of a financial metric and the year, such as "Revenue - 2011"). Think about what you need to do to make the conversion from "metric-company-year" to "metric-year". How might you do this? I will leave the method of conversion (more specifically, aggregation) up to you, but it must indeed aggregate the data in some way. Hint: First create a query that returns a table where the unit of analysis is financial metric - company - year. Then craft a query on this table that will render the intended result.
4. Suppose you wanted to prepare a dataset, based on this one, for visualization. The visual will have the year on the x-axis and percentage change of the aggregated metric found in the previous problem on the y-axis. Here we will only care about operating income and cost of goods sold. Create a query that will return a dataset that will allow us to create the described visual.

2 Week 2 Problems

(50 Points)

5. Import the resulting data from the previous question into Tableau. Create the described visual from earlier.
6. Draw a correlation plot between cost of goods sold and operative income. Do this for all 5 companies in the same plot in Tableau.

3 Submission Requirements

Please submit all work to canvas. Here is how to prepare and submit your work:

1. Questions 1 and 2 should be put into MySQL. Export the database to a "Self Contained File (.sql)" and submit this .sql file. In addition, create an ERM Diagram for your database. This can be accomplished as we discussed in class (Go to Database>Reverse Engineer to create one in MySQL Workbench). Copy the diagram and paste into Word.
2. Questions 3 and 4 should have the SQL code put into Word.
3. When you completed everything, save the word file as a PDF and submit this.

Do **NOT** hesitate to reach out to me. I am very approachable. But you are responsible for initiating any questions you may have. Please do not wait until the last minute to start these problems!