

Madhura Vitonde

Assignment 3

2/23/2025

1. Supply Company

Initial table (1NF):

customerName	customerNumber	customerType	date	time	employeeName	partNumber	partName	partType	cageCode	quantityOrdered	unitPrice
Jeff Peterson	HG54587	Consumer	7/1/2024	10:30 AM	D. Harrison	10654	Float Control	Plumbing	G413	4	12
Jeff Peterson	HG54588	Consumer	7/1/2024	10:30 AM	D. Harrison	10456	Modulator	Electrical	H433	3	7
Jeff Peterson	HG54589	Consumer	7/1/2024	10:30 AM	D. Harrison	10776	Hose Assembly	Plumbing	G413	7	9
Jeff Peterson	HG54590	Consumer	7/1/2024	10:30 AM	D. Harrison	10657	Float Assembly	Plumbing	G413	5	10

Assumptions:

1. Employees can help any customers
2. Customers can order parts multiple times

Normalization:

1. This table is initially in 1NF because there are no repeating groups.
 - a. Primary Keys
 - i. customerNumber, partNumber, and date
 - b. It is not in 2NF because there is a composite primary key and some of the attributes are only dependent on part of the primary key.

customer		
customerNumber	customerName	customerType
HG54587	Jeff Peterson	Consumer

order					
customerNumber	date	partNumber	time	employeeName	quantityOrdered
HG54587	7/1/2024	10654	10:30 AM	D. Harrison	4
HG54588	7/1/2024	10456	10:30 AM	D. Harrison	3
HG54589	7/1/2024	10776	10:30 AM	D. Harrison	7
HG54590	7/1/2024	10657	10:30 AM	D. Harrison	5

part				
partNumber	partName	partType	cageCode	unitPrice
10654	Float Control	Plumbing	G413	12
10456	Modulator	Electrical	H433	7
10776	Hose Assembly	Plumbing	G413	9
10657	Float Assembly	Plumbing	G413	10

2. This table is now in 2NF because in the new tables, each of the non-primary attributes are entirely dependent on the entire primary key.
 - a. Primary Keys
 - i. customerNumber for the customer table
 - ii. customerNumber, date, and partNumber for the order table

iii. partNumber for the part table

3. The information is also in 3NF. All the attributes in each of the tables are not transitively dependent on each other and are only dependent on the primary key.

a. Primary Keys

- i. customerNumber for the customer table
- ii. customerNumber, date, and partNumber for the order table
- iii. partNumber for the part table

b. Foreign Keys

- i. customerNumber, partNumber in the order table

c. Relations:

- i. The order table is related to the customer table because the customer makes the transaction
- ii. The transaction table is also related to the parts table because information about the parts bought is found in the parts table

2. Mental Health Corporation

Initial Table (1NF):

<u>staffNo</u>	therapistName	<u>patNo</u>	patName	<u>aptDate</u>	<u>aptTime</u>	branchNo
S1011	Fred Smith	P100	Lily White	9/12/2022	10:00	M15
S1011	Fred Smith	P105	Jill Baker	9/12/2022	12:00	M15
S1024	Heidi Pierce	P108	Andy McKee	9/12/2022	10:00	Q10
S1024	Heidi Pierce	P108	Andy McKee	9/14/2022	14:00	Q10
S1032	Richard Levin	P105	Jill Baker	9/14/2022	16:30	M15
S1032	Richard Levin	P110	Jimmy Winter	9/15/2022	18:00	B13

Assumptions:

1. Therapists can work at multiple branches
 - a. But only see patients at only one branch on one day
2. Patients can have multiple appointments
3. Patients can meet with multiple different therapists

Normalization

1. The table is initially in 1NF because there are attributes that add uniqueness to each instance
 - a. There are no repeating groups either
 - b. Primary keys
 - i. staffNo, patNo, aptDate
 - c. It is not in 2NF because there is a composite primary key and some attributes are only dependent on part of the primary key.

therapist		patient	
<u>staffNo</u>	therapistName	<u>patNo</u>	patName
S1011	Fred Smith	P100	Lily White
S1024	Heidi Pierce	P105	Jill Baker
S1032	Richard Levin	P108	Andy McKee
		P110	Jimmy Winter

appointment				
<u>staffNo</u>	<u>patNo</u>	<u>aptDate</u>	<u>aptTime</u>	branchNo
S1011	P100	9/12/2022	10:00	M15
S1011	P105	9/12/2022	12:00	M15
S1024	P108	9/12/2022	10:00	Q10
S1024	P108	9/14/2022	14:00	Q10
S1032	P105	9/14/2022	16:30	M15
S1032	P110	9/15/2022	18:00	B13

2. The tables are now in 2NF and each of the non-primary attributes is entirely dependent on the entire primary keys
 - a. Primary keys
 - i. staffNo for the therapist table
 - ii. patNo for the patient table
 - iii. staffNo, patNo, and aptDate for the appointment table
3. The tables are also in 3NF because there are no transitive relations between the non-primary attributes
 - a. Primary keys
 - i. patNo for the patient table
 - ii. staffNo for the therapist table
 - iii. staffNo, patNo, aptDate for the appointment table
 - b. Foreign Keys
 - i. staffNo, patNo are the foreign keys in the appointment table
 - c. Relations
 - i. The appointment table is related to the therapist and patient table because the patient makes the appointment and the therapist is present at the appointment.

3. Temp Agency

Initial Table (1NF):

<u>eNo</u>	<u>contractNo</u>	hours	eName	<u>eventNo</u>	eventLoc
1135	C1024	16	Smith J	H25	Queens
1057	C1024	24	Hocine D	H25	Queens
1068	C1025	28	White T	H4	Yonkers
1135	C1025	15	Smith J	H4	Yonkers
1135	C1026	10	Smith J	H25	Queens

Assumptions

1. Multiple employees can work on the same event

- a. Multiple employees can work on the same contract
2. An event can happen at only one location
3. There can be multiple contracts for one event

Normalization

1. The initial table is also in 1NF because there are no repeating groups
 - a. Primary Key
 - i. eNo, contractNo, eventNo
 - b. It is not in 2NF because there is a composite primary key and some of the attributes are only dependent on part of the primary key.

employee		event	
<u>eNo</u>	eName	<u>eventNo</u>	eventLoc
1135	Smith J	H25	Queens
1057	Hocine D	H4	Yonkers
1068	White T		

contract			
<u>contractNo</u>	<u>eNo</u>	<u>eventNo</u>	hours
C1024	1135	H25	16
C1024	1057	H25	24
C1025	1068	H4	28
C1025	1135	H4	15
C1026	1135	H25	10

2. The tables are now in 2NF because each of the non-primary attributes is entirely dependent on the entire primary keys
 - a. Primary Keys
 - i. eNo for the employee table
 - ii. eventNo for the event table
 - iii. contractNo, eNo for the contract table
3. The tables are also in 3NF because there is no transitive dependencies between the non-primary attributes
 - a. Primary Keys
 - i. eNo for the employee table
 - ii. eventNo for the event table
 - iii. contractNo, eNo for the contract table
 - b. Foreign Keys
 - i. eNo in the contract table
 - ii. eventNo in the contract table

c. Relations

- i. The contract table is related to the employee table because each of the contracts are for each employee, so the employee works on a particular contract
- ii. The contract table is related to the event table because each of the contracts are for the different events