Database Design Assignment 3

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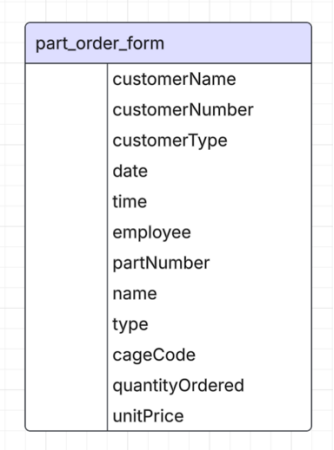
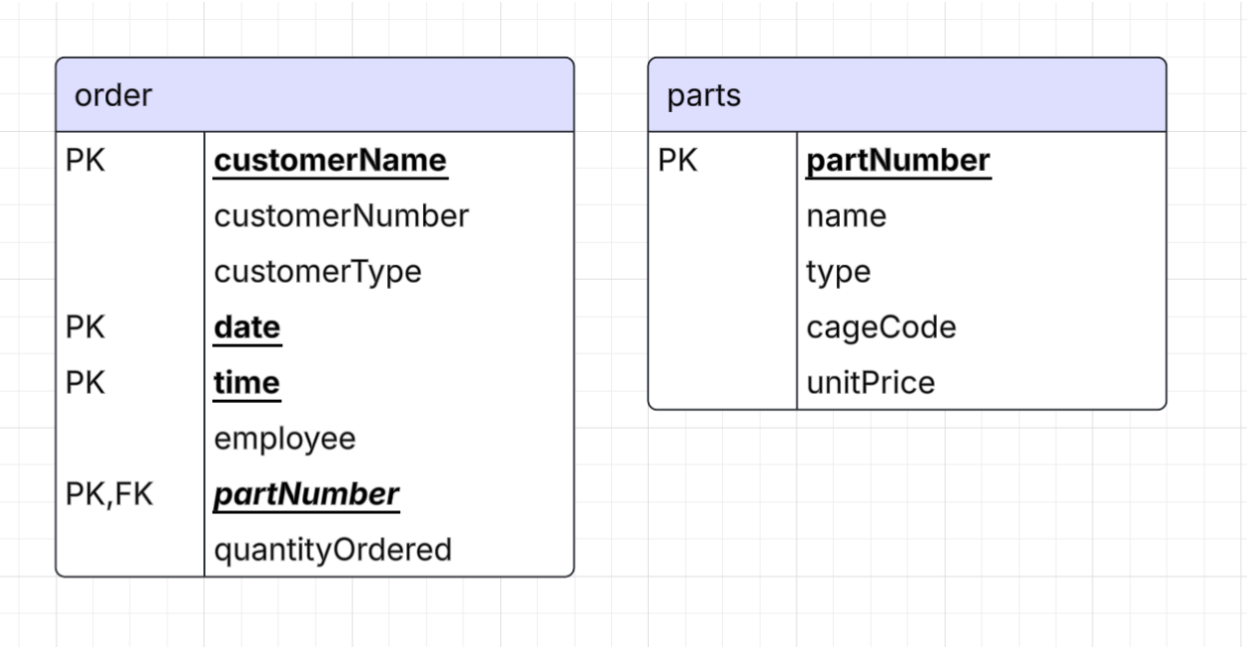
Question 1



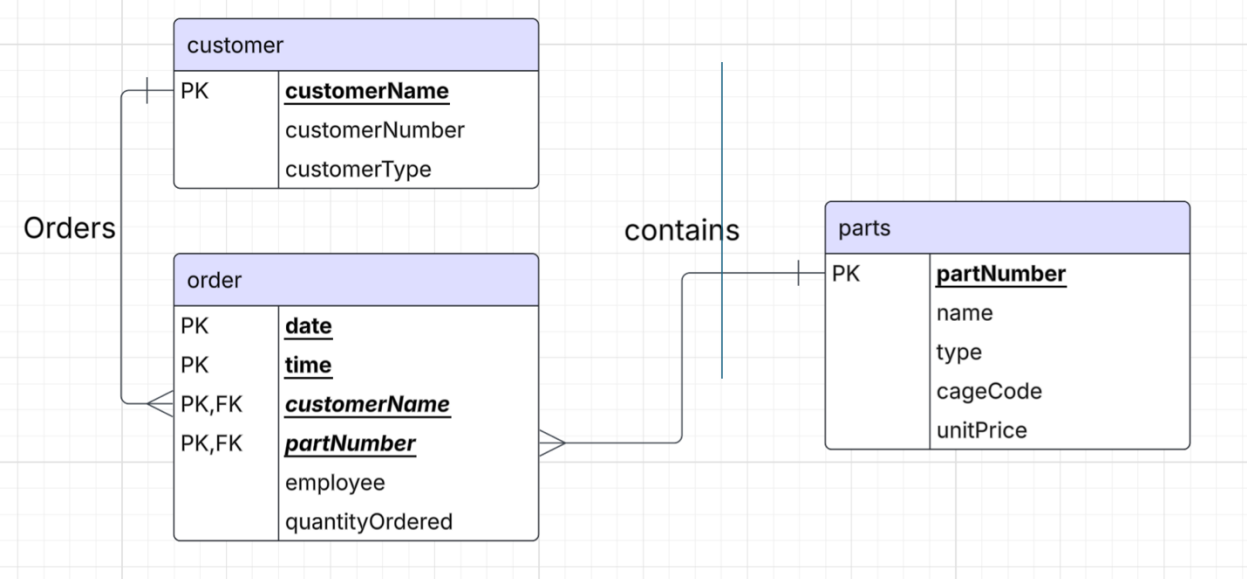
I assume that customer type will not limit the selection of parts that can be ordered from the shop. I also assume partNumbers uniquely identify each part, and the same partNumber cannot be used to describe two different aprts.

