

Normalization for Parts Order Form for a local Supply company

Assumptions

- 1. Each customer has an assigned with a unique customer number (customerNumber).
- 2. Employees help any and all different customers; there is no special relationship between specific employees and customers.
- 3. All employees' name (employeeName) can be used to uniquely identify between each other.
- 4. Each order can be identified through an order ID (orderId).
- 5. A cage code (cageCode) is the identifier of the cages that the inventory stored in.
- 6. A part number (partNumber) is the identifier of the ordered parts that been placed by the customer.

Origin Data

customer_order	
<u>customerNumber PK</u>	HG54587
customerName	Jeff Peterson
customerType	Consumer
date	7/1/2024
time	10:30am
employeeName	D.Harrison

storage_information		
<u>partNumber PK</u>	10654	10456
customerNumber FK	HG54587	HG54587
name	Float Control	Modulator
type	Plumbing	Electrical
cageCode	G413	H433
quantityOrdered	4	3
unitPrice	12	7

1NF: ensures each table has PK & with no repeating groups
- origin data relations already in 1NF.

customer_order	
<u>customerNumber PK</u>	HG54587
customerName	Jeff Peterson
customerType	Consumer
date	7/1/2024
time	10:30am
employeeName	D.Harrison

storage_information		
<u>partNumber PK</u>	10654	10456
customerNumber FK	HG54587	HG54587
name	Float Control	Modulator
type	Plumbing	Electrical
cageCode	G413	H433
quantityOrdered	4	3
unitPrice	12	7

2NF: if only one field makes PK, OR all non-PK fields are dependent on all the PK fields
- from customer_order, attributes date, time, and employee name are dependent to the order input; so to separate them in an independent table order.

customer	
<u>customerNumber PK</u>	HG54587
customerName	Jeff Peterson
customerType	Consumer

order	
<u>orderId PK</u>	001
customerNumber FK	HG54587
employeeName	D.Harrison
date	7/1/2024
time	10:30am

ordered_part_storage	
<u>partNumber PK</u>	10654
orderId FK	001
name	Float Control
type	Plumbing
cageCode	G413
quantityOrdered	4
unitPrice	12

3NF: no fields are dependent on any of the non-PK fields
- from ordered_part_storage, type is dependent on cageCode, instead of PK. So separate into an independent table cage.
- from ordered_part_storage, orderId is not dependent on partNumber; quantityOrdered and unitPrice also dependent on orderId, instead of partNumber. So separate into two independent tables for order and part.

customer	
<u>customerNumber PK</u>	HG54587
customerName	Jeff Peterson
customerType	Consumer

order	
<u>orderId PK</u>	001
customerNumber FK	HG54587
employeeName	D.Harrison
date	7/1/2024
time	10:30am

ordered_storage	
<u>orderId PK (FK)</u>	001
<u>partNumber PK (FK)</u>	10654
quantityOrdered	4
unitPrice	12
cageCode FK	G413

part	
<u>partNumber PK</u>	10654
name	Float Control

cage	
<u>cageCode PK</u>	G413
type	Plumbing

Normalization for Panacea Mental Health Corporation therapists tracking

Assumptions

- 1. The branch number (branchNo) for each branch is unique.
- 2. Each therapist can work on a number of different branches, but only see patients at one specific bran on any given day.
- 3. A patient is given an appointment at a specific time and date at a particular branch with one therapist.
- 4. A patient may have multiple appointments in any given day and with multiple different therapists.
- 5. Each therapist has a staff number (staffNo) as identifier; each patient has a patient number (patNo) as identifier.

Origin Data

appointment_schedule	
staffNo	S1011
therapistName	FredSmith
patNo	P100
patName	LilyWhite
appointmentDate	9/12/2022
appointmentTime	10:00
branchNo	M15

1NF: ensures each table has PK & with no repeating groups

- origin data relations already in 1NF.

appointment_schedule	
<u>staffNo PK</u>	S1011
therapistName	FredSmith
<u>patNo PK</u>	P100
patName	LilyWhite
appointmentDate	9/12/2022
appointmentTime	10:00
<u>branchNo PK</u>	M15

2NF: if only one field makes PK, OR all non-PK fields are dependent on all the PK fields

- patNo and patName are not dependent on staffNo, so separate into table patient_information;
- appointment date and time are not dependent on staffNo, so separate into table appointment; and leave the origin table as therapist_information

therapist_information	
<u>staffNo PK</u>	S1011
therapistName	FredSmith

patient_information	
<u>patNo PK</u>	P100
patName	LilyWhite

appointment	
<u>appointmentId PK</u>	001
patNo FK	P100
staffNo FK	S1011
appointmentDate	9/12/2022
appointmentTime	10:00
branchNo	M15

3NF: no fields are dependent on any of the non-PK fields

- in table appointment, patNo, staffNo and branchNo are not dependent on their PK appointmentId; however, if treating patNo, staffNo and branchNo as composite PK, as a composite PK, the table is cleared from transitive dependencies

therapist_information	
<u>staffNo PK</u>	S1011
therapistName	FredSmith

patient_information	
<u>patNo PK</u>	P100
patName	LilyWhite

appointment	
<u>patNo PK (FK)</u>	P100
<u>staffNo PK (FK)</u>	S1011
appointmentDate	9/12/2022
appointmentTime	10:00
<u>branchNo PK</u>	M15

Normalization for the Maid Better temp agency supplies employee hours against contracts

Assumptions

- 1. The employee number (eNo) is unique for each member of staff.
- 2. Each contract only applies to one event, but can have multiple employee responsible.
- 3. There may be different contracts for an event depending upon different service needs.
- 4. Each contract has an contract number (contractNo) as its identifier.
- 5. Each event has an event number (eventNo) as its identifier; each event may only hold in one location.

Origin Data

employee_hours	
eNo	1135
contractNo	C1024
hours	16
eName	Smith J
eventNo	H25
eventLoc	Queens

1NF: ensures each table has PK & with no repeating groups

- origin data relation already in 1NF.

employee_hours	
<u>eNo PK</u>	1135
<u>contractNo PK</u>	C1024
hours	16
eName	Smith J
<u>eventNo PK</u>	H25
eventLoc	Queens

2NF: if only one field makes PK, OR all non-PK fields are dependent on all the PK fields

- employee name (eName) only depend on employee number (eNo), so separate into table employee;
- hours and event location (eventLoc) only depend on eventNo, so separate into table event;

employee	
<u>eNo PK</u>	1135
eName	Smith J

event	
<u>eventNo PK</u>	H25
eventLoc	Queens

contract_hours	
<u>contractNo PK</u>	C1024
<u>eNo PK (FK)</u>	1135
eventNo FK	H25
hours	16

3NF: no fields are dependent on any of the non-PK fields

- the tables are already in 3NF.

employee	
<u>eNo PK</u>	1135
eName	Smith J

event	
<u>eventNo PK</u>	H25
eventLoc	Queens

contract_hours	
<u>contractNo PK</u>	C1024
<u>eNo PK (FK)</u>	1135
eventNo FK	H25
hours	16