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Intership program exercises.

Assumptions and notes for exercise 1:

- For ClientType I decided to use integer values instead of varchar because it seems that there are specific types of clients defined so I would use a number for each of them to make it easier to manipulate in code.
- For ClientSize applies the same logic from the last point. I chose a smaller value because I find low possibility for having more than ten sizes for clients.
- IsCreditWorthy is a Boolean value (BIT for SQL) because it only accepts two values.
- For IsDealer I would ask my team leader since there is not enough information provided to complete the model. The name makes it likely to be a boolean value (use of “Is” before the variable), but I prefer to be completely sure.
- I used specific lengths for string values based on the length of the data provided.
- Assumed CostPrice, SpareParts, LaborCost and Mileague were whole numbers all the time.
- For VehicleAgeInYears I decided to use TinyInt because it reserves less space in memory and there is a very low chance of having a car of more than 255 years, which is the max value accepted for TinyInt variables.
- I counted the length of InvoiceNumber values using a function in excel and found all of them are 36 characters long.
- Assumed InvoiceDate corresponds to a time value following the pattern “HH:mm.s”.
- In DateDimension data I found a column with a “t” and assumed it was a human mistake since that row does not match with the rest of the given data.
- I treated InvoiceDataKey and DateKey as dates and found that there are repeated values for InvoiceDateKey what makes me think it is a foreign key.
- MonthName and MonthNameAbbr are duplicate values. I did not add them to the model. Actually, I did not find necessary to store all the columns since most of them can be constructed using the other columns.

Time needed: About 2 hours. Further analysis could be appropriate to review normalization.

Assumptions and notes for exercise 2:

- There is no setter for id values because they are identity, which are automatically generated in the database and should not be modified.
- I decided to create an interface because I do not know the business logic therefore, I do not know how methods will be implemented. Interface gives the chance for every class to use the method the way it needs to.
- I created a new class for Vehicle that has a relation with the stock. To include a new kind of transportation vehicle I assumed it meant to create a new registry in the data base. For this the method “Create” from the CRUD methods would be enough. Also, I adapted the data base model to receive new kind of vehicles.

Time needed: About 4 hours.

Assumptions and notes for exercise 3:

- By ordering data in descending order, it puts the higher values at the top of the query.
- For the second exercise I created a stored procedure that receives quarter and year as parameters. It gives the option of executing any desired query for any period.

Time needed: About 2 hours. For the second query I was confused because I did not know what was the expected output.