VIA University College

NSQ1 S22 Course Assignment 1

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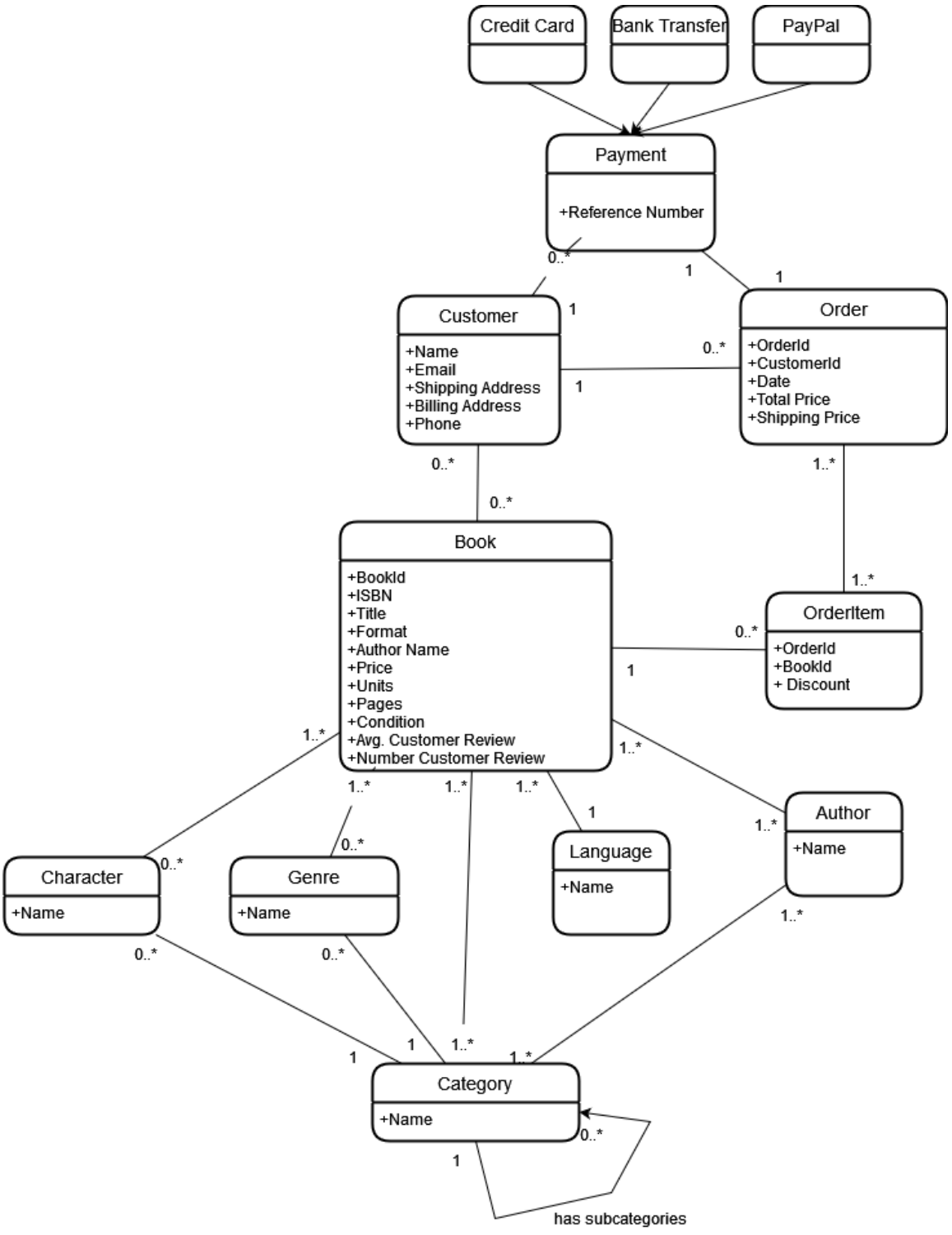
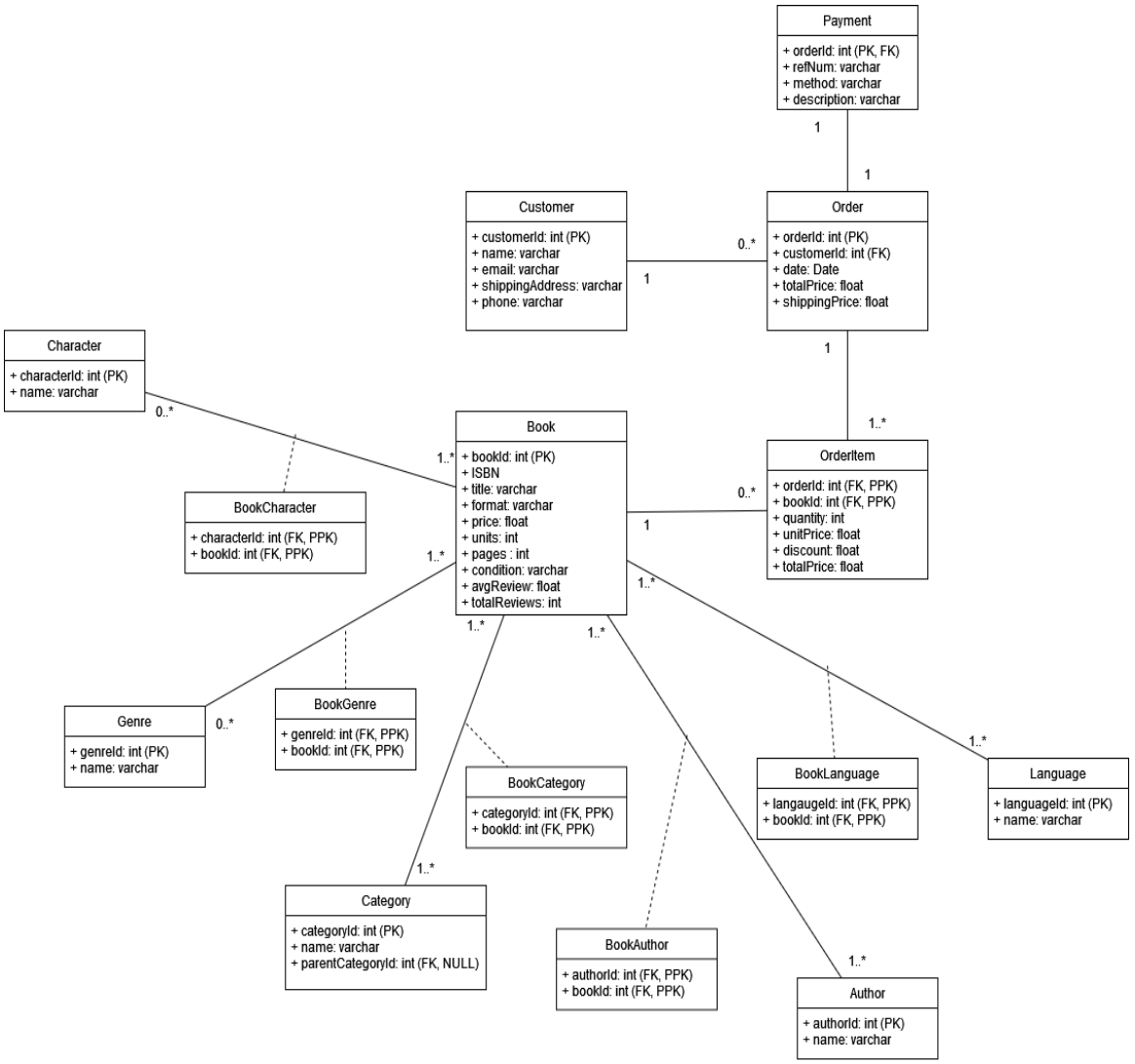
Question 1



