



FACULTY OF COMPUTING
UNIVERSITI MALAYSIA PAHANG
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PROJECT TITLE : VACCINE MANAGEMENT SYSTEM

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BACKGROUND / INTRODUCTION



In December 2019, the whole world was rocked by the Covid-19 outbreak. The Covid-19 outbreak has had several impacts on human life, especially the death of a loved one. Covid-19 is killing people on a large scale. As of December 29, 2021, more than 5 million people across the world have died due to Covid-19. Meanwhile, statistics in Malaysia have shown a total of 31,428 death cases. Since the World Health Organization (WHO) declared the Covid-19 outbreak a pandemic back in March 2020, all health organizations, and staff across the world work hard to study about this virus and produce vaccines to reduce this transmission. Even though this virus has been a part of our life for over two years, we still need to be careful.

MyVax is a short form for Malaysia Vaccine. MyVax is an application developed to assist Malaysians in the process of getting their vaccinations. This application provides detailed information and reminders about vaccine appointments to their users. After registering for the vaccine through MyVax, users will be assigned to 'Pusat Pemberian Vaksin (PPV)' that is close to their house based on the address that has been entered. All vaccine appointments can also be cancelled by the user if there are unavoidable things and will be rescheduled automatically. In addition, MyVax also provides vaccine registration section by employer for their employees

As a conclusion, MyVax is a Vaccine Management System that acts as a big library for the user and provides all information regarding vaccines to their user.

SCOPE SYSTEM

The users of the MyVax Vaccine Management System are all Malaysians who want to get their Covid-19 vaccine. MyVax provides another way for the user to display all related information regarding their personal information and vaccine information. It is an automatic system that the user can use anywhere and anytime conveniently.

Through this investigation, the system will:

- Provide online registration for the users.
- Assist users in the process of getting vaccines.
- Provide automatic reschedule appointments to users.
- Locate nearest PPV for Covid-19 vaccines.
- Provide vaccine certificate.

Hence, users can:

- Create an account and log in to the system.
- Access the system's home page.
- Make registration for the vaccines.
- Display their personal information.
- Display their vaccine appointment details.

OBJECTIVES

MyVax aims to be one of the main platforms that manage all activities that relate to vaccines in Malaysia. To prove that, MyVax needs to achieve a few objectives. These are the MyVax objectives:

- To provide information about vaccines.
- To provide the benefit of vaccines against Covid-19 to Malaysians.
- To obtain statistical information on the number of users that have been vaccinated.

WORK DISTRIBUTIONS

NAME	STUDENT ID	TASK
NIK NUR AIN BINTI NIK JID	SD20022	<ul style="list-style-type: none"> • Lead the project • Introduction, Scope and Objectives • Propose 2 entity • Relationship and business rules between entity • SQL query command
MUHAMMAD AIMANDZIKRI BIN MOHD NIZAM	SD20020	<ul style="list-style-type: none"> • Lead the ER diagram creating process • Propose 2 entity • Relationship and business rules between entity • Normalization
NUR AMIRA ASYIKIN BINTI AZLAN	SD20023	<ul style="list-style-type: none"> • Lead the EER diagram creating process • Propose 2 entity • Relationship and business rules between entity • Data Dictionary
SYARIFAH NABILAH SYAHIRAH BINTI SYED ABD WAHAB	SD20027	<ul style="list-style-type: none"> • Lead the case studies comparing session • propose 2 entity • Relationship and business rules between entity • Create table & insert data
MUHAMMAD NUR ALIF BIN LAZIM	SD20048	<ul style="list-style-type: none"> • Lead the discussion of identifying the business rules and all relevant keys • Propose 2 entity • Relationship and business rules between entity • Create table & insert data • SQL query command
NUR AIDA IZZATI BINTI KAMARULAZUA	SD20059	<ul style="list-style-type: none"> • Lead the discussion of identifying the entities related • Propose 2 entity • Relationship and business rules between entity • Create table & insert data

CASE STUDY 1

References: Selangkah VAX <https://vax.selangkah.my/> and SELANGKAH apps

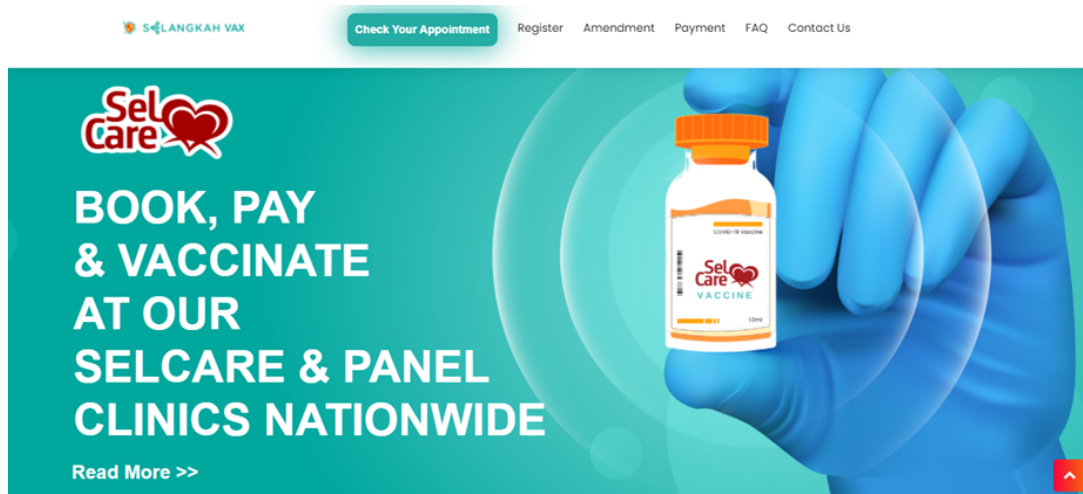


Figure 1: Selangkah VAX Website

Selangkah VAX consists of 10 entities which are Patient, Appointment, Vaccine, Company, Certificate, Center, Doctor, Nurse, Volunteer and Police.

Patient contains a few attributes such as p_ID, p_Name, phone_No, p_DOB, p_Address and p_Age. The primary key (PK) for this entity is p_ID. For Appointment, the attributes are p_ID (PK), ppv_ID, app_Date and slot. The foreign key (FK) is p_ID.

Vaccine contains vac_No(PK), p_ID(FK), vac_Type and batch_No as the attributes. The entity of the Company consists of c_ID, p_ID (PK,FK), c_Name, p_Name, c_Address and office_No. For Certificate entities, the attributes are batch_No (PK), p_ID (FK), ppv_ID (FK), vac_Type, app_Date and vac_Status.

Furthermore, the Center attributes are ppv_ID (PK), p_ID (FK), ppv_Name and app_Date. While for Doctor entities the attributes are d_ID (PK), ppv_ID (FK), staff_Name, phone_No and hospital_Name. The Nurse has n_ID (PK), ppv_ID (FK), staff_Name, phone_No and hospital_Name as the attributes.

Lastly, the entities for Volunteer are v_ID (PK), ppv_ID (FK), staff_Name, phone_No and home_Address as the attributes. For the Police entity, the attributes are po_ID (PK), ppv_ID (FK), staff_Name, phone_No and station_Name.

CASE STUDY 2

References: MySejahtera <https://mysejahtera.malaysia.gov.my/intro/> and MySejahtera Apps

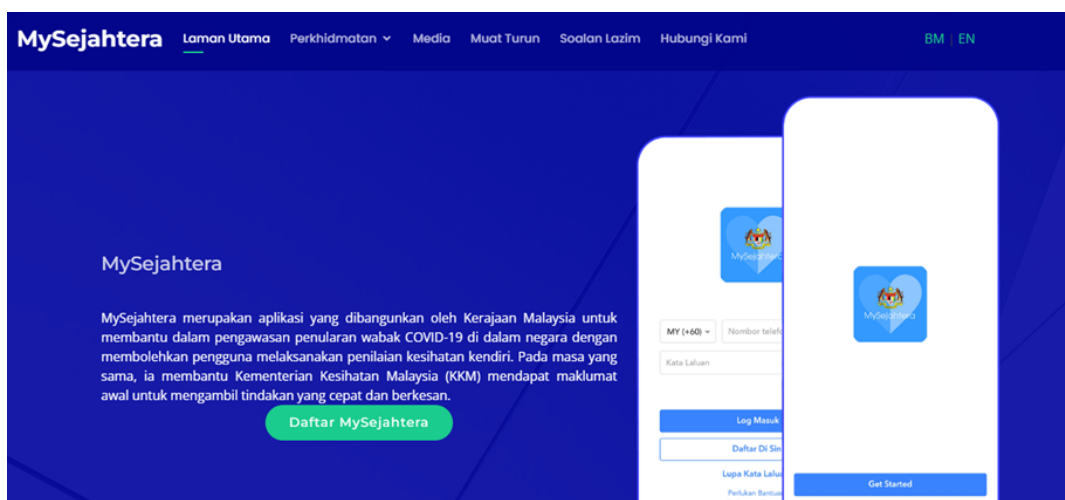


Figure 2: MySejahtera Website

MySejahtera consists of 5 entities which are Patient, Appointment, Vaccine, Certificate and Center. Patient contains a few attributes such as p_ID, p_Name, phone_No, p_DOB, p_Address and p_Age. The primary key (PK) for this entity is p_ID. For Appointment, the attributes are p_ID (PK), ppv_ID, app_Date and slot. The foreign key (FK) is p_ID.

Vaccine contains vac_No(PK), p_ID(FK), vac_Type and batch_No as the attributes. For Certificate entities, the attributes are batch_No (PK), p_ID (FK), ppv_ID (FK), vac_Type, app_Date and vac_Status. The Center attributes are ppv_ID (PK), p_ID (FK), ppv_Name and app_Date.

