CSE 3241 Project Checkpoint 01 – Entities and Relationships
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1. In a NEATLY TYPED document, provide the following:
Based on the requirements given in the project overview, list the entities to be modeled
in this database. For each entity, provide a list of associated attributes

> Shipper - Name, Location
> Shipment - ID, Shipper, Departure Location, Destination, Receiver, Contents
> Warehouse - ID, Location
> Employee - ID, Schedule, Workplace, Wage, Title, Start date
> Timesheet - Time in, Time out, Paycheck
> Supplier - Name, Location
> Transaction - ID, Datetime, Amount, Tax, Payer, Payee, Location, Type
> (purchase, expense, return, etc.)
> Order- ID, Datetime, Contents, Shipment ID
> Customer - ID, Name, Contact, Location
> Store - ID, Location
> Product - ID, Price, Location, Department, Category, Description
> Book - ISBN, Title, Authors
> Inventory - Product ID, Quantity
> Author - Name
> Publisher - Name, Location, Contact
> Notes:
> Location - Country, State, City, Address, Zip
> Contact - Phone, Email, P.O. Box, Location

2. Based on the requirements given in the project overview, what are the various
relationships between entities? (For example, "CUSTOMER entities purchase BOOK
entities").

> SHIPPER fulfills SHIPMENT
> SHIPPER is paid by TRANSACTION
> SHIPMENT is received by WAREHOUSE
> SHIPMENT is received by CUSTOMER
> SHIPMENT is received by STORE
> WAREHOUSE places ORDER

WAREHOUSE is supplied by SUPPLIER
EMPLOYEE works at WAREHOUSE
EMPLOYEE works at STORE
EMPLOYEE manages EMPLOYEE
EMPLOYEE is paid by TRANSACTION
TIMESHEET is created by EMPLOYEE
SUPPLIER is paid by TRANSACTION
TRANSACTION is spawned by CUSTOMER
TRANSACTION is transacted by STORE
TRANSACTION is processed by PAYMENT PROCESSOR
STORE has PRODUCTS
INVENTORY contains PRODUCTS
BOOKS are PRODUCTS
BOOKS are written by AUTHORS
BOOKS are published by PUBLISHERS

3. Propose at least two additional entities that it would be useful for this database to model beyond the scope of the project requirements. Provide a list of possible attributes for the additional entities and possible relationships they may have with each other and the rest of the entities in the database. Give a brief, one sentence rationale for why adding these entities would be interesting/useful to the stakeholders for this database project.

> Audiobook - id, ISBN, Title, Author id(s), Narrator id, Read by Author, Publisher id, Year, Price, Category id, Running time, hard copy availability - This would allow the customer to easily find audiobooks to listen to during car trips or other times that a physical book might be inconvenient. Having this as a separate entity allows for different attributes from the physical books and will make searching for audiobooks easier.

> Rating - id, score, rated item id, customer id - This will allow customers to help customers find books they might enjoy by looking at the ratings of other users and could also help the store determine what types of books their customer base enjoys reading in a more meaningful way than sales alone.

4. Give at least four examples of some informal queries/reports that it might be useful for this database might be used to generate. Include one example for each of the additional entities you proposed in question 3 above.

        Query for all audio books written by author.
        Query for all products with a 5 star rating.
        Query for all books by a specific author.
        Query for all purchases by a particular customer

5. Suppose we want to add a new publisher to the database. How would we do that given the entities and relationships you've outlined above? Given your above description, is it possible to add a new publisher to your database without knowing the title of any books they have published? If not, revise your model to allow for publishers to be added as separate entities.

        Insert the data from the publishing company: Name, Location, and Contact info. Publishers can be added without knowing any of the books they have published; the only necessary information is that which identifies the publisher.

6. Determine at least three other informal update operations and describe what entities would need to have attributes altered and how they would need to be changed given your above descriptions. Include one example for each of the additional entities you proposed in question 3 above.

        Adding an audiobook would require inputting the audiobook information (authors, title, run time, and ISBN) in the AudioBook table, inputting the product information (ID, Price, Location, Department, Category, Description) in the Product table, and possibly adding new authors and a new publisher to the Author and Publisher table respectively.

        To add a rating data entry we would add the user id will be attached from the user who submitted the rating, the product ID for the product being reviewed, and the rating itself.

        In order to add an author all that would be needed is to input their name to the Author table.

7. See pdf.