DMDD ASSIGNMENT 4 - NORMALISATION

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1NF:-

Requirements of 1NF -

Separate tables must be created for each set of related data

There is a unique name for every Attribute/Column.

There are only Single Valued Attributes.

2NF:-

Requirements of 2NF are:-

1. It satisfies all the conditions of the 1NF

2. It does not have any non-prime attribute that is functionally dependent on any proper subset of any candidate key of the relation.
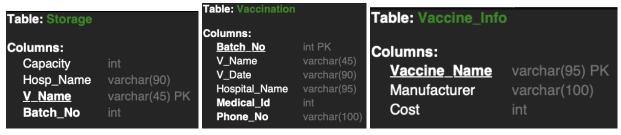
3NF:-

Requirements of 3NF are:-

1. All the requirements of 2NF should be satisfied

2. It should not have any partial transitive dependencies

A few snippets of the tables are below:-

Table: PERSONS

Columns:

First_Name	varchar(30)
Last_Name	varchar(40)
Age	int
Medical_Id	int PK
Phone_No	varchar(30)
Email	varchar(100)
Gender	varchar(10)

Table: Covid_Shot

Columns:

PersonMID	int PK
First_Dose	int
Second_Dose	int

Table: Residential_Address

Columns:

UPerson_Id	int PK
Zip_Code	int
Address	varchar(95)

Table: Storage

Columns:

Capacity	int
Hosp_Name	varchar(90)
V_Name	varchar(45) PK
Batch_No	int

Table: Vaccination

Columns:

Batch_No	int PK
V_Name	varchar(45)
V_Date	varchar(90)
Hospital_Name	varchar(95)
Medical_Id	int
Phone_No	varchar(100)

Table: Vaccine_Info

Columns:

Vaccine_Name	varchar(95) PK
Manufacturer	varchar(100)
Cost	int

Table: Vaciination_Centre

Columns:

Hosp_Name	varchar(90)
Phone_No	varchar(100) PK
City	varchar(30)
State	varchar(30)

Example PERSON TABLE:-

	First_Name	Last_Name	Age	Medical_Id	Phone_No	Email	Gender
►	Donny	Cawdron	75	11072	402-764-0761	dcawdron2x@mozilla.org	Female
	Salvador	Dzenisenka	92	11193	414-726-7470	sdzenisenka2a@howstuffworks.com	Female
	Ginny	McUre	77	11468	341-212-4599	gmcure21@wufoo.com	Male

Example COVID SHOT TABLE:-

PersonMID	First_Dose	Second_Dose
11072	1	0
11193	1	1

Here we can see that the table is in compliance with the rules of 1NF that is every column in the table must be atomic and should have a primary key and there are no repeating groups.

As you can see, there are no duplicate rows in the following tables and no repeating groups so all the following tables are in 1NF. And as there are no Partial Dependencies in the following tables the tables are in 2NF. And as there are no Transitive Dependencies in the following tables all the following tables are in compliance with the 3rd Normal Form.
Hence all the tables are successfully normalised.

We are creating the views now as per the use cases of assignment 3 and the queries to
Views for the USE CASES ▬

Q1) Which person with medicalID has taken vaccine in which hospital?
CREATE VIEW QU1Vvview AS
select persons.Medical_Id, Vaccination.Hospital_Name from persons
inner join Vaccination
on Vaccination.Medical_Id = Persons.Medical_Id;

```
View: qu1vvview

Columns:
    Medical_Id          int
    Hospital_Name       varchar(95)
```
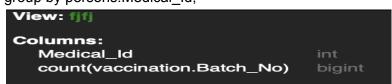
Q2) Count og vaccine taken by person with medical id from repective batch number ?
CREATE VIEW fjfj AS
select persons.Medical_Id, count(vaccination.Batch_No) from persons
inner join vaccination
on vaccination.Medical_Id = persons.Medical_Id
group by persons.Medical_Id;

```
View: fjfj

Columns:
    Medical_Id                      int
    count(vaccination.Batch_No)     bigint
```

Q3) Vaccination Info of a person with medical Id?
CREATE VIEW ViewQ3 AS
select c.First_Dose, c.Second_Dose, p.First_Name, p.Last_Name, p.Medical_Id from Covid_Shot c
join persons p on c.PersonMId = p.Medical_Id;

```
View: viewq3

Columns:
    First_Dose      int
    Second_Dose     int
    First_Name      varchar(30)
    Last_Name       varchar(40)
    Medical_Id      int
```
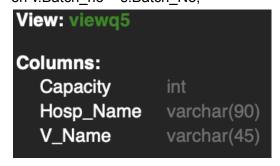
Q4) what are the Address details of person with medical id?