COMPARISON BETWEEN TWO CASE STUDY:

	MySejahtera	SELANGKAH
Entities	<ol style="list-style-type: none">1. Patient2. Appointment3. Vaccine4. Certificate5. Center	<ol style="list-style-type: none">1. Patient2. Appointment3. Vaccine4. Company5. Certificate6. Center7. Doctor8. Nurse9. Volunteer10. Police

Attributes	<p>1. Patient</p> <ul style="list-style-type: none"> • p_ID (PK) • p_Name • phone_No • p_DOB • p_Address • p_Age <p>2. Appointment</p> <ul style="list-style-type: none"> • p_ID (PK) • ppv_ID (FK) • app_Date • slot <p>3. Vaccine</p> <ul style="list-style-type: none"> • vac_No (PK) • p_ID (FK) • vac_Type • batch_No (FK) <p>4. Certificate</p> <ul style="list-style-type: none"> • batch_No (PK) • p_ID (FK) • ppv_ID (FK) • vac_Type • app_Date • vac_Status <p>5. Center</p> <ul style="list-style-type: none"> • ppv_ID (PK) • p_ID (FK) • ppv_Name • app_Date 	<p>1. Patient</p> <ul style="list-style-type: none"> • p_ID (PK) • p_Name • phone_No • p_DOB • p_Address • p_Age <p>2. Appointment</p> <ul style="list-style-type: none"> • p_ID (PK) • ppv_ID (FK) • app_Date • slot <p>3. Vaccine</p> <ul style="list-style-type: none"> • vac_No (PK) • p_ID (FK) • vac_Type • batch_No (FK) <p>4. Company</p> <ul style="list-style-type: none"> • c_ID • p_ID (PK,FK) • c_Name • p_Name • c_Address • office_No <p>5. Certificate</p> <ul style="list-style-type: none"> • batch_No (PK) • p_ID (FK) • ppv_ID (FK) • vac_Type • app_Date • vac_Status <p>6. Center</p> <ul style="list-style-type: none"> • ppv_ID (PK) • p_ID (FK) • ppv_Name • app_Date
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		<p>7. Doctor</p> <ul style="list-style-type: none"> • d_ID (PK) • ppv_ID (FK) • staff_Name • phone_No • hospital_Name <p>8. Nurse</p> <ul style="list-style-type: none"> • n_ID (PK) • ppv_ID (FK) • staff_Name • phone_No • hospital_Name <p>9. Volunteer</p> <ul style="list-style-type: none"> • v_ID (PK) • ppv_ID (FK) • staff_Name • phone_No • home_Address <p>10. Police</p> <ul style="list-style-type: none"> • po_ID (PK) • ppv_ID (FK) • staff_Name • phone_No • station_Name
--	--	---

Relationship	<ul style="list-style-type: none"> • One patient may schedule for one and only one appointment. • One appointment is scheduled for one and only one patient. • One patient may receive one and only one type of vaccine. • One type of vaccine may be taken by one or many patients. • One patient can be scheduled to one and only one center only. • One center can have many patients at one time. • One patient may get one and only one certificate. • One certificate may be given to one and only one patient. 	<ul style="list-style-type: none"> • One patient may schedule for one and only one appointment. • One appointment is scheduled for one and only one patient. • One patient may receive one and only one type of vaccine. • One type of vaccine may be taken by one or many patients. • One patient can be scheduled to one and only one center only. • One center can have many patients at one time. • One patient can be registered for a vaccine by one company or none. • One company can register one or many patients to get vaccines. • One patient may get one and only one certificate. • One certificate may be given to one and only one patient. • One patient can be checked by one and only one doctor only. • One doctor can check many patients. • One patient may be escorted by one or many police officers at one time. • One police officer may escort many or none patients.
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		<ul style="list-style-type: none"> • One patient can be injected for the vaccine by one and only one nurse. • One nurse can inject many patients. • One patient can be attended by one or many volunteer staff at one time. • One volunteer staff may attend for one or none patients. • One center may be managed by one or many doctors. • One doctor may manage one and only one center at one time. • One center may be guarded by one and or many police officers. • One police officer may guard one and only one center at one time. • One center may be managed by one or many nurses. • One nurse may manage one and only one center at one time. • One center may be attended by one or many volunteer staff. • One volunteer staff may attend one and only one center at one time.
References	<ol style="list-style-type: none"> 1. Website, MySejahtera https://mysejahtera.malaysia.gov.my/intro/ 2. Apps, MySejahtera 	<ol style="list-style-type: none"> 1. Website, Selangkah VAX https://vax.selangkah.my/ 2. Apps, SELANGKAH

ATTRIBUTES AND PRIMARY KEY

ENTITY	ATTRIBUTES	PRIMARY KEY
Patient	p_ID p_Name phone_No p_DOB p_Address p_Age	p_ID
Appointment	p_ID ppv_ID app_Date slot	p_ID
Vaccine	vac_No p_ID vac_Type batch_No	vac_No
Company	c_ID p_ID c_Name p_Name c_Address office_No	p_ID
Certificate	batch_No p_ID ppv_ID vac_Type app_Date vac_Status	batch_No

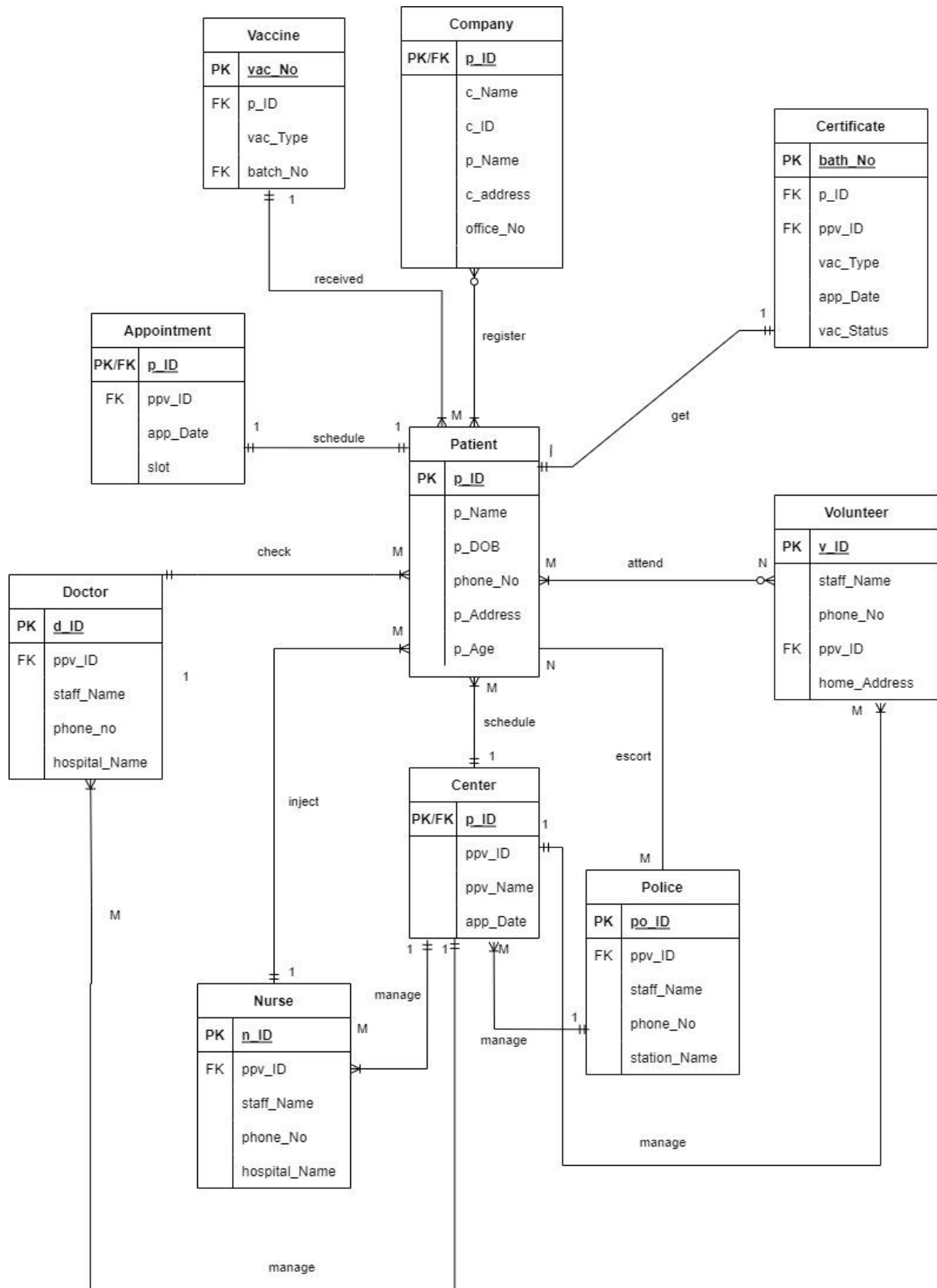
Center	ppv_ID p_ID ppv_Name app_Date	p_ID
Doctor	d_ID ppv_ID staff_Name phone_No hospital_Name	d_ID
Nurse	n_ID ppv_ID staff_Name phone_No hospital_Name	n_ID
Volunteer	v_ID ppv_ID staff_Name phone_No home_Address	v_ID
Police	po_ID ppv_ID staff_Name phone_No station_Name	po_ID

