ERD Notation & Core Model

3. I don't understand why Aftermarket is associated with Sale. There is no justification of it. The assignment description states that "Each aftermarket option is described by a name and description. The cost of these aftermarket options varies based on the vehicle being purchased—for instance, the price of tinted windows may differ between a high-end luxury sedan and an economy hatchback. Note that these aftermarket options are not available for pre-owned cars". Therefore, this should be associated with the NewCar entity set as you already modeled NewCar in your ERD.

We think new car entity does not necessarily mean it has been sold which should not have aftermarket car options. However, for CarSale, if you are a new car, then you must choose whether to have aftermarket car options, which make more sense to us. Since this choice only happens after a CarSale was created, right?

4. The date of application and loan amount attributes are missing from the "BankFinancing" entity set.

The attributes loan\_date and loan\_amount were not explicitly included in the BankFinancing entity set because we assumed that BankFinancing is directly related to Payment, and the loan details can be derived from that relationship — i.e., Payment.date = BankFinancing.loan\_date and Payment.amount = BankFinancing.loan\_amount. Furthermore, we believe we have already been penalized for this design choice in a previous comment (Comment 1), so deducting marks again here would result in a double penalty for the same issue. As this is a design decision that causes a "chain reaction" across related entities, we hope it can be considered as a single modeling decision, not multiple independent errors.

ERD Constraints

1. Each CarSale can have one or more payments (at least one). There should be a thick line between "Sale" and "Involve (Payment)".

The question does not explicitly state that a CarSale must have at least one Payment. Our interpretation is that a CarSale is not considered complete if its balance is not zero, which we believe is a reasonable and practical assumption. Therefore, it should be acceptable to model the relationship without enforcing total participation from CarSale to Payment.

In addition, we believe that customers may provide their details to reserve or book a car, which does not necessarily mean a payment has been made yet. Based on this reasoning, we feel it is justifiable not to assume that every CarSale must have an associated Payment at the point of creation. Therefore, we do not think it would be fair to be penalized for this interpretation.