Name: Please print Last name (Lastname, Firstname)_____

You can only turn in the PE once. You will not be able to re-do any PE if you have errors.

You must **add comments to your TEE file, for every question**. I like the TEE file to be converted to a PDF before it is submitted. I want all the columns of your queries to line up. An Example will be provided in class. As <u>always</u> verbose option <u>is required</u>.

Also, many comments in your script file.

Download the Recipe.sql file from MyCourses. Open MySQL and execute this script to create the **Recipes** tables that you will be working with.

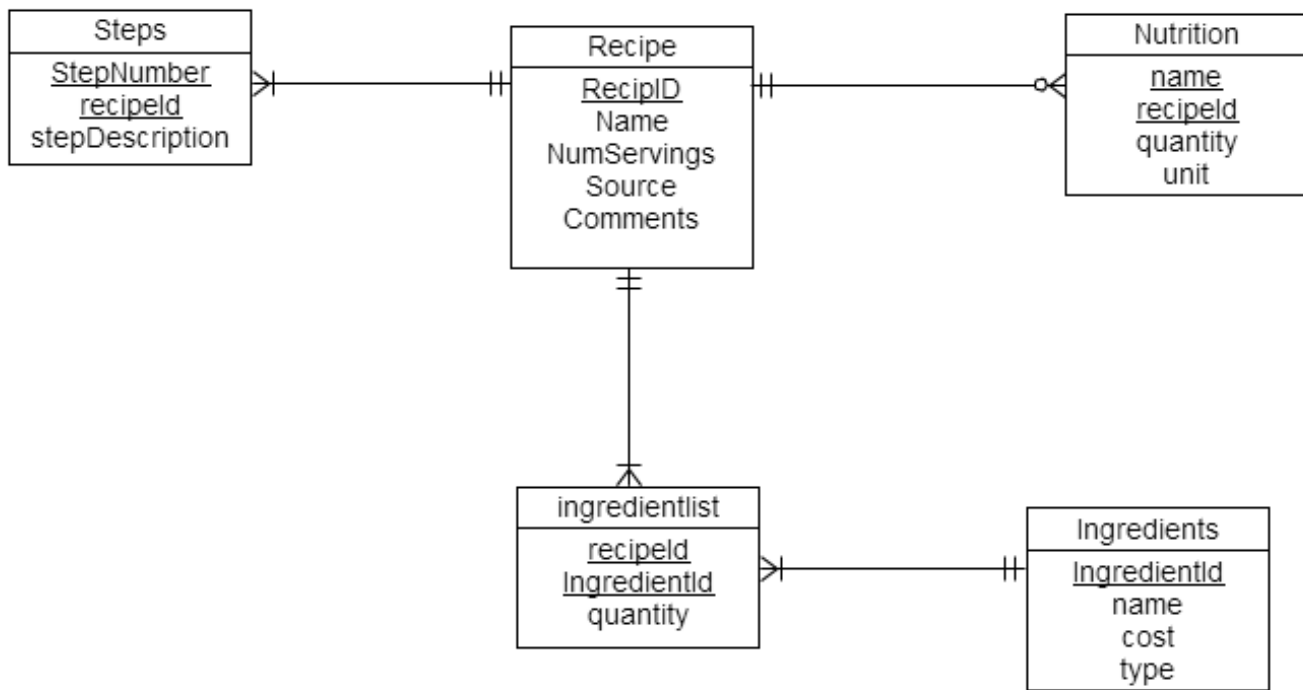## ER Diagrams (*CrowFoot* Notation)
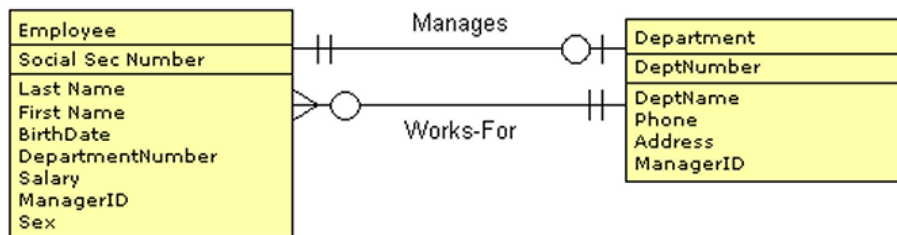
Key *(Left-to-Right)*

Symbol	Participation + Cardinality
—O⊦	Optional - One
⊹⊦	Mandatory - One
—O<	Optional - Many
—⊦<	Mandatory - Many

Steps
StepNumber
recipeId
stepDescription

Recipe
RecipID
Name
NumServings
Source
Comments

Nutrition
name
recipeId
quantity
unit

ingredientlist
recipeId
IngredientId
quantity

Ingredients
IngredientId
name
cost
type

Database Description

The database stores recipes. The main table is named **Recipe** and is keyed on RecipeId. It also has attributes for the name of the recipes, the source of the recipe (e.g., "Mom", "Emerill Live"), how many people it serves, and any general comments (e.g., "nice winter dish").