BUSINESS RULES AND RELATIONSHIP

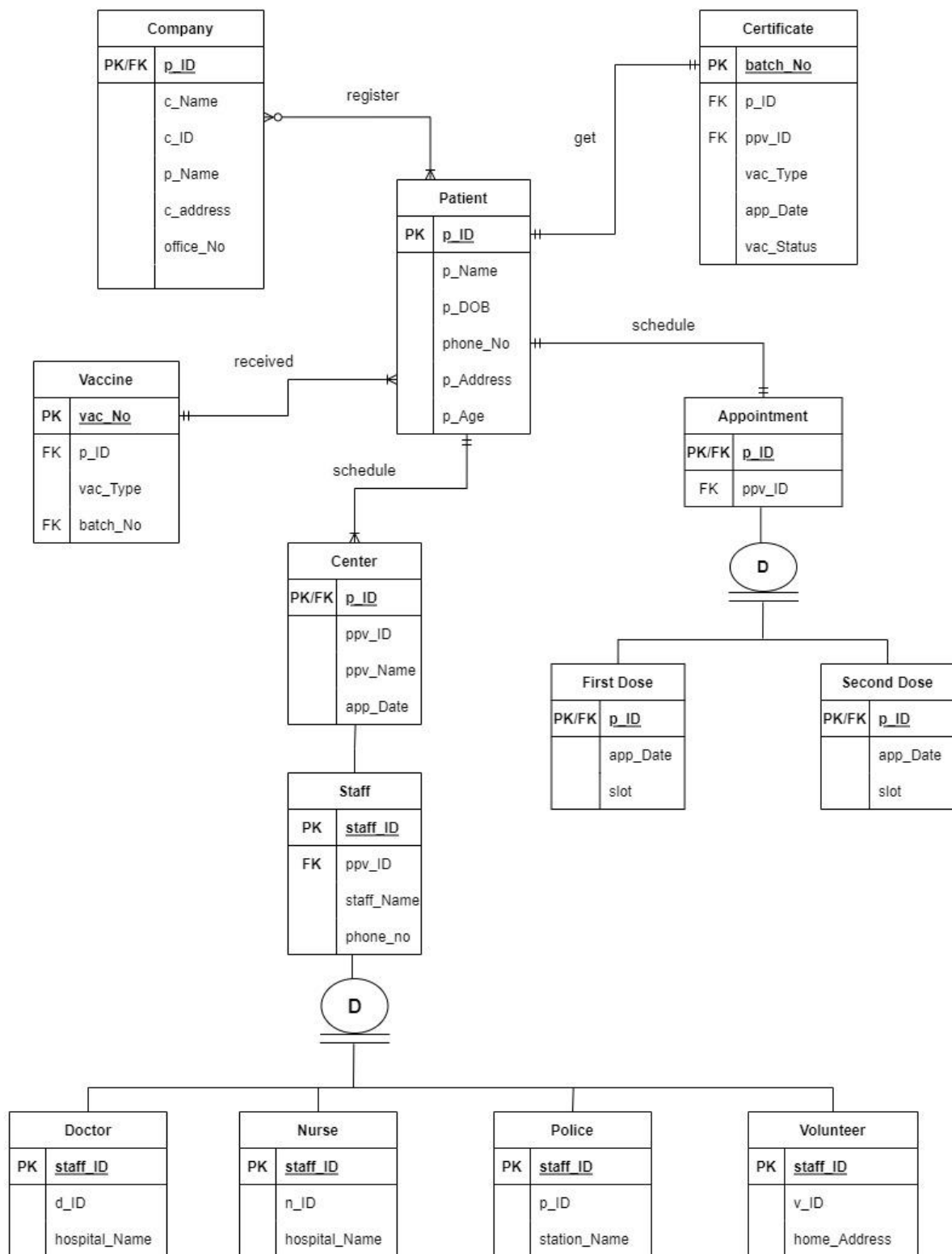
ENTITY	RELATIONSHIP	ENTITY	BUSINESS RULES
Patient	1:1	Appointment	<ul style="list-style-type: none"> One patient may schedule for one and only one appointment. One appointment is scheduled for one and only one patient.
	M:1	Vaccine	<ul style="list-style-type: none"> One patient may receive one and only one type of vaccine. One type of vaccine may be taken by one or many patients.
	1:M	Center	<ul style="list-style-type: none"> One patient can be scheduled to one and only one center only. One center can have many patients at one time.
	M:N	Company	<ul style="list-style-type: none"> One patient can be registered for a vaccine by one company or none. One company can register one or many patients to get vaccines.
	1:1	Certificate	<ul style="list-style-type: none"> One patient may get one and only one certificate. One certificate may be given to one and only one patient.
	1:M	Doctor	<ul style="list-style-type: none"> One patient can be checked by one and only one doctor only. One doctor can check many patients.
	M:N	Police	<ul style="list-style-type: none"> One patient may be escorted by one or many police officers at one time. One police officer may escort many or none

			patients.
	1:M	Nurse	<ul style="list-style-type: none"> One patient can be injected for the vaccine by one and only one nurse. One nurse can inject many patients.
	M:N	Volunteers	<ul style="list-style-type: none"> One patient can be attended by one or many volunteer staff at one time. One volunteer staff may attend for one or none patients.
Center	M:1	Doctor	<ul style="list-style-type: none"> One center may be managed by one or many doctors. One doctor may manage one and only one center at one time.
	M:1	Police	<ul style="list-style-type: none"> One center may be guarded by one and or many police officers. One police officer may guard one and only one center at one time.
	M:1	Nurse	<ul style="list-style-type: none"> One center may be managed by one or many nurses. One nurse may manage one and only one center at one time.
	M:1	Volunteer	<ul style="list-style-type: none"> One center may be attended by one or many volunteer staff. One volunteer staff may attend one and only one center at one time.

ENTITY RELATIONSHIP DIAGRAM



EXTENDED ENTITY RELATIONSHIP DIAGRAM



NORMALIZATION

1NF

Patients (p_ID, c_ID, batch_No, vac_No, v_ID, ppv_ID, p_Name, n_ID, po_ID, phone_No, p_Address, p_Age, vac_Type, app_Date, slot, ppv_Name, home_Address, vac_Type, vac_Status,)

2NF

Volunteer (v_ID, ppv_ID, p_ID, staff_Name, home_Address)

Polices (po_ID, ppv_ID, staff_Name, phone_No, station_Name, p_ID, ppv_Name)

Nurse (n_ID, ppv_ID, staff_Name, phone_No, hospital_Name, p_ID, ppv_Name)

Doctor (d_ID, ppv_ID, staff_Name, phone_No, hospital_Name, p_ID, ppv_Name)

3NF

Company (c_ID, c_Name, p_ID, p_Name, c_address, office_No)

Vaccine (vac_No, p_ID, vac_Type, batch_No)

Appointment (p_ID, ppv_ID, app_Date, slot)

Doctor (d_ID, ppv_ID, staff_Name, phone_No, hospital_Name)

Nurse (n_ID, staff_Name, phone_No, hospital_Name)

Center (ppv_ID, p_ID, ppv_Name, app_Date)

Police (no_ID, ppv_ID, staff_Name, phone_No, station_Name)

Volunteer (v_ID, staff_Name, phone_No, ppv_ID, home_Address)

Certificate (batch_No, p_ID, ppv_ID, vac_Type, app_Date, vac_Status)

Patient (p_ID, p_Name, p_DOB, phone_No, p_Address, p_Age)

All Functional Dependencies

Fully Functional Dependencies

vac_No , ppv_ID, batch_No \longrightarrow p_Id

Partial Dependencies

p_ID \longrightarrow ppv_ID ,ppv_Name, app_Date, staff_Name, phone_No, home_Address,
station_Name, hospital_Name, n_ID, d_ID, vac_Type, vac_Status, batch_No, slot

Transitive Dependencies

c_ID \longrightarrow C_Name, p_Name, c_address, office_No

vac_No \longrightarrow vac_Type, batch_No

batch_No \longrightarrow vac_Status, vac_Type, app_Date

SQL COMMAND: DDL & DML

SQL COMMAND (CREATE DATABASE AND TABLE)

- **CREATE DATABASE**

CREATE database myvax;

USE myvax;

```
mysql> create database MyVax;
Query OK, 1 row affected (0.04 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql          |
| myvax          |
| performance_schema |
| sakila         |
| sys           |
| world          |
+-----+
7 rows in set (0.00 sec)

mysql> use MyVax;
Database changed
```

- **CREATE TABLES**

CREATE TABLE PATIENT

```
create table Patient
(
  p_ID varchar(10) not null primary key,
  p_Name varchar(50),
  phone_No int,
  p_DOB date,
  p_Age int
);
```

```
mysql> create table Patient
-> (
-> p_ID varchar(10) not null primary key,
-> p_Name varchar(50),
-> phone_No int,
-> p_DOB date,
-> p_Age int
-> );
Query OK, 0 rows affected (0.03 sec)
```

CREATE TABLE VACCINE

```
create table Vaccine
(
  vac_No int not null primary key,
  p_ID varchar(10),
  vac_Type varchar(20),
  batch_No int,
  foreign key (p_ID) references patient(p_ID)
);
```

```
mysql> create table Vaccine
-> (
-> vac_No int not null primary key,
-> p_ID varchar(10),
-> vac_Type varchar(20),
-> batch_No int,
-> foreign key (p_ID) references patient(p_ID)
-> );
Query OK, 0 rows affected (0.10 sec)
```

CREATE TABLE APPOINTMENT

```
create table Appointment
(
  p_ID varchar (10) not null primary key,
  ppv_ID varchar (10),
  app_Date date,
  slot time,
  foreign key (p_ID) references patient (p_ID)
);
```

```
mysql> create table Appointment
-> (
-> p_ID varchar (10) not null primary key,
-> ppv_ID varchar (10),
-> app_Date date,
-> slot time,
-> foreign key (p_ID) references patient (p_ID)
-> );
Query OK, 0 rows affected (1.46 sec)
```

CREATE TABLE COMPANY

```
create table Company
(
  c_ID varchar(10),
  p_ID varchar(10) not null primary key,
  c_Name varchar(50),
  p_Name varchar(50),
  c_Address varchar(100),
  office_No int,
  foreign key (p_ID) references patient(p_ID)
);
```

```
mysql> create table Company
-> (
-> c_ID varchar(10),
-> p_ID varchar(10) not null primary key,
-> c_Name varchar(50),
-> p_Name varchar(50),
-> c_Address varchar(100),
-> office_No int,
-> foreign key (p_ID) references patient(p_ID)
-> );
Query OK, 0 rows affected (0.07 sec)
```

CREATE TABLE CERTIFICATE

```
_____create table certificate  
  
(  
    batch_NO int not null primary key,  
    p_ID varchar(10),  
    ppv_ID varchar(10),  
    vac_Type varchar(20),  
    app_Date date,  
    vac_Status varchar(20)  
);
```

```
mysql> create table certificate  
-> (  
-> batch_NO int not null primary key,  
-> p_ID varchar(10),  
-> ppv_ID varchar(10),  
-> vac_Type varchar(20),  
-> app_Date date,  
-> vac_Status varchar(20)  
-> );  
Query OK, 0 rows affected (0.13 sec)
```

