Homework Assignment 2

[DUE Friday, April 21, 2017]

to your Canvas "Homework Assignment 2" by NO LATER THAN 11:59:00.00PM, [SHARP]

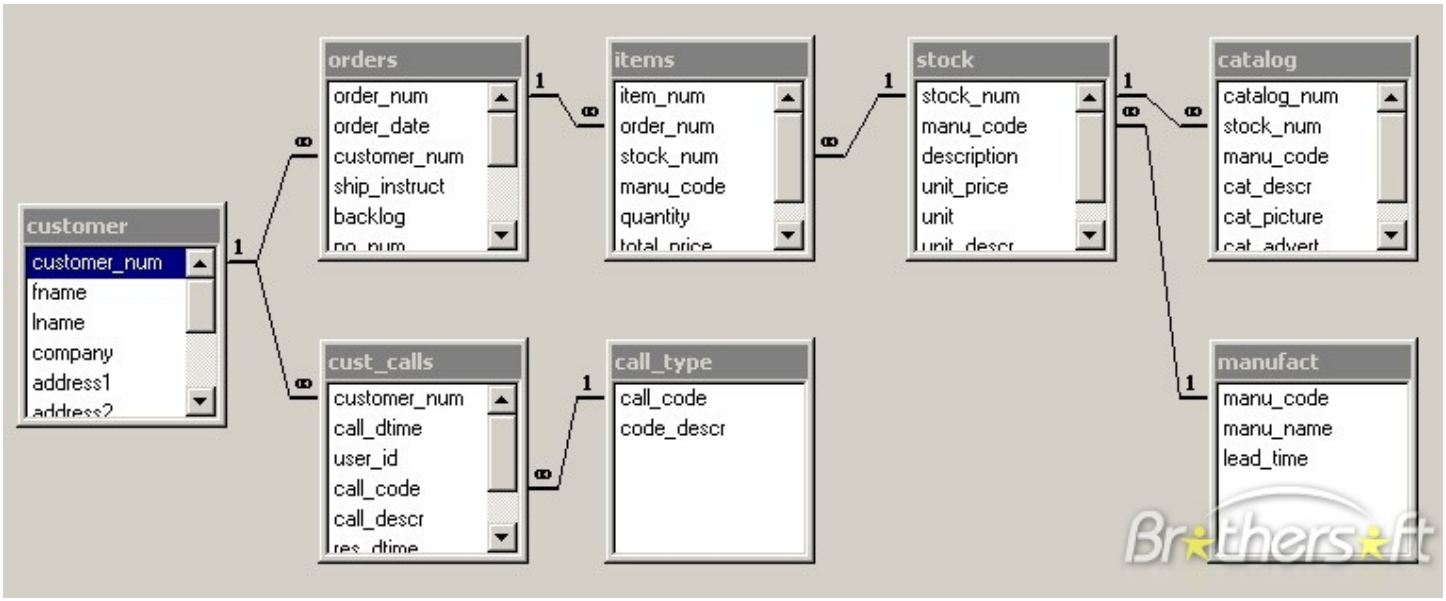
Preliminary Information: The goal of this assignment is to offer you another chance to "put the pieces together" as we have discussed them so far. We all have access to exactly the same tables/databases, so everyone has identical resources. **You will be using ONLY the recipe "table set" for this entire assignment.**

Assignment Structure: There are two parts to this assignment. First, you will diagram the structure of all the tables in our recipes database and then indicate any relationships between them, i.e., Primary and Foreign keys. Second, there are a set of English-language questions that you will need to convert in to SQL statements (consistent with MySQL) that we can run against that common set of tables in the recipe database to see if the correct information is retrieved.

Submission Process: Your assignment needs to be created using a MS Word-compatible word processor. This file needs to be submitted to your Canvas "Homework Assignment 2" assignment in the **Individual Homework ASSIGNMENTS group** no later than 11:59:00.00pm (SHARP) on Friday, April 21, 2017. Be sure "**HW2**" is somewhere in **the filename** and that **YOUR NAME** is at the beginning of the document.

I. Diagram Our Database/"Table Set" [30 points].

We have examined diagrams like the following in our earlier meetings. They show all the fields in each table of the database as well as identify the Primary Key, any Foreign Keys, and the relations between the tables (one-one, one-many, many-many).



Your task is to make a version of this "kind" of diagram **BUT FOR THE 6 tables of our recipes/ingredients/measurements** table set in our database.

Since you are submitting a MS Word document, we will try to keep it simple.

[VERY IMPORTANT NOTE: Only a plain text version (as described starting at the top of Page 2) of all of Part 1 will be eligible for credit. Screenshots, diagrams, and graphics will immediately be scored 0/30. Your Part 1 for Homework Assignment 2 should match the text-only structure in the Homework Assignment 1 Part 1 EXEMPLAR example you can find on the Meeting Guides page right after the link to the Meeting 9 guide. We will look at this together during Meeting 10 on 4/18/17.]

For the overall layout, use <tab> to properly space your tables across the page. It should not be that difficult to create a layout that is visually very similar to what you see above.

Then, for each table, list the fields for that table in the proper order and identify the Primary Key with (PK). If the table also has a Foreign Key, identify that with (FK). Since you really can't easily draw lines in Word, if there is a (FK), indicate immediately after that the table name from which it comes, in [ ]. Example: from "items" table above **order_num (FK) [orders]** would be the proper entry for that table.

Finally, create a list that indicates the relations, if any, between the tables. From our example, one entry would be **orders → items: one to many**. [In the example diagram, the "1" represents the "one" in the relationship and the "∞" represents the "many."

II. SQL Statements/Queries [70 points, 10 x 7 points/each].

You should be able to copy and paste the following from this PDF file into your MS Word document. There are 10 problems, worth 7 points each.

1. Question/Task: Select all ingredients that are either a dairy or wine using a union. (HINT: Wine needs to be extracted from the ingredient name)
    - Your SQL Statement:

2. Question/Task: Display all the recipes that are main dishes.
    - Your SQL Statement:

3. Question/Task: Display all the types of lettuces.
    - Your SQL Statement:

4. Question/Task: Display all types of Meat or Seafood ingredients.
    - Your SQL Statement:

5. Question/Task: Display the recipes in increasing order by the number of ingredients they have/use.
    - Your SQL Statement:

6. Question/Task: What measurements are used in making Fettuccini Alfredo, in units of measure, i.e., "Cup"?
    - Your SQL Statement:

7. Question/Task: Display all recipes that require less than 5 ingredients.
    - Your SQL Statement:

8. Question/Task: Display all recipeID's that have 3 or more ingredients (**without** using aggregate functions)
    - Your SQL Statement:

9. Question/Task: Display all recipeID's that have 3 or more ingredients (using aggregate functions)
    - Your SQL Statement:

[continued on next page]

10. Question/Task: List every ingredient and its corresponding recipeID. Also include ingredients that are **not** in any recipes. (**Hint:** Use left outer join)

    PARTIAL OUTPUT:

    IngredientName RecipeID
    Black Pepper (ground)----2
    Black Pepper (ground)----6
    Black Pepper (ground)----9
    Black Pepper (ground)----11
    Black Pepper (ground)----13
    Black Pepper (ground)----14
    Salt----------2
    Salt----------5
    .
    .
    .
    Halibut----------NULL
    Chicken, Fryer----------NULL
    .
    .
    .
    Romaine Lettuce----------7

- Your SQL Statement:

III. Handing in Assignment 2.

As noted above, all you need to do is copy this one MS Word file, **HW2.docx**, into your "Homework Assignment 2" assignment on Canvas before the deadline.