The table is not in a normal form, given that there are repeating groups in the parts ordered. To get 1NF, I break the parts ordered and their details into a separate database.



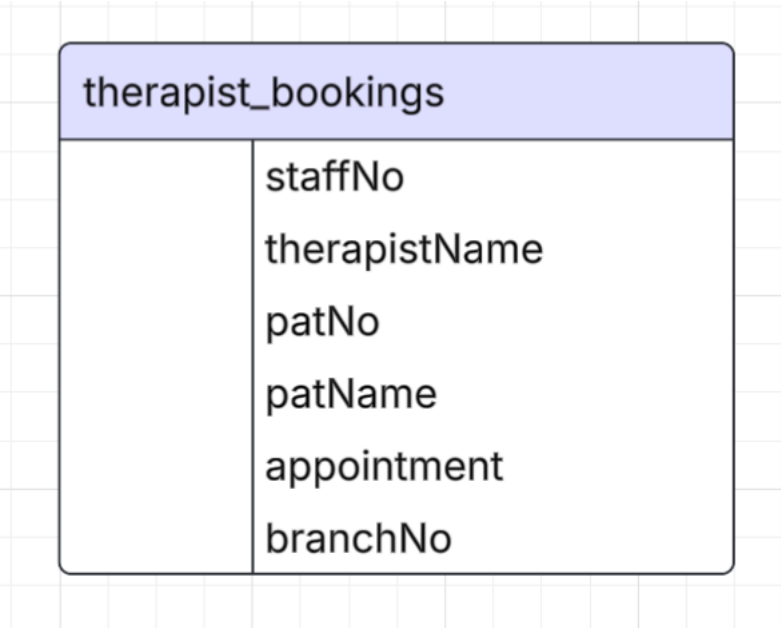
The table is in 1NF. I assume customerName, date, time, partNumber forms a composite Primary Key for the “order” database as a customer cannot create two orders for the same part at the same point in time (if they wanted multiples of a part, this would affect quantityOrder)

customerNumber & customerType are fully dependent on customerName. To get to 2NF, I would move these attributes to another table.



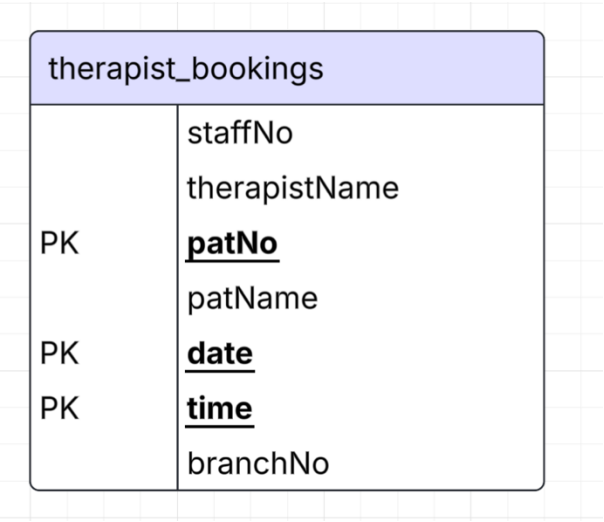
The table is now in 2NF. The table is also in 3NF as there are no partial dependencies within the tables.