CREATE TABLE CENTER

```
create table Center  
  
(  
    ppv_ID varchar (10),  
    p_ID varchar (10) not null primary key,  
    ppv_Name varchar (50),  
    app_Date date,  
    foreign key (p_ID) references patient(p_ID)  
);
```

```
mysql> create table Center  
-> (  
-> ppv_ID varchar (10),  
-> p_ID varchar (10) not null primary key,  
-> ppv_Name varchar (50),  
-> app_Date date,  
-> foreign key (p_ID) references patient(p_ID)  
-> );  
Query OK, 0 rows affected (1.15 sec)
```


CREATE TABLE DOCTOR

```
create table Doctor
(
d_ID varchar(10) not null primary key,
ppv_ID varchar(10),
staff_Name varchar(50),
phone_No int,
hospital_Name varchar(100)
);
```

```
mysql> create table Doctor
-> (
-> d_ID varchar(10) not null primary key,
-> ppv_ID varchar(10),
-> staff_Name varchar(50),
-> phone_No int,
-> hospital_Name varchar(100)
-> );
Query OK, 0 rows affected (0.03 sec)
```

CREATE TABLE NURSE

```
create table Nurse
(
n_ID varchar(10) not null primary key,
ppv_ID varchar(10),
staff_Name varchar(50),
phone_No int,
hospital_Name varchar(100)
);
```

```
mysql> create table Nurse
-> (
-> n_ID varchar(10) not null primary key,
-> ppv_ID varchar(10),
-> staff_Name varchar(50),
-> phone_No int,
-> hospital_Name varchar(100)
-> );
Query OK, 0 rows affected (0.07 sec)
```

CREATE TABLE VOLUNTEER

```
create table Volunteer  
(  
v_ID varchar (10) not null primary key,  
ppv_ID varchar (10),  
staff_Name varchar (50),  
phone_No int,  
home_Address varchar (100)  
);
```

```
mysql> create table Volunteer  
-> (  
-> v_ID varchar (10) not null primary key,  
-> ppv_ID varchar (10),  
-> staff_Name varchar (50),  
-> phone_No int,  
-> home_Address varchar (100)  
-> );  
Query OK, 0 rows affected (1.08 sec)
```

CREATE TABLE POLICE

```
create table Police  
(  
po_ID varchar (10) not null primary key,  
ppv_ID varchar (10),  
staff_Name varchar (50),  
phone_No int,  
station_Name varchar (100)  
);
```

```
mysql> create table Police  
-> (  
-> po_ID varchar (10) not null primary key,  
-> ppv_ID varchar (10),  
-> staff_Name varchar (50),  
-> phone_No int,  
-> station_Name varchar (100)  
-> );  
Query OK, 0 rows affected (0.52 sec)
```

- **INSERT RECORDS & VIEW TABLES**

INSERT PATIENT

insert into patient values

```
( '103','Muhammad Hafiz Bin Husaini','0177260176','2002-1-26','20'),
( '104','Rusaini Ukhlimah Binti Roslan','01132874928','1997-4-17','25'),
( '105','Muhammad Nazirul Bin Azfar','01183974646','1995-1-17','27'),
( '106','Siti Rohana Binti Azman','01874342134','1991-4-23','31'),
( '107','Nur Aishah Binti Johari','01792367891','2001-3-28','21'),
( '108','Ahmad Fakrul Bin Mael','01325565178','1994-7-15','28'),
( '109','Natasha Binti Mohd Bakri','01151617730','1998-4-1','24'),
( '110','Saiful Ali Bin Saifuddin','01129277028','2000-7-5','22'),
( '111','Alia Batrisya Binti Kamaruddin','01121943796','1995-11-9','27'),
( '112','Mohamed Ismail Bin Rahim','01128933088','1993-3-4','29'),
( '113','Zuehyra Binti Ariff','01159658680','1990-6-27','32'),
( '114','Hasmah Bin Zulkifli','01898740902','2002-8-3','20'),
( '115','Ku Naim Bin Ku Wahab','01951661645','1997-12-9','25'),
( '116','Cheong Li Chiy','01990312838','1998-5-5','24'),
( '117','Pavitra A/P Manimaharan','01722252288','2000-1-31','22'),
( '118','Nurul Syahirah Binti Roslan','01693377521','1991-2-28','31'),
( '119','Nur Balqis Binti Zahri','01673411877','2001-9-11','21'),
( '120','Alia Syaheera Binti Johari','01460875176','1996-4-15','26'),
( '121','Thennish A/L Vertival','01340355584','1993-4-26','29'),
( '122','Esther Look Kher Shein','01221797383','2001-6-27','21')
;
```

```
mysql> insert into patient values
-> ( '103','Muhammad Hafiz Bin Husaini','0177260176','2002-1-26','20'),
-> ( '104','Rusaini Ukhlimah Binti Roslan','01132874928','1997-4-17','25'),
-> ( '105','Muhammad Nazirul Bin Azfar','01183974646','1995-1-17','27'),
-> ( '106','Siti Rohana Binti Azman','01874342134','1991-4-23','31'),
-> ( '107','Nur Aishah Binti Johari','01792367891','2001-3-28','21'),
-> ( '108','Ahmad Fakrul Bin Mael','01325565178','1994-7-15','28'),
-> ( '109','Natasha Binti Mohd Bakri','01151617730','1998-4-1','24'),
-> ( '110','Saiful Ali Bin Saifuddin','01129277028','2000-7-5','22'),
-> ( '111','Alia Batrisya Binti Kamaruddin','01121943796','1995-11-9','27'),
-> ( '112','Mohamed Ismail Bin Rahim','01128933088','1993-3-4','29'),
-> ( '113','Zuehyra Binti Ariff','01159658680','1990-6-27','32'),
-> ( '114','Hasmah Bin Zulkifli','01898740902','2002-8-3','20'),
-> ( '115','Ku Naim Bin Ku Wahab','01951661645','1997-12-9','25'),
-> ( '116','Cheong Li Chiy','01990312838','1998-5-5','24'),
-> ( '117','Pavitra A/P Manimaharan','01722252288','2000-1-31','22'),
-> ( '118','Nurul Syahirah Binti Roslan','01693377521','1991-2-28','31'),
-> ( '119','Nur Balqis Binti Zahri','01673411877','2001-9-11','21'),
-> ( '120','Alia Syaheera Binti Johari','01460875176','1996-4-15','26'),
-> ( '121','Thennish A/L Vertival','01340355584','1993-4-26','29'),
-> ( '122','Esther Look Kher Shein','01221797383','2001-6-27','21')
-> ;
Query OK, 20 rows affected (0.01 sec)
Records: 20 Duplicates: 0 Warnings: 0
```

INSERT VACCINE

```
insert into Vaccine values
('10328','103','Pfizer','1002300'),
('10478','104','Pfizer','1001288'),
('10549','105','Sinovac','2008373'),
('10637','106','Sinovac','2005178'),
('10738','107','Sinovac','2007389'),
('10827','108','Pfizer','1002789'),
('10946','109','Pfizer','1003759'),
('11216','110','AstraZeneca','3001782'),
('11332','111','Moderna','4001232'),
('11458','112','Pfizer','1004343'),
('11544','113','Pfizer','1005332'),
('11600','114','Sinovac','2009145'),
('11692','115','Sinovac','2004563'),
('11754','116','Pfizer','1006543'),
('11820','117','AstraZeneca','3004275'),
('11912','118','Moderna','4005432'),
('12100','119','Pfizer','1006543'),
('12124','120','Moderna','4009591'),
('12495','121','AstraZeneca','3008676'),
('12596','122','Pfizer','1004954')
;
```

```
mysql> insert into Vaccine values
-> ('10328','103','Pfizer','1002300'),
-> ('10478','104','Pfizer','1001288'),
-> ('10549','105','Sinovac','2008373'),
-> ('10637','106','Sinovac','2005178'),
-> ('10738','107','Sinovac','2007389'),
-> ('10827','108','Pfizer','1002789'),
-> ('10946','109','Pfizer','1003759'),
-> ('11216','110','AstraZeneca','3001782'),
-> ('11332','111','Moderna','4001232'),
-> ('11458','112','Pfizer','1004343'),
-> ('11544','113','Pfizer','1005332'),
-> ('11600','114','Sinovac','2009145'),
-> ('11692','115','Sinovac','2004563'),
-> ('11754','116','Pfizer','1006543'),
-> ('11820','117','AstraZeneca','3004275'),
-> ('11912','118','Moderna','4005432'),
-> ('12100','119','Pfizer','1006543'),
-> ('12124','120','Moderna','4009591'),
-> ('12495','121','AstraZeneca','3008676'),
-> ('12596','122','Pfizer','1004954')
-> ;
Query OK, 20 rows affected (0.00 sec)
Records: 20  Duplicates: 0  Warnings: 0
```