The **Recipe** table has 3 child tables: **Steps**, **Nutrition**, and **IngredientList**. The **Steps** table lists instructions for preparing the recipe. It has only two attributes: the step number, and the text of the step. Its primary key consists of both step number and its parent's key, RecipeId.

The **Nutrition** table lists nutritional information about the recipe. It also has only three attributes: the name of the nutritional item (e.g., Calories, Carbohydrates), the quantity, and the units for the quantity. The quantity is a numeric field so that we can do arithmetic and logical comparisons with it. Like the **Steps** table, this table has a primary key that consists of both Name and its parent's key, RecipeId.
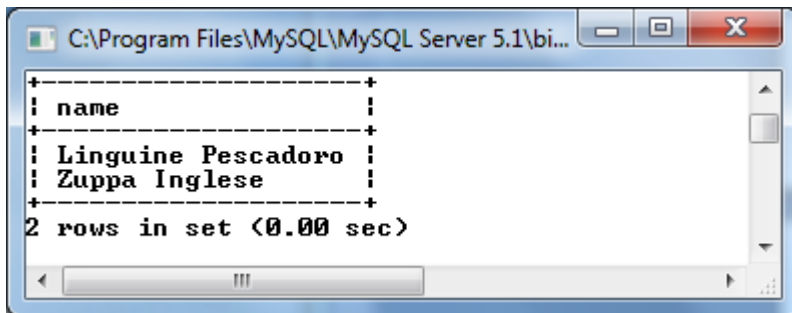
The **IngredientList** table is an associative entity; more about this in a moment. The last table in the database is the **Ingredients** table. It has an IngredientId field for a key, a name of the ingredient, the type of ingredient, and the cost of the ingredient. The type of ingredient is a simple, broad description. For instance, catfish, snapper, and shark would all have a type of "fish". Similarly, sirloin, top round, and beef tenderloin would all have a type of "beef".

Back to the **IngredientList** table. This table implements the many-to-many relationship between **Ingredient** and **Recipe** (**any ingredient can be used in multiple recipes and any recipe can use multiple ingredients**). Since it is an associative entity, its primary key will be a composite of its parents' primary keys. This table also has a field named quantity.

PE#08

Start a script file (yourLastNamePE8soln.sql) and write your SQL statements into your script file for queries below. Also, create a log file (lastname.txt) (use "tee").

1. Mom is concerned that you're not going to be able to cook traditional family meals. Show her that you have lots of her recipes stored in your database.
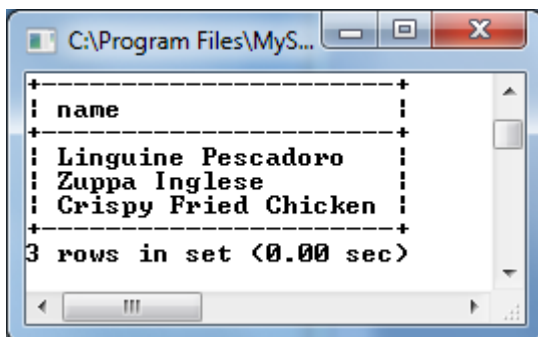
```
C:\Program Files\MySQL\MySQL Server 5.1\bi...

+----------------------+
| name                 |
+----------------------+
| Linguine Pescadoro   |
| Zuppa Inglese        |
+----------------------+
2 rows in set (0.00 sec)
```

2. You've invited friends for dinner, but they're on a diet. Find recipe names that have fewer than 800 calories per serving.
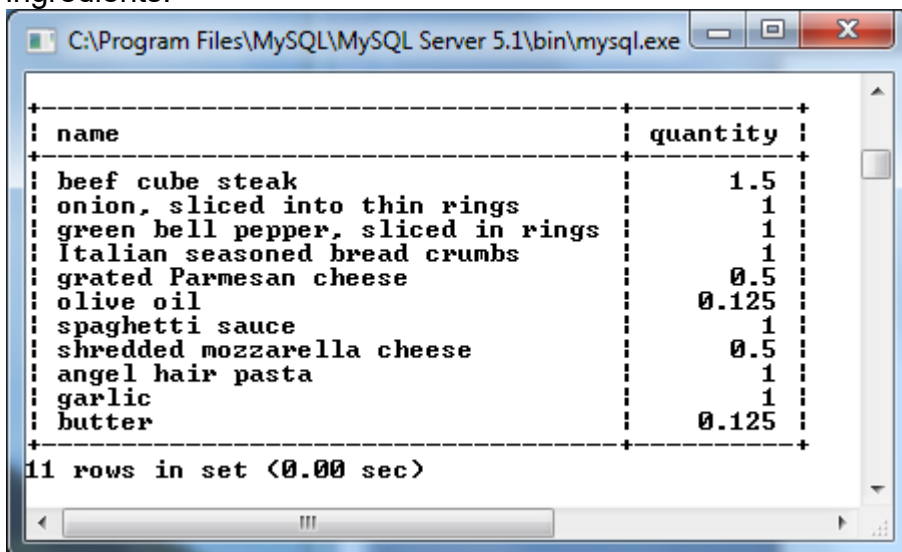
```
C:\Program Files\MyS...

+----------------------+
| name                 |
+----------------------+
| Linguine Pescadoro   |
| Zuppa Inglese        |
| Crispy Fried Chicken |
+----------------------+
3 rows in set (0.00 sec)
```

