Exercise 3

Relation:
CAR_SALE(carNumber, dateSold, salespersonId, comimission, discount)

Primary Keys:
carNumber, salespersonId

Additional dependencies:
- dateSold → discount
- salespersonId → comimission

Questions:

1. **Based on the given primary key, is this relation in 1NF, 2NF or 3NF?**

   Answer:
   Based on the given Primary keys, it can be seen that it is 2NF, that is, second normalized form.

2. **Why or why not?**

   Answer:
   REASON → It satisfies both 1NF and 2NF conditions which are as follows:

   1NF (First Normal Form) Rules:
   - Each table cell should contain a single value.
   - Each record needs to be unique.

2NF (Second Normal Form) Rules
- Rule 1- Be in 1NF
- Rule 2- Single Column Primary Key that does not functionally dependant on any subset of candidate key relation.

However it does not satisfy 3NF condition that is:
3NF (Third Normal Form) Rules:
- Rule 1- Be in 2NF
- Rule 2- Has no transitive functional dependencies

Since it has transitive functional dependency i.e. discount depends on dateSold

3. **How would you successively normalise it completely?**

Answer:
By creating another primary key for yet another table, and naming it 'dicountId'. It will store the unique id of discounts for a discount on a particular date.