Question 2



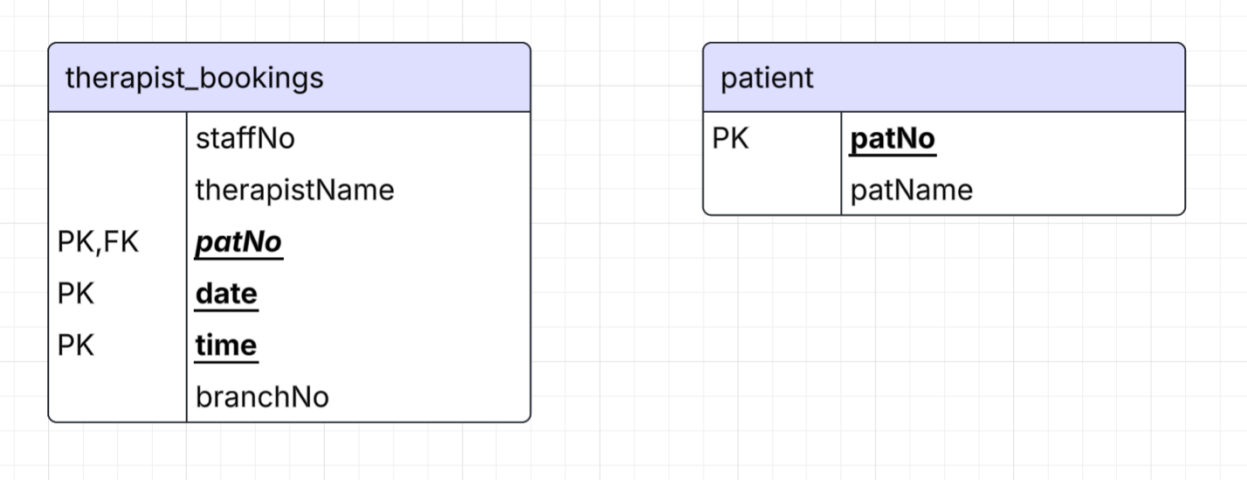
I assume that patients cannot have multiple concurring appointments with different therapists at the same time and date. I also assume staffNo is unique to each therapist, and I also assume patNO is unique to each patient.

The table is not in a normal form, as bookings are a repeating group. To achieve 1NF, I will create two separate attributes in the same table for date and time.

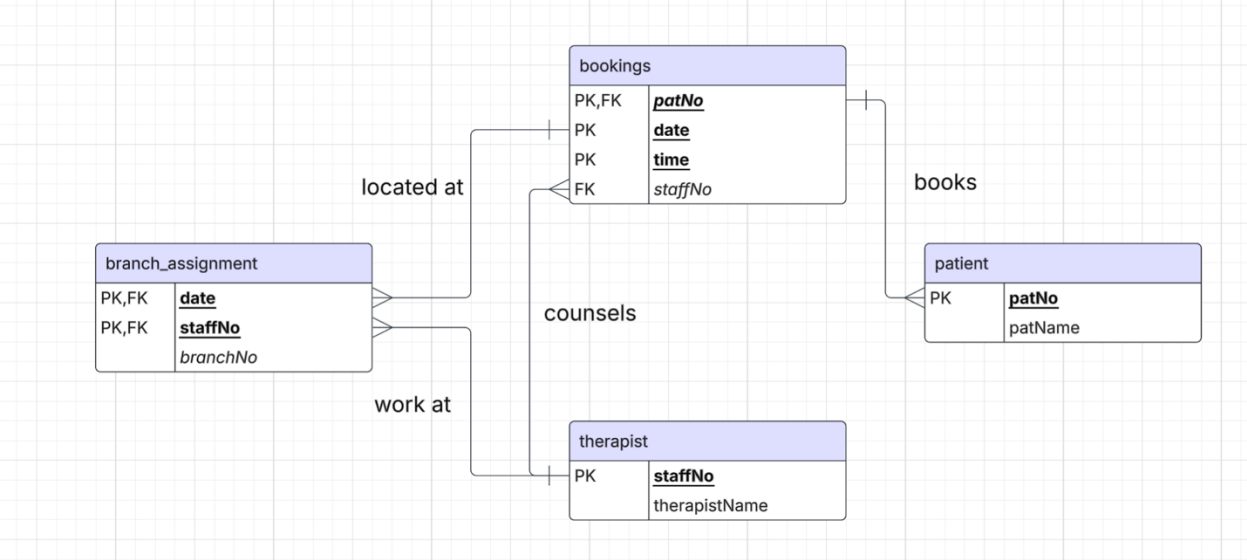


The table is now in 1NF, with patNo, date, time as a composite PK. This follows with my assumption that the same patient cannot have multiple concurrent bookings on the same day.

patName is purely dependent on PatNo. To get to 2NF, I will move this attribute to another table.