INSERT INTO APPOINTMENT

```
insert into appointment values
('103','ppvWPP','2021-12-17','09:30'),
('104','ppvWPP','2021-11-26','08:00'),
('105','ppvUM','2021-11-19','10:30'),
('106','ppvUM','2021-11-21','10:00'),
('107','ppvUM','2021-11-21','08:00'),
('108','ppvIM','2021-12-04','08:30'),
('109','ppvIM','2021-12-04','08:30'),
('110','ppvKangar','2021-12-06','11:00'),
('111','ppvUM','2021-11-21','08:30'),
('112','ppvBBB','2021-11-18','11:00'),
('113','ppvIM','2021-12-04','09:00'),
('114','ppvBBB','2021-11-18','11:00'),
('115','ppvKangar','2021-12-06','11:40'),
('116','ppvKangar','2021-12-06','11:40'),
('117','ppvUM','2021-11-21','10:00'),
('118','ppvBBB','2021-11-18','08:30'),
('119','ppvIM','2021-12-05','08:30'),
('120','ppvKangar','2021-12-06','11:40'),
('121','ppvWPP','2021-12-17','09:30'),
('122','ppvBBB','2021-12-22','08:30')
;
```

```
mysql> insert into appointment values
-> ('103','ppvWPP','2021-12-17','09:30'),
-> ('104','ppvWPP','2021-11-26','08:00'),
-> ('105','ppvUM','2021-11-19','10:30'),
-> ('106','ppvUM','2021-11-21','10:00'),
-> ('107','ppvUM','2021-11-21','08:00'),
-> ('108','ppvIM','2021-12-04','08:30'),
-> ('109','ppvIM','2021-12-04','08:30'),
-> ('110','ppvKangar','2021-12-06','11:00'),
-> ('111','ppvUM','2021-11-21','08:30'),
-> ('112','ppvBBB','2021-11-18','11:00'),
-> ('113','ppvIM','2021-12-04','09:00'),
-> ('114','ppvBBB','2021-11-18','11:00'),
-> ('115','ppvKangar','2021-12-06','11:40'),
-> ('116','ppvKangar','2021-12-06','11:40'),
-> ('117','ppvUM','2021-11-21','10:00'),
-> ('118','ppvBBB','2021-11-18','08:30'),
-> ('119','ppvIM','2021-12-05','08:30'),
-> ('120','ppvKangar','2021-12-06','11:40'),
-> ('121','ppvWPP','2021-12-17','09:30'),
-> ('122','ppvBBB','2021-12-22','08:30')
-> ;
Query OK, 20 rows affected (0.01 sec)
Records: 20  Duplicates: 0  Warnings: 0
```

INSERT COMPANY

insert into company values

('SBTECH', '103', 'Sandbox Tech SDN BHD', 'Muhammad Hafiz Bin Husaini', 'C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor', '0327242535'),

('SBTECH', '104', 'Sandbox Tech SDN BHD', 'Rusaini Ukhlimah Binti Roslan', 'C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor', '0327242535'),

('99SM', '105', '99 Speedmart 1175 Pusat Bandar Latania', 'Muhammad Nazirul Bin Azfar', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),

('99SM', '106', '99 Speedmart 1175 Pusat Bandar Latania', 'Siti Rohana Binti Azman', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),

('99SM', '107', '99 Speedmart 1175 Pusat Bandar Latania', 'Nur Aishah Binti Johari', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),

('TROP', '108', 'Tropical Coffee Shop', 'Ahmad Fakrul Bin Mael', '20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang', '0390281995'),

('TROP', '109', 'Tropical Coffee Shop', 'Natasha Binti Mohd Bakri', '20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang', '0390281995')

;

```
mysql> insert into company values
-> ('SBTECH', '103', 'Sandbox Tech SDN BHD', 'Muhammad Hafiz Bin Husaini', 'C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor', '0327242535'),
-> ('SBTECH', '104', 'Sandbox Tech SDN BHD', 'Rusaini Ukhlimah Binti Roslan', 'C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor', '0327242535'),
-> ('99SM', '105', '99 Speedmart 1175 Pusat Bandar Latania', 'Muhammad Nazirul Bin Azfar', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),
-> ('99SM', '106', '99 Speedmart 1175 Pusat Bandar Latania', 'Siti Rohana Binti Azman', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),
-> ('99SM', '107', '99 Speedmart 1175 Pusat Bandar Latania', 'Nur Aishah Binti Johari', 'No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor', '0333626863'),
-> ('TROP', '108', 'Tropical Coffee Shop', 'Ahmad Fakrul Bin Mael', '20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang', '0390281995'),
-> ('TROP', '109', 'Tropical Coffee Shop', 'Natasha Binti Mohd Bakri', '20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang', '0390281995')
-> ;
Query OK, 7 rows affected (0.00 sec)
Records: 7 Duplicates: 0 Warnings: 0
```

INSERT CERTIFICATE

insert into certificate values

```
('1002300','103','ppvWPP','Pfizer','2021-12-17','2nd dose'),
('1001288','104','ppvWPP','Pfizer','2021-11-26','1st dose'),
('2008373','105','ppvUM','Sinovac','2021-11-19','2nd dose'),
('2005178','106','ppvUM','Sinovac','2021-11-21','2nd dose'),
('2007389','107','ppvUM','Sinovac','2021-11-21','1st dose'),
('1002789','108','ppvIM','Pfizer','2021-12-4','1st dose'),
('1003759','109','ppvIM','Pfizer','2021-12-4','1st dose'),
('3001782','110','ppvKangar','AstraZeneca','2021-12-6','1st dose'),
('4001232','111','ppvUM','Moderna','2021-11-21','2nd dose'),
('1004343','112','ppvBBB','Pfizer','2021-11-18','1st dose'),
('1005332','113','ppvIM','Pfizer','2021-12-4','1st dose'),
('2009145','114','ppvBBB','Sinovac','2021-11-18','1st dose'),
('2004563','115','ppvKangar','Sinovac','2021-12-6','2nd dose'),
('3002341','116','ppvKangar','Pfizer','2021-12-6','1st dose'),
('3004275','117','ppvUM','AstraZeneca','2021-11-21','2nd dose'),
('4005432','118','ppvBBB','Moderna','2021-11-18','2nd dose'),
('1006543','119','ppvIM','Pfizer','2021-12-5','1st dose'),
('4009591','120','ppvKangar','Moderna','2021-12-6','2nd dose'),
('3008676','121','ppvWPP','AstraZeneca','2021-12-17','1st dose'),
('1004954','122','ppvBBB','Pfizer','2021-12-22','1st dose')
;
```

```
mysql> insert into certificate values
-> ('1002300','103','ppvWPP','Pfizer','2021-12-17','2nd dose'),
-> ('1001288','104','ppvWPP','Pfizer','2021-11-26','1st dose'),
-> ('2008373','105','ppvUM','Sinovac','2021-11-19','2nd dose'),
-> ('2005178','106','ppvUM','Sinovac','2021-11-21','2nd dose'),
-> ('2007389','107','ppvUM','Sinovac','2021-11-21','1st dose'),
-> ('1002789','108','ppvIM','Pfizer','2021-12-4','1st dose'),
-> ('1003759','109','ppvIM','Pfizer','2021-12-4','1st dose'),
-> ('3001782','110','ppvKangar','AstraZeneca','2021-12-6','1st dose'),
-> ('4001232','111','ppvUM','Moderna','2021-11-21','2nd dose'),
-> ('1004343','112','ppvBBB','Pfizer','2021-11-18','1st dose'),
-> ('1005332','113','ppvIM','Pfizer','2021-12-4','1st dose'),
-> ('2009145','114','ppvBBB','Sinovac','2021-11-18','1st dose'),
-> ('2004563','115','ppvKangar','Sinovac','2021-12-6','2nd dose'),
-> ('3002341','116','ppvKangar','Pfizer','2021-12-6','1st dose'),
-> ('3004275','117','ppvUM','AstraZeneca','2021-11-21','2nd dose'),
-> ('4005432','118','ppvBBB','Moderna','2021-11-18','2nd dose'),
-> ('1006543','119','ppvIM','Pfizer','2021-12-5','1st dose'),
-> ('4009591','120','ppvKangar','Moderna','2021-12-6','2nd dose'),
-> ('3008676','121','ppvWPP','AstraZeneca','2021-12-17','1st dose'),
-> ('1004954','122','ppvBBB','Pfizer','2021-12-22','1st dose')
-> ;
Query OK, 20 rows affected (0.00 sec)
Records: 20 Duplicates: 0 Warnings: 0
```


INSERT CENTER

insert into center values

```
('ppvWPP','103','Pusat Vaksin Putrajaya','2021-12-17'),
('ppvWPP','104','Pusat Vaksin Putrajaya','2021-11-26'),
('ppvUM','105','Pusat Vaksin Universiti Malaya','2021-11-19'),
('ppvUM','106','Pusat Vaksin Universiti Malaya','2021-11-21'),
('ppvUM','107','Pusat Vaksin Universiti Malaya','2021-11-21'),
('ppvIM','108','Pusat Vaksin Indera Mahkota','2021-12-04'),
('ppvIM','109','Pusat Vaksin Indera Mahkota','2021-12-04'),
('ppvKangar','110','Pusat Vaksin Kangar','2021-12-06'),
('ppvUM','111','Pusat Vaksin Universiti Malaya','2021-11-21'),
('ppvBBB','112','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
('ppvIM','113','Pusat Vaksin Indera Mahkota','2021-12-04'),
('ppvBBB','114','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
('ppvKangar','115','Pusat Vaksin Kangar','2021-12-06'),
('ppvKangar','116','Pusat Vaksin Kangar','2021-12-06'),
('ppvUM','117','Pusat Vaksin Universiti Malaya','2021-11-21'),
('ppvBBB','118','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
('ppvIM','119','Pusat Vaksin Indera Mahkota','2021-12-05'),
('ppvKangar','120','Pusat Vaksin Kangar','2021-12-06'),
('ppvWPP','121','Pusat Vaksin Putrajaya','2021-12-17'),
('ppvBBB','122','Pusat Vaksin Bandar Bayan Baru','2021-12-22')
;
```

```
mysql> insert into center values
-> ('ppvWPP','103','Pusat Vaksin Putrajaya','2021-12-17'),
-> ('ppvWPP','104','Pusat Vaksin Putrajaya','2021-11-26'),
-> ('ppvUM','105','Pusat Vaksin Universiti Malaya','2021-11-19'),
-> ('ppvUM','106','Pusat Vaksin Universiti Malaya','2021-11-21'),
-> ('ppvUM','107','Pusat Vaksin Universiti Malaya','2021-11-21'),
-> ('ppvIM','108','Pusat Vaksin Indera Mahkota','2021-12-04'),
-> ('ppvIM','109','Pusat Vaksin Indera Mahkota','2021-12-04'),
-> ('ppvKangar','110','Pusat Vaksin Kangar','2021-12-06'),
-> ('ppvUM','111','Pusat Vaksin Universiti Malaya','2021-11-21'),
-> ('ppvBBB','112','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
-> ('ppvIM','113','Pusat Vaksin Indera Mahkota','2021-12-04'),
-> ('ppvBBB','114','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
-> ('ppvKangar','115','Pusat Vaksin Kangar','2021-12-06'),
-> ('ppvKangar','116','Pusat Vaksin Kangar','2021-12-06'),
-> ('ppvUM','117','Pusat Vaksin Universiti Malaya','2021-11-21'),
-> ('ppvBBB','118','Pusat Vaksin Bandar Bayan Baru','2021-11-18'),
-> ('ppvIM','119','Pusat Vaksin Indera Mahkota','2021-12-05'),
-> ('ppvKangar','120','Pusat Vaksin Kangar','2021-12-06'),
-> ('ppvWPP','121','Pusat Vaksin Putrajaya','2021-12-17'),
-> ('ppvBBB','122','Pusat Vaksin Bandar Bayan Baru','2021-12-22')
-> ;
Query OK, 20 rows affected (0.00 sec)
Records: 20  Duplicates: 0  Warnings: 0
```


