

Question 1

- a) State any assumptions you make about the data and attributes shown.
- A single customer places an order
 - Parts are only ever stores in a single cage
- b) Describe and illustrate the process of normalizing the attributes shown.
- First, I set about putting this data into tables so that every attribute appeared in a table rather than in the ticket format as given.

<u>order</u>
customerName
customerNumber
customerType
date
time
employee
partNumber
partName
partType
cageCode
quantityOrdered
unitPrice

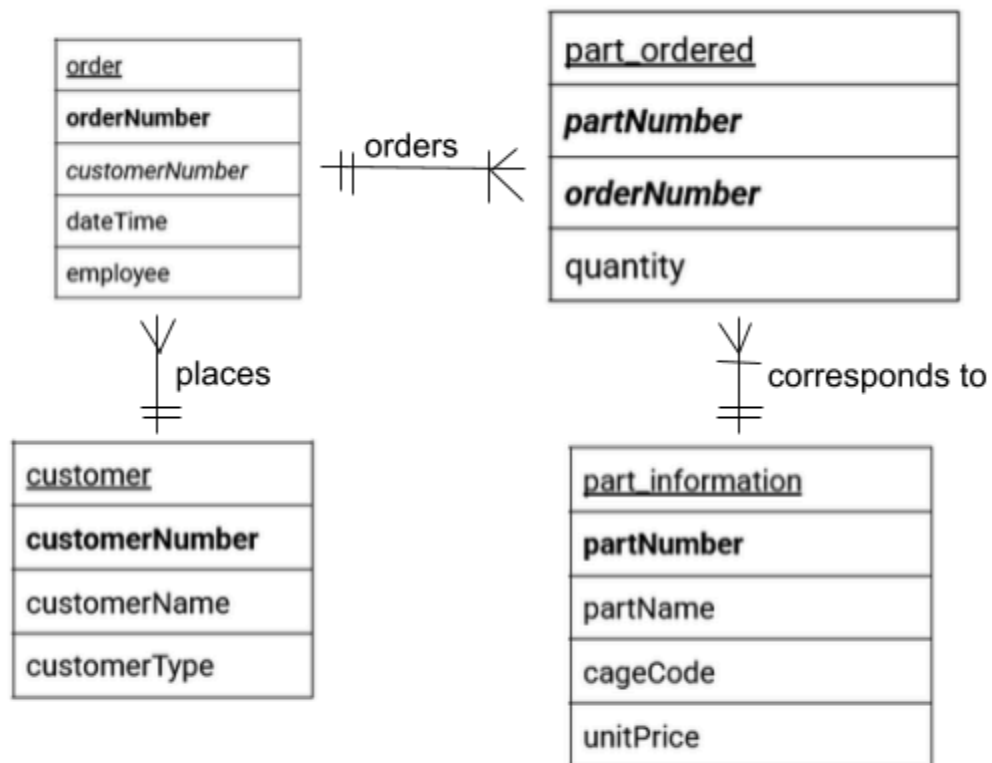
- Next, I determined whether this table was in 1NF. It must have a primary key (in this case, a combination of customer, date, and time), and no composite attributes. Oops! It has composite attributes (part information). I'm also adding an order number to serve as a primary key. Let's fix using a bridging table. Now it's in 1NF.

<u>order</u>
orderNumber
customerName
customerNumber
customerType
date
time
employee

<u>part_ordered</u>
partNumber
orderNumber
quantity

<u>part_information</u>
partNumber
partName
cageCode
unitPrice

- Now to determine whether it's in 2NF, which means attributes cannot be partially dependent on a primary key. We are all good here.
- Now to determine whether it's in 3NF, which means no transitive dependencies. There are transitive dependencies in the order table. Let's fix (I'm also make date & time a single attribute, which is how a computer sees them):

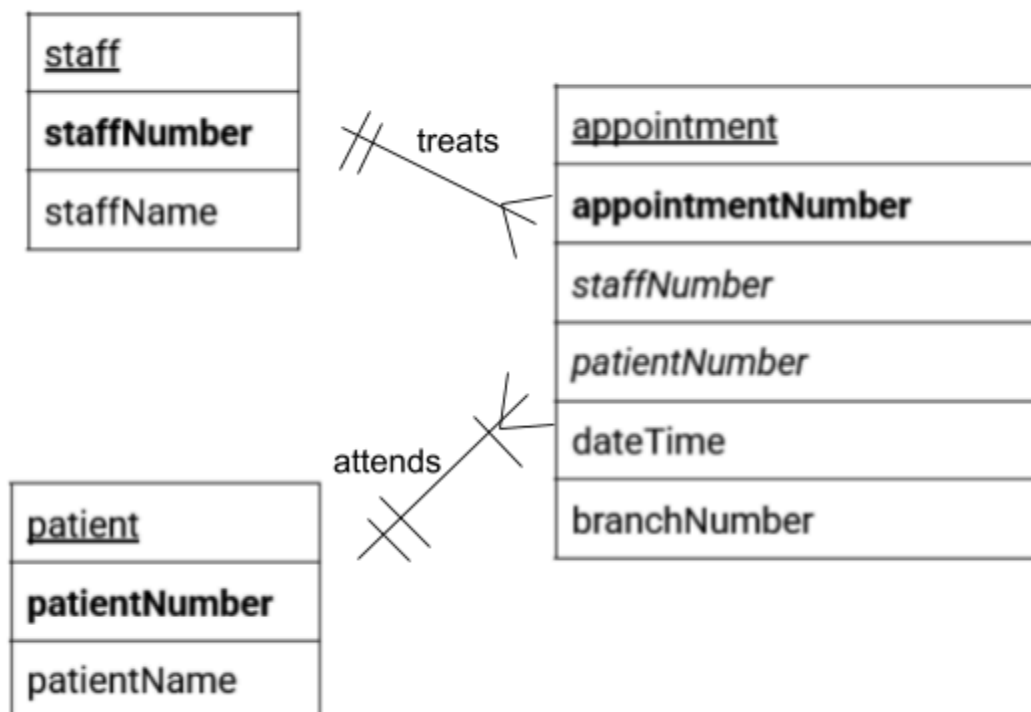


- All done!

Question #2

- a) State any assumptions you make about the data and the attributes shown.
- Each appointment can only be between a single therapist and a single patient
- b) Describe and illustrate the process of normalizing the table to 3NF
- For this data, I will not make as granular a step-by-step breakdown because I used a different thought process
 - First, I identified all of the different attributes in the original table that seemed like they ought to be their own entity and made them each their own table straight away. In the same step, I normalized to 2NF by ensuring that there were no compound primary keys and to 3NF by ensuring that there were no transitive dependencies. This gave me the following 3NF design:

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- Bam, done!

Question #3

- a) State any assumptions you make about the data and the attributes shown in this table
- Each event is at only one location
- b) Describe and illustrate the process of normalizing the table to 3NF
- Same as last time, I just directly made smaller tables because this is more in line with my own thought process.

