Instructions for Conceptual Data Modeling Design Practice

Problem Statement

This assignment is based upon the iSchool Webstore case. Please see the separate case description document. Please note that our data model will only be covering a subset of the requirements identified in the case. See the description below to identify that subset.

Assignment

Create a conceptual data model for the iSchool Webstore case expressed as an Entity-Relationship diagram (ERD). Concentrate on including all of the entities, attributes, and relationships necessary to support the functions described.

Note: Please limit the scope of your data model to the following subset of requirements for the iSchool Webstore case:

- Orders
- Items
- Customers
- Payment
- Picking Event
- Shipping Event

Note: Please disregard the following requirements from the iSchool Webstore case:

- Messaging between customer and webstore staff
- Logging In
- In-Person order pickup
- Automated interface to USPS
- Automated interface to suppliers
- Tracking of which employees performed which actions (picking, shipping, etc.)

To create your conceptual data model, I recommend the following process:

1. Identify the entity types that are needed in the data model for the iSchool Webstore System domain. Use the Visio 2013 diagrammer to create a block for each entity type. If you know the attributes for the entity type, you can enter them at this time. Otherwise, you can defer this work until Step 3 in the process.

2. Identify the relationships that exist between entity types. Use the diagrammer to draw relationship lines between entity type blocks. Give each relationship a descriptive name. Finally, determine the cardinalities of the relationship and

record the cardinalities at each end of the relationship line using crow's foot notation.

3. For each entity type, record the various attributes that will hold the information about that entity in the data model. Using the diagrammer, record each attribute on its own line within the entity type block. Finally, note the attributes that will be used to make up an identifier for each entity type. Use the diagrammer's PK notation to mark each attribute that makes up the identifier. PK stands for "primary key". PK is actually a relational database term rather than a conceptual data model term. But it is the best diagrammer feature that you can choose to indicate components of the identifier for each entity.

4. Look for any relationships that carry data. An example of this would be the quantity of items that must be carried in each Order-Item relationship. Wherever a data must be carried in a relationship, insert an associative entity to carry the data. This will result in two relationships with an intervening associative entity.

Tools
I prefer that you use MS Visio 2016. I have recorded a demo available that shows how to create a Conceptual ERD using this tool. If Visio is not available, the next best choice is probably the ER diagrammer feature of MySQL Workbench. The MySQL Workbench diagrammer does not really support conceptual data modeling. So, it creates foreign keys to implement each relationship in the model. Implementing foreign keys is really part of the next modeling step – logical data modeling. So, if you are forced to use the MySQL Workbench diagrammer, you will be one step ahead of this assignment.

Length
One ERD should be submitted. It may occupy several pages if necessary. Please remember to include data structures to support every feature that is part of the problem statement.

Format
Please submit a **single PDF document**. The Visio 2016 diagrammer can save diagrams in PDF format using the **File > Save As** menu option.

File Naming Conventions
The name of the file that you submit should include both your name and the name of the assignment. It should follow the form:

trainor_kevin_conceptual_data_modeling.pdf

Due By
Please submit this assignment by the date and time shown in the Weekly Schedule.