INSERT DOCTOR

insert into doctor values

('DS11936','ppvIM','Dr. Syuhadah', '0194943665','Hospital Tengku Ampuan Afzan'),

('DS11256','ppvUM','Dr.Nur Ain','0135612339','Kuala Lumpur General Hospital'),

('DS11046','ppvBBB','Dr.Ameer','0125361191','Hospital Bukit Mertajam'),

('DS11877','ppvKangar','Dr.Loke Jia Jin','01114435643','Hospital Tuanku Fauziah'),

('DS11803','ppvWPP','Dr.Tacha','01115678238','Hospital Putrajaya')

;

```
mysql> insert into doctor values
-> ('DS11936','ppvIM','Dr. Syuhadah', '0194943665','Hospital Tengku Ampuan Afzan'),
-> ('DS11256','ppvUM','Dr.Nur Ain','0135612339','Kuala Lumpur General Hospital'),
-> ('DS11046','ppvBBB','Dr.Ameer','0125361191','Hospital Bukit Mertajam'),
-> ('DS11877','ppvKangar','Dr.Loke Jia Jin','01114435643','Hospital Tuanku Fauziah'),
-> ('DS11803','ppvWPP','Dr.Tacha','01115678238','Hospital Putrajaya')
-> ;
Query OK, 5 rows affected (0.00 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

INSERT NURSE

insert into nurse values

('NS77629', 'ppvIM', 'Siti Nur Balqis', '0195674234', 'Hospital Tengku Ampuan Afzan'),

('NS77881', 'ppvUM', 'Nik Nur Ain', '01113757702', 'Kuala Lumpur General Hospital'),

('NS77156', 'ppvBBB', 'Alia Nabila', '0132163516', 'Hospital Bukit Mertajam'),

('NS77091', 'ppvKangar', 'Mohd Arif', '01115770740', 'Hospital Tuanku Fauziah'),

('NS77187', 'ppvWPP', 'Jamal', '0199272016', 'Hospital Putrajaya'),

('NS77671', 'ppvUM', 'Azirul Imran', '0193426753', 'Kuala Lumpur General Hospital')

;

```
mysql> insert into nurse values
-> ('NS77629', 'ppvIM', 'Siti Nur Balqis', '0195674234', 'Hospital Tengku Ampuan Afzan'),
-> ('NS77881', 'ppvUM', 'Nik Nur Ain', '01113757702', 'Kuala Lumpur General Hospital'),
-> ('NS77156', 'ppvBBB', 'Alia Nabila', '0132163516', 'Hospital Bukit Mertajam'),
-> ('NS77091', 'ppvKangar', 'Mohd Arif', '01115770740', 'Hospital Tuanku Fauziah'),
-> ('NS77187', 'ppvWPP', 'Jamal', '0199272016', 'Hospital Putrajaya'),
-> ('NS77671', 'ppvUM', 'Azirul Imran', '0193426753', 'Kuala Lumpur General Hospital')
-> ;
Query OK, 6 rows affected (0.01 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

INSERT VOLUNTEER

insert into volunteer values

('VS22014','ppvIM','Ain Atikah','01119812135','Lorong 1/2, Bandar Indra Mahkota, 21300 Kuantan, Pahang'),

('VS22961','ppvUM','Teng Man','0174123548','Unit no. B-06-12, PV12, Platinum Lake Condominium, No. 6 Jalan Langkawi Setapak 53300 Kuala Lumpur'),

('VS22618','ppvBBB','Devinaa','0124778152','8, Lorong Pinggiran Bertam 23 , Bertam Perdana 4,13200 Kepala Batas, Penang'),

('VS22974','ppvKangar','Putri Arina','0194883467','No. 30, Lorong 1, Taman Peladang Jaya, 02000 Kuala Perlis'),

('VS22745','ppvWPP','Connie','01115674825','No. 5, Presint 5, Jalan Abdul Rahman 20030 Dengkil, Putrajaya')

;

```
mysql> insert into volunteer values
-> ('VS22014','ppvIM','Ain Atikah','01119812135','Lorong 1/2, Bandar Indra Mahkota, 21300 Kuantan, Pahang'),
-> ('VS22961','ppvUM','Teng Man','0174123548','Unit no. B-06-12, PV12, Platinum Lake Condominium, No. 6 Jalan Langkawi Setapak 53300 Kuala Lumpur'),
-> ('VS22618','ppvBBB','Devinaa','0124778152','8, Lorong Pinggiran Bertam 23 , Bertam Perdana 4,13200 Kepala Batas, Penang'),
-> ('VS22974','ppvKangar','Putri Arina','0194883467','No. 30, Lorong 1, Taman Peladang Jaya, 02000 Kuala Perlis'),
-> ('VS22745','ppvWPP','Connie','01115674825','No. 5, Presint 5, Jalan Abdul Rahman 20030 Dengkil, Putrajaya')
-> ;
Query OK, 5 rows affected (0.00 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

INSERT POLICE

insert into police values

('PS44198','ppvIM','Tan Jun Wei','0133934758','Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia'),

('PS44298','ppvUM','Nik Mohd Fitri','0199970721','Ibu Pejabat Polis Kontinjen Kuala Lumpur Polis Diraja Malaysia'),

('PS44967','ppvBBB','Low Ka Chong','0169764709','Ibupejabat Polis Daerah Seberang Perai Tengah Polis Diraja Malaysia'),

('PS44017','ppvKangar','Moses Sanda','0179470740','Ibupejabat Polis Daerah Kangar Polis Diraja Malaysia'),

('PS44826','ppvWPP','Ng Hui Xin','01113754705','Ibupejabat Polis Daerah Putrajaya'),

('PS44354','ppvWPP','Asrul Amin','01113342376','Ibupejabat Polis Daerah Puchong'),

('PS44874','ppvWPP','Farha Ainina','01176873143','Ibupejabat Polis Daerah Puchong'),

('PS44986','ppvWPP','Abiyyah Nazihah','01976576505','Ibupejabat Polis Daerah Puchong')

;

```
mysql> insert into police values
-> ('PS44198','ppvIM','Tan Jun Wei','0133934758','Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia'),
-> ('PS44298','ppvUM','Nik Mohd Fitri','0199970721','Ibu Pejabat Polis Kontinjen Kuala Lumpur Polis Diraja Malaysia'),
-> ('PS44967','ppvBBB','Low Ka Chong','0169764709','Ibupejabat Polis Daerah Seberang Perai Tengah Polis Diraja Malaysia'),
-> ('PS44017','ppvKangar','Moses Sanda','0179470740','Ibupejabat Polis Daerah Kangar Polis Diraja Malaysia'),
-> ('PS44826','ppvWPP','Ng Hui Xin','01113754705','Ibupejabat Polis Daerah Putrajaya'),
-> ('PS44354','ppvWPP','Asrul Amin','01113342376','Ibupejabat Polis Daerah Puchong'),
-> ('PS44874','ppvWPP','Farha Ainina','01176873143','Ibupejabat Polis Daerah Puchong'),
-> ('PS44986','ppvWPP','Abiyyah Nazihah','01976576505','Ibupejabat Polis Daerah Puchong')
-> ;
Query OK, 8 rows affected (0.02 sec)
Records: 8 Duplicates: 0 Warnings: 0
```

PRINT CONTENT (USING SELECT *)

SELECT * FROM PATIENT;

```
mysql> select * from patient;
```

p_ID	p_Name	phone_No	p_DOB	p_Age
103	Muhammad Hafiz Bin Husaini	177260176	2002-01-26	20
104	Rusaini Ukhlimah Binti Roslan	1132874928	1997-04-17	25
105	Muhammad Nazirul Bin Azfar	1183974646	1995-01-17	27
106	Siti Rohana Binti Azman	1874342134	1991-04-23	31
107	Nur Aishah Binti Johari	1792367891	2001-03-28	21
108	Ahmad Fakrul Bin Mae'l	1325565178	1994-07-15	28
109	Natasha Binti Mohd Bakri	1151617730	1998-04-01	24
110	Saiful Ali Bin Saifuddin	1129277028	2000-07-05	22
111	Alia Batrisya Binti Kamaruddin	1121943796	1995-11-09	27
112	Mohamed Ismail Bin Rahim	1128933088	1993-03-04	29
113	Zuehyra Binti Ariff	1159658680	1990-06-27	32
114	Hasmah Bin Zulkifli	1898740902	2002-08-03	20
115	Ku Naim Bin Ku Wahab	1951661645	1997-12-09	25
116	Cheong Li Chiy	1990312838	1998-05-05	24
117	Pavitra A/P Manimaharan	1722252288	2000-01-31	22
118	Nurul Syahirah Binti Roslan	1693377521	1991-02-28	31
119	Nur Balqis Binti Zahri	1673411877	2001-09-11	21
120	Alia Syaheera Binti Johari	1460875176	1996-04-15	26
121	Thennish A/L Vertival	1340355584	1993-04-26	29
122	Esther Look Kher Shein	1221797383	2001-06-27	21

20 rows in set (0.00 sec)

SELECT * FROM VACCINE;