CREATE VIEW ViewQ4 AS
select p.First_Name, c.PersonMID, r.Zip_Code, r.Address from persons p
join residential_address r on r.UPerson_Id = p.Medical_Id
join covid_shot c on c.PersonMID = p.Medical_Id;

```
View: viewq4

Columns:
    First_Name      varchar(30)
    PersonMID       int
    Zip_Code        int
    Address         varchar(95)
```
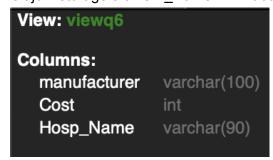
Q5) Which hospital has how many doses of vaccine available and their vaccine names?
CREATE VIEW ViewQ5 AS
select s.Capacity, s.Hosp_Name, v.V_Name from storage s
inner join vaccination v
on v.Batch_no = s.Batch_No;

```
View: viewq5

Columns:
    Capacity        int
    Hosp_Name       varchar(90)
    V_Name          varchar(45)
```
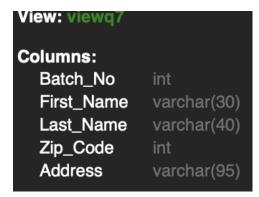
Q6) which hospital has which manufacturers vaccine with its respective cost?
CREATE VIEW ViewQ6 AS
select vi.manufacturer, vi.Cost, s.Hosp_Name from vaccine_info vi
left join storage s on s.V_Name = vi.Vaccine_Name;

```
View: viewq6

Columns:
    manufacturer    varchar(100)
    Cost            int
    Hosp_Name       varchar(90)
```

Q7) Retrive data that which person with respective adderss has taken dose from which batch No?
CREATE VIEW ViewQ7 AS
select v.Batch_No, p.First_Name, p.Last_Name, r.Zip_Code, r.Address from vaccination v
join persons p on p.Medical_Id = v.Medical_Id
join residential_address r on r.UPerson_ID = p.Medical_Id;

View: viewq7

Columns:
Batch_No	int
First_Name	varchar(30)
Last_Name	varchar(40)
Zip_Code	int
Address	varchar(95)

Q8)
CREATE VIEW View_8 AS
select vc.City, vc.State, p.age, p.email from Vaciination_Centre vc
join vaccination v on vc.Phone_No = v.Phone_no
join persons p on p.Medical_Id = v.Medical_Id;

View: view_8

Columns:
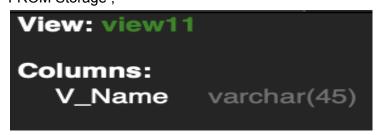| City | varchar(30) |
State	varchar(30)
age	int
email	varchar(100)

Q9) Price of 1 dose with its respective batch no?
CREATE VIEW View1 AS
select v.Batch_no, sum(vi.Cost) from vaccination v
join storage s on s.Batch_No = v.Batch_No
join vaccine_info vi on vi.Vaccine_Name = s.V_Name
group by v.Batch_No;

View: person_view

Columns:
First_Name	varchar(30)
Last_Name	varchar(40)
Age	int
Medical_Id	int
Phone_No	varchar(30)
Email	varchar(100)
Gender	varchar(10)

Q10) Retrive the First and Last name associated with the medical Id's of the first 5 people from the persons table ?
Create View View10 AS
select First_Name, Last_Name, Medical_Id
FROM PERSONS
LIMIT 5;

View: view10

Columns:
First_Name	varchar(30)
Last_Name	varchar(40)
Medical_Id	int

Q11) Vaccine name from storage table?
use VASU;
create view View11 AS
Select V_Name
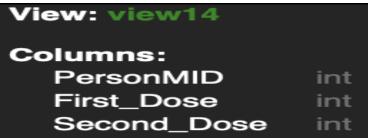FROM Storage ;

```
View: view11

Columns:
    V_Name      varchar(45)
```

Q12) Retrieve the data of covaxin and their respective batch number?
Create view View12 AS
SELECT V_Name, Batch_No
FROM Storage;

```
View: view12

Columns:
    V_Name      varchar(45)
    Batch_No    int
```

Q13) How many people with medical id have taken first dose?
create view View13 AS
SELECT PersonMID, First_Dose
FROM Covid_Shot;

```
View: view13

Columns:
    PersonMID       int
    First_Dose      int
```

Q14) How many people with medical id have taken first dose?
create view View13 AS
SELECT PersonMID, First_Dose
FROM Covid_Shot;

```
View: view14

Columns:
    PersonMID       int
    First_Dose      int
    Second_Dose     int
```

Q15) How many vaccination centers are there in state Maharashtra?
create view view15 as
Select Hosp_Name, State
from Vaciination_Centre
where state = 'Maharashtra' ;

```
View: view15

Columns:
    Hosp_Name      varchar(90)
    State          varchar(30)
```