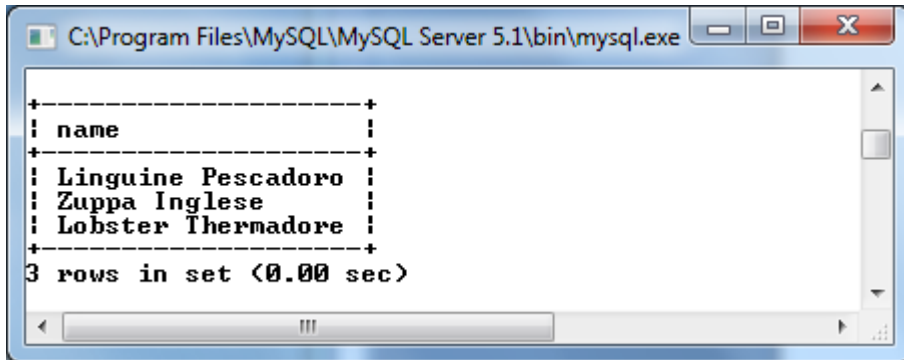3. You're going to serve Beef Parmesan for dinner. Create a shopping list (item and quantity) of ingredients.

```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe

+---------------------------------------+----------+
| name                                  | quantity |
+---------------------------------------+----------+
| beef cube steak                       |      1.5 |
| onion, sliced into thin rings         |        1 |
| green bell pepper, sliced in rings    |        1 |
| Italian seasoned bread crumbs         |        1 |
| grated Parmesan cheese                |      0.5 |
| olive oil                             |    0.125 |
| spaghetti sauce                       |        1 |
| shredded mozzarella cheese            |      0.5 |
| angel hair pasta                      |        1 |
| garlic                                |        1 |
| butter                                |    0.125 |
+---------------------------------------+----------+
11 rows in set (0.00 sec)
```
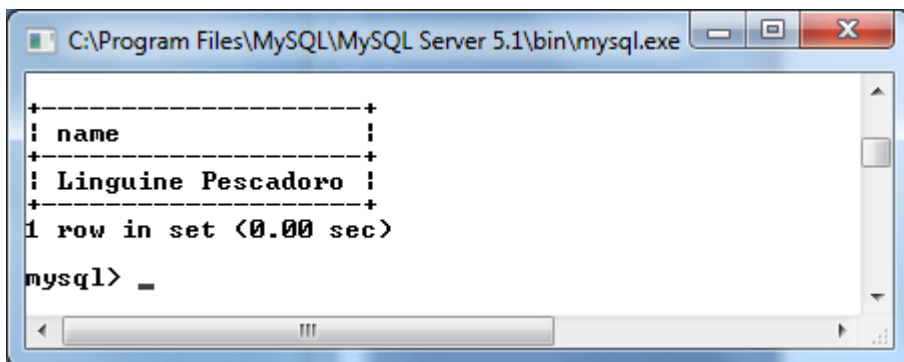
4. You've invited friends for dinner, but they're vegetarian. Find recipes that do not use beef, pork, chicken, or lamb. Hint the outer select is
   SELECT distinct recipe.name from recipe where recipeid NOT IN …

```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe

+--------------------+
| name               |
+--------------------+
| Linguine Pescadoro |
| Zuppa Inglese      |
| Lobster Thermadore |
+--------------------+
3 rows in set (0.00 sec)
```

5. You feel like eating fish, but don't want any heavy sauces like béarnaise. Find the names of your fish recipes that have fewer than 700 calories per serving.

```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe

+--------------------+
| name               |
+--------------------+
| Linguine Pescadoro |
+--------------------+
1 row in set (0.00 sec)

mysql> _
```

Add many of comments in BOTH your script file and your TEE file.
Example of comments in your script file
PE#8 – Question 1 – Goal of the question
SELECT name …

PE#8 – Question 2 – Goal of the question
SELECT ….