



## CLASSROOM PORTAL FOR THE COLLEGE OF INFORMATION SCIENCES AND TECHNOLOGY

### Lab 1: Discovering a Database Design

#### Database: Magnet Supply Company Sales System

The Magnet Supply Company Sales System is a database system used by a hypothetical distribution company located in Pennsylvania. The database has been designed, implemented, and populated with data and will be used for several labs in IST 210.

#### SCENARIO

As an Information Technology professional, you have been assigned an IT task that requires the understanding of the design of a database. The database was designed and implemented by an outside consultant. There is minimal documentation available and other staff members are not familiar with the details of the database. Therefore, you must depend on the features of your DBMS software (SQL SERVER in this lab) to gain an understanding of the underlying database structure.

This lab is to provide you experience using SQL Server Management Studio to discover the design of Magnet Supply Company Sales Order System, an already implemented database.

The Magnet Supply Company database is located on the VLABS environment and SQL SERVER upsql. Please refer to the "Getting Started" lab for instructions on how to log into the SQL SERVER in the VLABS environment.

The database tables are stored in the IST210-ONLINE database schema. This schema is read only and is accessible by all in the class. A schema has only been created for each student with the schema name being the login id of the student. But for this lab, you will only be using the IST210-ONLINE database schema.

#### HOW TO USE OBJECT BROWSER

After logging into upsql database using Management Studio, locate the object browser (frame on the left). Click the "+" to the left of Databases to expand the list of all the database schemas available on the server. Use the scroll bar within the object browser frame and find IST210-ONLINE database schema.

Click the "+" to the left of IST210-ONLINE to expand object categories. For this lab, you will be working with "TABLES". The eight database tables for Magnet Supply Company can be identified with the prefix 'MSC\_' in the name of the tables. You can click on the "+" to expand each of the tables. Explore the columns, keys and constraints for each table by expanding the object. The information provided under these items will provide insight into the database design and allow you to complete this lab.

#### HOW TO USE "SP\_HELP" TO RETRIEVE METADATA

Another method to retrieve metadata is to use the SQL command window in Management Studio and execute SP\_HELP and the name a database object. First, you need to navigate to the IST210-ONLINE database and click on the Tables folder. Now, click "New Query" located on the menu bar. This will open up the query editor to the right of the object browser. Type, in the command window, SP\_HELP followed by a table name. For example: SP\_HELPMSC\_job (do not include the dbo. Prefix). Click the "Execute" button, which is located on the line just above the SQL command editor. You should now see a series of results that display various information about the database.

#### USE OF DRAWING SOFTWARE

Microsoft Visio is available to you in VLABS or you may decide to obtain the software for your own personal use. Microsoft Visio software is available free of charge through Penn State's subscription of Microsoft Imagine.

#### YOUR LAB ASSIGNMENT

Here is the lab assignment:

1. Create a data dictionary for Magnet Supply Company Order System using the data dictionary example in the textbook as the format.
2. Create a relational diagram for Magnet Supply Company Order System.
3. Execute SQL select commands (see "Getting Started" lab) and answer the following questions: (answer the question but also provide SQL and result)
  - a. How many different job codes are available?
  - b. What is the job code for Louise Daniel?
  - c. What is/are the name(s) of the vendor(s) location in MI?
  - d. What is the order quantity in stock for product 4006?
  - e. What is the zip code for customer 1004?

f. What is the sale price for product 4007?

Please prepare your answers in a document and submit it in Canvas. Remember to (1) answer the question (2) provide the SQL used to answer the question (3) provide the entire data display for the execution of the SQL command and (4) provide the "row(s) affected" message from the execution of the SQL command. Always be sure to include a heading in any document with your name, a brief descriptive title and a date.

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