Exercise 1 : Normalization

member_id	member_name	member_address	dinner_id	dinner_date	venue_code	venue_description	food_code	food_description
1	Amit	325 Max park	D00001001	2020-03-15	B01	Grand Ball Room	C1, C2	Curry, Cake
2	Ben	24 Hudson lane	D00001002	2020-03-15	B02	Zoku Roof Top	S1, C2	Soup, Cake
3	Cristina	516 6th Ave	D00001002	2020-03-15	B02	Zoku Roof Top	S1, C2	Soup, Cake
4	Dan	89 John St	D00001003	2020-03-20	B03	Goat Farm	P1, T1, M1	Pie, Tea, Mousse
5	Ema	91 Pixar St	D00001003	2020-03-20	B03	Goat Farm	P1, T1, M1	Pie, Tea, Mousse
6	Fatima	56 8th Ave	D00001004	2020-03-20	B04	Mama's Kitchen	F1, M1	Falafal, Mousse
7	Gabor	54 Vivaldi St	D00001005	2020-02-20	B05	Hungry Hungary	G1, P2	Goulash, Pasca
8	Hema	9 Peter St	D00001003	2020-03-20	B03	Goat Farm	P1, T1, M1	Pie, Tea, Mousse

How can you convert the table into 1NF ?

- Rule 1 : Single valued attributes (each column should have atomic value, no multiple values)
- Rule 2 : Attribute domain should not change
- Rule 3 : Unique names for attributes / columns
- Rule 4 : Order does not matter

member_id	member_name	member_address	dinner_id	dinner_date	venue_code	venue_description	food_code	food_description
1	Amit	325 Max park	D00001001	2020-03-15	B01	Grand Ball Room	C1	Curry
1	Amit	325 Max park	D00001001	2020-03-15	B01	Grand Ball Room	C2	Cake
2	Ben	24 Hudson lane	D00001002	2020-03-15	B02	Zoku Roof Top	S1	Soup
2	Ben	24 Hudson lane	D00001002	2020-03-15	B02	Zoku Roof Top	C2	Cake
3	Cristina	516 6th Ave	D00001002	2020-03-15	B02	Zoku Roof Top	S1	Soup
3	Cristina	516 6th Ave	D00001002	2020-03-15	B02	Zoku Roof Top	C2	Cake
4	Dan	89 John St	D00001003	2020-03-20	B03	Goat Farm	P1	Pie
4	Dan	89 John St	D00001003	2020-03-20	B03	Goat Farm	T1	Tea
4	Dan	89 John St	D00001003	2020-03-20	B03	Goat Farm	M1	Mousse
5	Ema	91 Pixar St	D00001003	2020-03-20	B03	Goat Farm	P1	Pie
5	Ema	91 Pixar St	D00001003	2020-03-20	B03	Goat Farm	T1	Tea
5	Ema	91 Pixar St	D00001003	2020-03-20	B03	Goat Farm	M1	Mousse
6	Fatima	56 8th Ave	D00001004	2020-03-20	B04	Mama's Kitchen	F1	Falafal

6	Fatima	56 8th Ave	D00001004	2020-03-20	B04	Mama's Kitchen	M1	Mousse
7	Gabor	54 Vivaldi St	D00001005	2020-02-20	B05	Hungry Hungary	G1	Goulash
7	Gabor	54 Vivaldi St	D00001005	2020-02-20	B05	Hungry Hungary	P2	Pasca
8	Hema	9 Peter St	D00001003	2020-03-20	B03	Goat Farm	P1	Pie
8	Hema	9 Peter St	D00001003	2020-03-20	B03	Goat Farm	T1	Tea
8	Hema	9 Peter St	D00001003	2020-03-20	B03	Goat Farm	M1	Mousse

2-What are the super, candidate, primary keys ?

Create a primary key to **member_id so**

Primary key

member_id

Super key

{member_name | mamber _address | **dinner**_id - food_code}

Candidate key

{ member_name | mamber _address}

{ member_name | food_code }

1- **What are the potential relationships between different possible tables ?**
2- **How can you convert the table into 2NF ?**
3- **How can you convert the table into 2NF ?**

Tables Planned

Members Table

member_id P_K	member_name	member_address
1	Amit	325 Max park
2	Ben	24 Hudson lane
3	Cristina	516 6th Ave
4	Dan	89 John St
5	Ema	91 Pixar St
6	Fatima	56 8th Ave
7	Gabor	54 Vivaldi St
8	Hema	9 Peter St

Dinner Table

dinner_id P_K	dinner_date
D00001001	2020-03-15
D00001002	2020-03-15
D00001003	2020-03-20
D00001004	2020-03-20
D00001005	2020-03-20

Venue Table

venue_code P_K	venue_description
B01	Grand Ball Room
B02	Zoku Roof Top
B03	Goat Farm
B04	Mama's Kitchen
B05	Hungry Hungary

Foods Table

food_code P_K	food_description
C1	Curry
C2	Cake
S1	Soup
P1	Pie
P2	Pasca
T1	Tea
M1	Mousse
F1	Falafal
G1	Goulash

Attendees Table

member_id	dinner_id	venue_code	food_code
F_k references members table (member_id)	F_k references dinner table (dinner_id)	F_k references venue table (**venue_code**)	F_k references foods table (food_code)