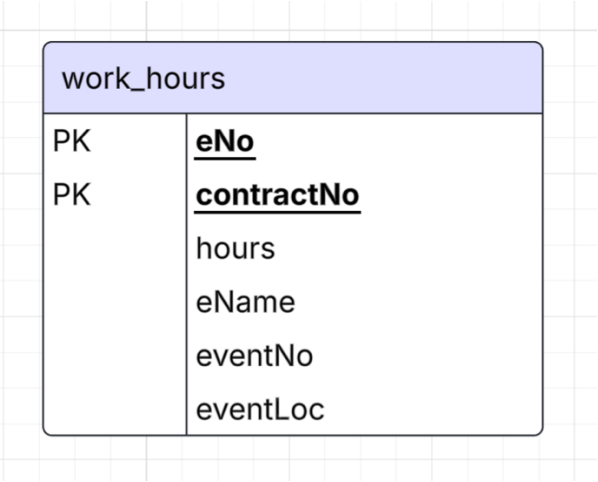


The table is now in 2NF. To get to 3NF, I will remove partial dependencies. therapistName is purely dependent upon staffNo. Additionally, branchNo is dependent on date and StaffNo, as therapists can only be at one location each day. I would split these attributes into different tables.



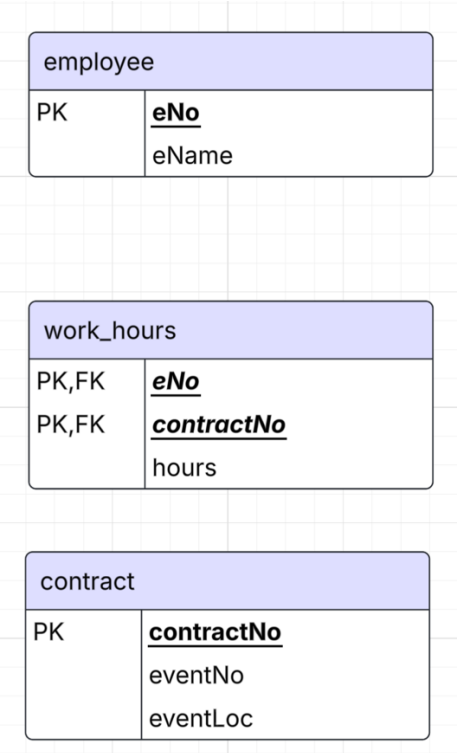
The table is now in 3NF.

Question 3

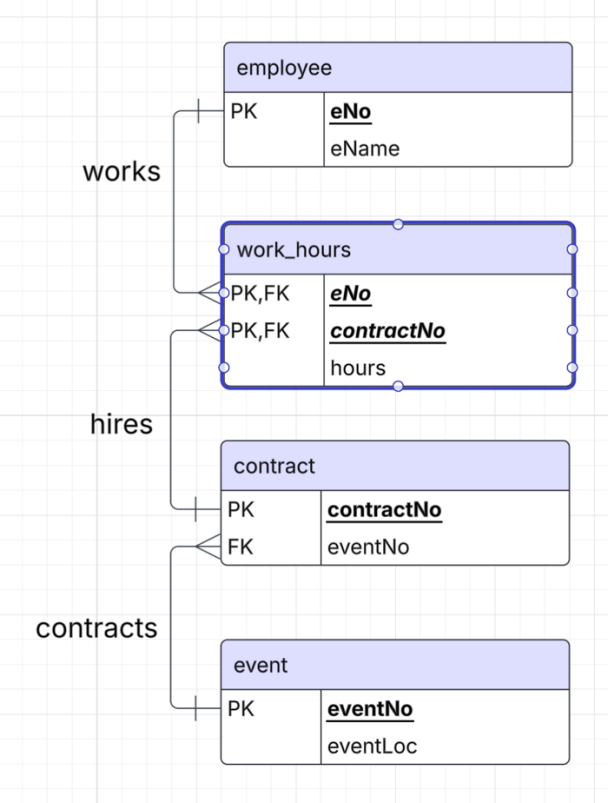


I assume that events are only held at one location. If an event has multiple locations, each location is identified as a separate event.

The database is already in 1NF, as an employee would not have duplicate contracts. Thus, eNo and contractNo form the composite PK. However, eName is purely dependent on eNo. eventNo and eventLoc are purely dependent on contractNo. I would separate these into different tables.



The database is in 2NF. However, eventLoc is dependent on eventNo and is a transitive dependency. To move to 3NF, we move this attribute to another table.



The table is now in 3NF.