Question 2



Question 3

See CreateTables.sql for creating the tables.

Question 4

See PopulateTables.sql for populating the tables.
See Ex4Que.sql for querying data script.
See Ex4Mod.sql for modifying data script.

Question 5

One of the most differential decisions taken in our modeling were the associative tables for Genre, Character, Author, Language and Category, and their relation with Book.
This way, we were able to make sure that a Book can have multiple categories, languages, authors, etc.
A consequence of this implementation is that there is no easy way that ensures that a Book has at least one of these tables, that being especially relevant for the author and language tables.

In the ER model, to represent the subcategories a category may have, we used a recursive relationship on the Category table.
In the logical model, in the Category table, we added a parentCategory attribute, a ForeignKey of the ID of its parent Category. If this category is not a subcategory of any other category, this attribute is null.
Then, we make use of the associative table for category to indicate the lowest category that the book directly pertains to.

For the sake of modularity, we separated the Payment of the Order into a different table. One consequence would be that for checking the Order and its payment, two reading transactions must be done, on the other hand, if the Payment and the Order were on the same table there must only be one reading transaction.

By adding the customerId attribute as a foreing key in the Order table, we made sure that an order has at least one customer, and only one.

Fortunately, when making the modeling for the ER model and the logical model, we easily agreed with the decisions we were suggesting and shared the same view on how to structure our model. As we all have worked with SQL before, it was easier to talk about the difference in opinions on some parts of the model.
The most difficult part was perhaps populating the database according to the necessities of the queries and modifying data questions. As we had not checked the questions before, we had to make some changes to both the population and the models, such as different authors for one book, or ISBN and pages attributes in the Book table.