Unit 07 Problem Set Submission Form

# Overview

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# Instructions

Put your name and SU email at the top. Answer these questions all from the lab. When asked to include screenshots, please follow the screen shot guidelines from the first lab.

Remember as you complete the problem sets it is not only about getting it right / correct. We will discuss the answers in class so it’s important to articulate anything you would like to contribute to the discussion in your answer:

* If you feel the question is vague, include any assumptions you've made.
* If you feel the answer requires interpretation or justification provide it.
* If you do not know the answer to the question, articulate what you tried and how you are stuck.

This how you receive credit for answering questions which might not be correct.

# Questions

Answer these questions using the problem set submission template. You will need to provide a screen shot for each answer. Please follow the guidelines for submitting a screenshot.

1. Provide a screenshot of your completed E-R Diagram (ERD) from Walkthrough Part 3.   
   Diagram

   Description automatically generated
2. Graphical user interface, application, table, Excel

   Description automatically generatedProvide a screenshot of your E-R data requirements from Walkthrough Part 4.
3. Provide a screenshot of the E-R Diagram (ERD) Walkthrough Part 4.  
   Diagram

   Description automatically generated
4. Draft an ERD from the following requirements. Try not to let your interpretation of the facts get into the way until **after you’ve drawn the diagram**. Once you have a diagram together, feel free to criticize and comment.
   1. Entities: customer, order, products, order line item
   2. Attributes:
      1. Customer: customer email – unique, required, customer name – composite, required, customer address – composite, required.
      2. Order: order number – unique, required, order date – required, order subtotal – required, order tax – required, order total – derived
      3. Products: product inventory number – required, unique, product name – required, product description, product price – required.
      4. Order Line Item: item product inventory number – required, item product price – required, item quantity – required, item extended price – derived.
   3. Relationships:
      1. A customer places 0 or more orders. An order is placed by 1 and only 1 customer.
      2. An order contains 1 or more line items. A line item belongs to 1 and only 1 order.
      3. A line item contains 1 and only 1 product, a product appears on 0 or more line items
   4. Other facts:
      1. Diagram

         Description automatically generatedYou cannot have a line item without a product and an order.
5. In this next example, I give you a list of data requirements, but they are not organized into entities, relationships, and attributes. You may have to make some assumptions to complete E-R Model.
   1. A car is made by only one manufacturer, but a manufacturer makes a lot of cars.
   2. A car has a make, model, vehicle identification number (vin), msrp, and color.
   3. A manufacturer has a name (which is unique and not always the same as the make).
   4. A manufacturer has several plants where the cars are made. A plant is owned by just one manufacturer.
   5. A car is produced at just one single plant. And a plan produces several cars.
   6. A Plant has a name and address.
   7. Only cars of a certain make are produced at certain plants. For example, plant “A” might produce makes “X”, “Y”, and “Z”, while plant “B” might produce makes “W” and “Z” only.

Graphical user interface, application, table, Excel

Description automatically generated  
Use a copy of the **Empty-ER-Data-Requirements** spreadsheet, provided with this lab, to enter your data requirements. Provide a screenshot of your data requirements.

1. Diagram

   Description automatically generatedDraw an ER Diagram based on the data requirements you identified in the previous question.

1. In this last example, read the following paragraphs, identify the data requirements. Once more use a copy of the **Empty-ER-Data-Requirements** spreadsheet, provided with this lab, to enter your data requirements.

The XYZ consulting firm handles project management for its customers.

Customers have a name, address, phone, and one or more contacts (people who work for the company). Customers interact with XYZ through projects.

For any project there should be the name of the project the estimated cost, estimated hours, and an agreed-to billable hourly rate. There should also be an optional description for the project. There should be one customer contact assigned to the project.

Each project is broken down into tasks. Tasks have a name, estimated time to completion, actual time to completion, and assigned employee to the task. One employee is assigned to the project as the project manager. Tasks also contain a list of required skills to complete the tasks. An example of those skills might be database, systems admin, project management, web design, or programming to name a few.

XYZ employees have a name, email, set of skills (like the ones in tasks), and billable hourly rate. The estimated and actual billable amounts are derived from the employee’s hourly rate and the task’s estimated and actual time to completion these values should be stored with the task. Employees can work on more than one task and can be assigned to different tasks at the same time.  
Graphical user interface, table

Description automatically generated

1. Diagram

   Description automatically generatedDraw an ERD based on the data requirements you identified in the previous question

# Reflection

Use this section to reflect on your learning. To achieve the highest grade on the assignment you must be as descriptive and personal as possible with your reflection.

1. What are the key things you learned through the process of completing this assignment?  
   I learned that before you can create or a build a database it’s really important to understand the business context in which the database will function. This is where you need to understand the problem before you can start building.
2. What were the challenges or roadblocks (if any) you encountered on the way to completing it?  
   One challenge was definitely figuring out and developing the relationships between each entity and knowing the order to place them when drawing the ERD, especially with number 7 when a problem isn’t explained too specifically and you have to figure it out to best of your ability. However, I found writing out the data requirements first in the excel sheet does help a bit in terms of organization when so much information is being presented. The relationships go both ways so it was important to keep that in mind as well.
3. Were you prepared for this assignment? What can you do to be better prepared?  
   I think for next time, I can practice the problems in the chapter and watch some more videos about ERDs via Youtube or rewatch the lecture one more time briefly.
4. Now that you have completed the assignment rate your comfort level with this week’s material. This should be an honest assessment: (choose one)  
     
   4 ==> I understand this material and can explain it to others.  
   **3 ==> I understand this material.**  
   2 ==> I somewhat understand the material but sometimes need guidance from others.  
   1 ==> I understand very little of this material and need extra help.