```
mysql> select * from vaccine;
```

vac_No	p_ID	vac_Type	batch_No
10328	103	Pfizer	1002300
10478	104	Pfizer	1001288
10549	105	Sinovac	2008373
10637	106	Sinovac	2005178
10738	107	Sinovac	2007389
10827	108	Pfizer	1002789
10946	109	Pfizer	1003759
11216	110	AstraZeneca	3001782
11332	111	Moderna	4001232
11458	112	Pfizer	1004343
11544	113	Pfizer	1005332
11600	114	Sinovac	2009145
11692	115	Sinovac	2004563
11754	116	Pfizer	1006543
11820	117	AstraZeneca	3004275
11912	118	Moderna	4005432
12100	119	Pfizer	1006543
12124	120	Moderna	4009591
12495	121	AstraZeneca	3008676
12596	122	Pfizer	1004954

20 rows in set (0.01 sec)

SELECT * FROM APPOINTMENT;

```
mysql> select * from appointment;
```

p_ID	ppv_ID	app_Date	slot
103	ppvWPP	2021-12-17	09:30:00
104	ppvWPP	2021-11-26	08:00:00
105	ppvUM	2021-11-19	10:30:00
106	ppvUM	2021-11-21	10:00:00
107	ppvUM	2021-11-21	08:00:00
108	ppvIM	2021-12-04	08:30:00
109	ppvIM	2021-12-04	08:30:00
110	ppvKangar	2021-12-06	11:00:00
111	ppvUM	2021-11-21	08:30:00
112	ppvBBB	2021-11-18	11:00:00
113	ppvIM	2021-12-04	09:00:00
114	ppvBBB	2021-11-18	11:00:00
115	ppvKangar	2021-12-06	11:40:00
116	ppvKangar	2021-12-06	11:40:00
117	ppvUM	2021-11-21	10:00:00
118	ppvBBB	2021-11-18	08:30:00
119	ppvIM	2021-12-05	08:30:00
120	ppvKangar	2021-12-06	11:40:00
121	ppvWPP	2021-12-17	09:30:00
122	ppvBBB	2021-12-22	08:30:00

20 rows in set (0.00 sec)

SELECT * FROM COMPANY;

```
mysql> select * from company;
```

c_ID	p_ID	c_Name	office_No	p_Name	c_Address
SBTECH	103	Sandbox Tech SDN BHD		Muhammad Hafiz Bin Husaini	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber
12, 63000 Cyberjaya, Selangor	327242535				
SBTECH	104	Sandbox Tech SDN BHD		Rusaini Ukhlimah Binti Roslan	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber
12, 63000 Cyberjaya, Selangor	327242535				
99SM	105	99 Speedmart	1175 Pusat Bandar Latania	Muhammad Nazirul Bin Azfar	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selan
gor		333626863			
99SM	106	99 Speedmart	1175 Pusat Bandar Latania	Siti Rohana Binti Azman	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selan
gor		333626863			
99SM	107	99 Speedmart	1175 Pusat Bandar Latania	Nur Aishah Binti Johari	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selan
gor		333626863			
TROP	108	Tropical Coffee Shop		Ahmad Fakrul Bin Mael	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang
		390281995			
TROP	109	Tropical Coffee Shop		Natasha Binti Mohd Bakri	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang
		390281995			

7 rows in set (0.04 sec)

SELECT * FROM CERTIFICATE;

```
mysql> select * from certificate;
```

batch_NO	p_ID	ppv_ID	vac_Type	app_Date	vac_Status
1001288	104	ppvWPP	Pfizer	2021-11-26	1st dose
1002300	103	ppvWPP	Pfizer	2021-12-17	2nd dose
1002789	108	ppvIM	Pfizer	2021-12-04	1st dose
1003759	109	ppvIM	Pfizer	2021-12-04	1st dose
1004343	112	ppvBBB	Pfizer	2021-11-18	1st dose
1004954	122	ppvBBB	Pfizer	2021-12-22	1st dose
1005332	113	ppvIM	Pfizer	2021-12-04	1st dose
1006543	119	ppvIM	Pfizer	2021-12-05	1st dose
2004563	115	ppvKangar	Sinovac	2021-12-06	2nd dose
2005178	106	ppvUM	Sinovac	2021-11-21	2nd dose
2007389	107	ppvUM	Sinovac	2021-11-21	1st dose
2008373	105	ppvUM	Sinovac	2021-11-19	2nd dose
2009145	114	ppvBBB	Sinovac	2021-11-18	1st dose
3001782	110	ppvKangar	AstraZeneca	2021-12-06	1st dose
3002341	116	ppvKangar	Pfizer	2021-12-06	1st dose
3004275	117	ppvUM	AstraZeneca	2021-11-21	2nd dose
3008676	121	ppvWPP	AstraZeneca	2021-12-17	1st dose
4001232	111	ppvUM	Moderna	2021-11-21	2nd dose
4005432	118	ppvBBB	Moderna	2021-11-18	2nd dose
4009591	120	ppvKangar	Moderna	2021-12-06	2nd dose

20 rows in set (0.04 sec)

SELECT * FROM CENTER;

```
mysql> select * from center;
```

ppv_ID	p_ID	ppv_Name	app_Date
ppvWPP	103	Pusat Vaksin Putrajaya	2021-12-17
ppvWPP	104	Pusat Vaksin Putrajaya	2021-11-26
ppvUM	105	Pusat Vaksin Universiti Malaya	2021-11-19
ppvUM	106	Pusat Vaksin Universiti Malaya	2021-11-21
ppvUM	107	Pusat Vaksin Universiti Malaya	2021-11-21
ppvIM	108	Pusat Vaksin Indera Mahkota	2021-12-04
ppvIM	109	Pusat Vaksin Indera Mahkota	2021-12-04
ppvKangar	110	Pusat Vaksin Kangar	2021-12-06
ppvUM	111	Pusat Vaksin Universiti Malaya	2021-11-21
ppvBBB	112	Pusat Vaksin Bandar Bayan Baru	2021-11-18
ppvIM	113	Pusat Vaksin Indera Mahkota	2021-12-04
ppvBBB	114	Pusat Vaksin Bandar Bayan Baru	2021-11-18
ppvKangar	115	Pusat Vaksin Kangar	2021-12-06
ppvKangar	116	Pusat Vaksin Kangar	2021-12-06
ppvUM	117	Pusat Vaksin Universiti Malaya	2021-11-21
ppvBBB	118	Pusat Vaksin Bandar Bayan Baru	2021-11-18
ppvIM	119	Pusat Vaksin Indera Mahkota	2021-12-05
ppvKangar	120	Pusat Vaksin Kangar	2021-12-06
ppvWPP	121	Pusat Vaksin Putrajaya	2021-12-17
ppvBBB	122	Pusat Vaksin Bandar Bayan Baru	2021-12-22

20 rows in set (0.00 sec)

SELECT * FROM DOCTOR;

```
mysql> select * from doctor;
```

d_ID	ppv_ID	staff_Name	phone_No	hospital_Name
DS11046	ppvBBB	Dr.Ameer	125361191	Hospital Bukit Mertajam
DS11256	ppvUM	Dr.Nur Ain	135612339	Kuala Lumpur General Hospital
DS11803	ppvWPP	Dr.Tacha	1115678238	Hospital Putrajaya
DS11877	ppvKangar	Dr.Loke Jia Jin	1114435643	Hospital Tuanku Fauziah
DS11936	ppvIM	Dr. Syuhadah	194943665	Hospital Tengku Ampuan Afzan

5 rows in set (0.00 sec)

SELECT * FROM NURSE;

```
mysql> select * from nurse;
```

n_ID	ppv_ID	staff_Name	phone_No	hospital_Name
NS77091	ppvKangar	Mohd Arif	1115770740	Hospital Tuanku Fauziah
NS77156	ppvBBB	Alia Nabila	132163516	Hospital Bukit Mertajam
NS77187	ppvWPP	Jamal	199272016	Hospital Putrajaya
NS77629	ppvIM	Siti Nur Balqis	195674234	Hospital Tengku Ampuan Afzan
NS77671	ppvUM	Azirul Imran	193426753	Kuala Lumpur General Hospital
NS77881	ppvUM	Nik Nur Ain	1113757702	Kuala Lumpur General Hospital

6 rows in set (0.00 sec)

SELECT * FROM VOLUNTEER;

```
mysql> select * from volunteer;
```

v_ID	ppv_ID	staff_Name	phone_No	home_Address
VS22014	ppvIM	Ain Atikah	1119812135	Lorong 1/2, Bandar Indra Mahkota, 21300 Kuantan, Pahang
VS22618	ppvBBB	Devinaa	124778152	8, Lorong Pinggiran Bertam 23 , Bertam Perdana 4,13200 Kepala Batas, Penang
VS22745	ppvWPP	Connie	1115674825	No. 5, Presint 5, Jalan Abdul Rahman 20030 Dengkil, Putrajaya
VS22961	ppvUM	Teng Man	174123548	Unit no. B-08-12, PVL2, Platinum Lake condominium, No. 6 Jalan Langkawi Setapak 53300 Kuala Lumpur
VS22974	ppvKangar	Putri Arina	194883467	No. 30, Lorong 1, Taman Peladang Jaya, 02000 Kuala Perlis

5 rows in set (0.00 sec)

SELECT * FROM POLICE;

```
mysql> select * from police;
```

po_ID	ppv_ID	staff_Name	phone_No	station_Name
PS44017	ppvKangar	Moses Sanda	179470740	Ibupejabat Polis Daerah Kangar Polis Diraja Malaysia
PS44198	ppvIM	Tan Jun Wei	133934758	Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia
PS44298	ppvUM	Nik Mohd Fitri	199970721	Ibu Pejabat Polis Kontinjen Kuala Lumpur Polis Diraja Malaysia
PS44354	ppvWPP	Asrul Amin	1113342376	Ibupejabat Polis Daerah Puchong
PS44826	ppvWPP	Ng Hui Xin	1113754705	Ibupejabat Polis Daerah Putrajaya
PS44874	ppvWPP	Farha Ainina	1176873143	Ibupejabat Polis Daerah Puchong
PS44967	ppvBBB	Low Ka Chong	169764709	Ibupejabat Polis Daerah Seberang Perai Tengah Polis Diraja Malaysia
PS44986	ppvWPP	Abiyyah Nazihah	1976576505	Ibupejabat Polis Daerah Puchong

8 rows in set (0.00 sec)

SQL COMMAND (ALTER AND DROP)

ALTER

BEFORE

ALTER TABLE patient;

