Iven Zuo - Normalization

1 .Parts Order Form for a Local Supply Company

Assumption

- Many Employees help many customers
- The cage code is the place in the store that holds the partType
- A customer can place an order with multiple parts

An order table is created using all of the information from the order form:

order
customerName **customerNumber** customerType **date** **time** employeeName **partNumber** partType partName cageCode quantityOrdered unitPrice

This table is in 1NF because there are no repeating groups. However, it is not in 2NF because it has partial dependencies. The primary keys for the order_quantity table are customerNumber, date, time, and partNumber. employeeName depends on customerNumber, date, and time. partName, partType, cageCode, and unitPrice depend only on partNumber, and customerName and customerType depend only on customerNumber. The 2NF tables are:

order_quantity
customerNumber **date** **time** **partNumber** quantityOrdered

order_employee
customerNumber **date** **time** employeeName

part
partNumber partName partType cageCode unitPrice

customer
customerNumber customerName customerType

To get to 3NF, we need to move cageCode to a separate table because it has a transitive dependency to partType. The 3NF tables with the italicized FKs are:

order_quantity
customerNumber **date** **time** ***partNumber*** quantityOrdered

order_employee
customerNumber **date** **time** employeeName

part
partNumber partName *partType* unitPrice

part_location
partType cageCode

customer
customerNumber customerName customerType

2. Panacea Mental Health Corporation
Assumptions:

- A patient is given an appointment at a specific time and date at a particular branch with one therapist.
- Patients may have multiple appointments in any given day and with multiple different therapists.
- The data has appointment date time, which is a column for date and time

The data is in 1NF as there is no repeating group. The PKs are staffNo, appointmentDate, and appointmentTime.

The 1NF table is:

appointment
staffNo therapistName patNo patName **appointmentDate** **appointmentTime** branchNo

These tables are not in 2NF as it has partial dependencies. The therapistName is dependent on staffNo. branchNo are dependent on staffNo and appointmentDate.
The 2NF tables are:

appointment
staffNo patNo patName **appointmentDate** **appointmentTime**

staff
staffNo therapistName

staff_branch
staffNo **appointmentDate** branchNo

To get to 3NF, we have to remove the transitive dependency in the appointment table. patName is dependent on patNo. The 3NF tables with the italicized FKs are:

appointment
staffNo *patNo* ***appointmentDate*** **appointmentTime**

staff
staffNo therapistName

staff_branch
staffNo **appointmentDate** branchNo

patient
patNo patName

3. Maid Better temp agency supplies
The 1NF table is:

employee_hour
eNo **contractNo** hour eName eventNo eventLoc

The data is in 1NF because there is no repeating groups. The PKs are contractNo and eNo. To convert it into 2NF, we need to get rid of the partial dependencies. eName is dependent on eNo. eventNo and eventLoc are dependent on contractNo. Therefore, these have to be moved to other tables. The 2NF of the tables are:

employee_hour
eNo **contractNo** hour

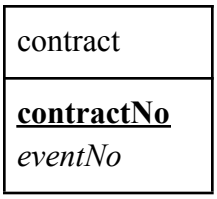
employee
eNo eName

contract
contractNo eventNo eventLoc

There is a transitive dependency in contract table with eventNo. The 3NF tables with the italicized FKs are:

employee_hour
eNo ***contractNo*** hour

employee
eNo eName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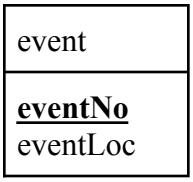
event
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eventLoc