```
mysql> ALTER TABLE patient;
Query OK, 0 rows affected (0.04 sec)

mysql> select * from patient;
```

p_ID	p_Name	phone_No	p_DOB	p_Age
103	Muhammad Hafiz Bin Husaini	177260176	2002-01-26	20
104	Rusaini Ukhlimah Binti Roslan	1132874928	1997-04-17	25
105	Muhammad Nazirul Bin Azfar	1183974646	1995-01-17	27
106	Siti Rohana Binti Azman	1874342134	1991-04-23	31
107	Nur Aishah Binti Johari	1792367891	2001-03-28	21
108	Ahmad Fakrul Bin Mael	1325565178	1994-07-15	28
109	Natasha Binti Mohd Bakri	1151617730	1998-04-01	24
110	Saiful Ali Bin Saifuddin	1129277028	2000-07-05	22
111	Alia Batrisya Binti Kamaruddin	1121943796	1995-11-09	27
112	Mohamed Ismail Bin Rahim	1128933088	1993-03-04	29
113	Zuehyra Binti Ariff	1159658680	1990-06-27	32
114	Hasmah Bin Zulkifli	1898740902	2002-08-03	20
115	Ku Naim Bin Ku Wahab	1951661645	1997-12-09	25
116	Cheong Li Chiy	1990312838	1998-05-05	24
117	Pavitra A/P Manimaharan	1722252288	2000-01-31	22
118	Nurul Syahirah Binti Roslan	1693377521	1991-02-28	31
119	Nur Balqis Binti Zahri	1673411877	2001-09-11	21
120	Alia Syaheera Binti Johari	1460875176	1996-04-15	26
121	Thennish A/L Vertival	1340355584	1993-04-26	29
122	Esther Look Kher Shein	1221797383	2001-06-27	21

20 rows in set (0.00 sec)

AFTER

ALTER TABLE patient

ADD COLUMN p_Address varchar(100) AFTER p_DOB;

```
mysql> ALTER TABLE patient
-> ADD COLUMN p_Address varchar(100) AFTER p_DOB;
Query OK, 0 rows affected (0.20 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from patient;
```

p_ID	p_Name	phone_No	p_DOB	p_Address	p_Age
103	Muhammad Hafiz Bin Husaini	177260176	2002-01-26	NULL	20
104	Rusaini Ukhlimah Binti Roslan	1132874928	1997-04-17	NULL	25
105	Muhammad Nazirul Bin Azfar	1183974646	1995-01-17	NULL	27
106	Siti Rohana Binti Azman	1874342134	1991-04-23	NULL	31
107	Nur Aishah Binti Johari	1792367891	2001-03-28	NULL	21
108	Ahmad Fakrul Bin Mael	1325565178	1994-07-15	NULL	28
109	Natasha Binti Mohd Bakri	1151617730	1998-04-01	NULL	24
110	Saiful Ali Bin Saifuddin	1129277028	2000-07-05	NULL	22
111	Alia Batrisya Binti Kamaruddin	1121943796	1995-11-09	NULL	27
112	Mohamed Ismail Bin Rahim	1128933088	1993-03-04	NULL	29
113	Zuehyra Binti Ariff	1159658680	1990-06-27	NULL	32
114	Hasmah Bin Zulkifli	1898740902	2002-08-03	NULL	20
115	Ku Naim Bin Ku Wahab	1951661645	1997-12-09	NULL	25
116	Cheong Li Chiy	1990312838	1998-05-05	NULL	24
117	Pavitra A/P Manimaharan	1722252288	2000-01-31	NULL	22
118	Nurul Syahirah Binti Roslan	1693377521	1991-02-28	NULL	31
119	Nur Balqis Binti Zahri	1673411877	2001-09-11	NULL	21
120	Alia Syaheera Binti Johari	1460875176	1996-04-15	NULL	26
121	Thennish A/L Vertival	1340355584	1993-04-26	NULL	29
122	Esther Look Kher Shein	1221797383	2001-06-27	NULL	21

20 rows in set (0.00 sec)

DROP

BEFORE

```
mysql> drop table doctor;
Query OK, 0 rows affected (0.03 sec)

mysql> create table Doctor
-> (
-> d_ID varchar(10) not null primary key,
-> ppv_ID varchar(10),
-> staff_Name varchar(50),
-> phone_No int,
-> hospital_Name varchar(100)
-> );
Query OK, 0 rows affected (0.08 sec)

mysql> insert into doctor values
-> ('DS11936','ppvIM','Dr. Syuhadah','0194943665','Hospital Tengku Ampuan Afzan'),
-> ('DS11256','ppvUM','Dr.Nur Ain','0135612339','Kuala Lumpur General Hospital'),
-> ('DS11046','ppvBBB','Dr.Ameer','0125361191','Hospital Bukit Mertajam'),
-> ('DS11877','ppvKangar','Dr.Loke Jia Jin','01114435643','Hospital Tuanku Fauziah'),
-> ('DS11803','ppvWPP','Dr.Tacha','01115678238','Hospital Putrajaya')
-> ;
Query OK, 5 rows affected (0.04 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> select * from doctor;
+-----+-----+-----+-----+-----+
| d_ID | ppv_ID | staff_Name | phone_No | hospital_Name |
+-----+-----+-----+-----+-----+
| DS11046 | ppvBBB | Dr.Ameer | 125361191 | Hospital Bukit Mertajam |
| DS11256 | ppvUM | Dr.Nur Ain | 135612339 | Kuala Lumpur General Hospital |
| DS11803 | ppvWPP | Dr.Tacha | 1115678238 | Hospital Putrajaya |
| DS11877 | ppvKangar | Dr.Loke Jia Jin | 1114435643 | Hospital Tuanku Fauziah |
| DS11936 | ppvIM | Dr. Syuhadah | 194943665 | Hospital Tengku Ampuan Afzan |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

AFTER

DROP TABLE doctor;

```
mysql> drop table doctor;
Query OK, 0 rows affected (0.06 sec)

mysql> select * from doctor;
ERROR 1146 (42S02): Table 'myvax.doctor' doesn't exist
mysql>
```

BEFORE

```
mysql> select * from company;
```

c_ID	p_ID	c_Name	office_No	p_Name	c_Address
SBTECH	103	Sandbox Tech SDN BHD		Muhammad Hafiz Bin Husaini	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor
SBTECH	104	Sandbox Tech SDN BHD		Rusaini Ukhlimah Binti Roslan	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor
99SM	105	99 Speedmart	1175 Pusat Bandar Latania	Muhammad Nazirul Bin Azfar	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
99SM	106	99 Speedmart	1175 Pusat Bandar Latania	Siti Rohana Binti Azman	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
99SM	107	99 Speedmart	1175 Pusat Bandar Latania	Nur Aishah Binti Johari	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
TROP	108	Tropical Coffee Shop		Ahmad Fakrul Bin Maei	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang
TROP	109	Tropical Coffee Shop		Natasha Binti Mohd Bakri	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang

```
7 rows in set (0.04 sec)
```

AFTER

ALTER TABLE company
DROP COLUMN p_Name;

```
mysql> ALTER TABLE company  
-> DROP COLUMN p_Name;  
Query OK, 0 rows affected (0.10 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from company;
```

c_ID	p_ID	c_Name	office_No	c_Address
SBTECH	103	Sandbox Tech SDN BHD		C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor
SBTECH	104	Sandbox Tech SDN BHD		C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor
99SM	105	99 Speedmart	1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
99SM	106	99 Speedmart	1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
99SM	107	99 Speedmart	1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor
TROP	108	Tropical Coffee Shop		20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang
TROP	109	Tropical Coffee Shop		20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang

```
7 rows in set (0.00 sec)
```

SQL COMMAND (DML & DDL)

1. SELECT

- a. Display patient ID, patient name, patient date of birth, and patient age from patient table, sorted by patient age in descending order.

```
mysql> SELECT p_ID, p_Name, p_DOB, p_Age from patient
-> order by p_Age desc
-> ;
```

```
mysql> SELECT p_ID, p_Name, p_DOB, p_Age from patient
-> order by p_Age desc
-> ;
```

p_ID	p_Name	p_DOB	p_Age
113	Zuehyra Binti Ariff	1990-06-27	32
106	Siti Rohana Binti Azman	1991-04-23	31
118	Nurul Syahirah Binti Roslan	1991-02-28	31
112	Mohamed Ismail Bin Rahim	1993-03-04	29
121	Thennish A/L Vertival	1993-04-26	29
108	Ahmad Fakrul Bin Mael	1994-07-15	28
105	Muhammad Nazirul Bin Azfar	1995-01-17	27
111	Alia Batrisya Binti Kamaruddin	1995-11-09	27
120	Alia Syaheera Binti Johari	1996-04-15	26
104	Rusaini Ukhlimah Binti Roslan	1997-04-17	25
115	Ku Naim Bin Ku Wahab	1997-12-09	25
109	Natasha Binti Mohd Bakri	1998-04-01	24
116	Cheong Li Chi	1998-05-05	24
110	Saiful Ali Bin Saifuddin	2000-07-05	22
117	Pavitra A/P Manimaharan	2000-01-31	22
107	Nur Aishah Binti Johari	2001-03-28	21
119	Nur Balqis Binti Zahri	2001-09-11	21
122	Esther Look Kher Shein	2001-06-27	21
103	Muhammad Hafiz Bin Husaini	2002-01-26	20
114	Hasmah Bin Zulkifli	2002-08-03	20

20 rows in set (0.00 sec)

- b. Display patient name, ppv name, appointment date, and slot time for patients based on patient ID.

```
mysql> SELECT p.p_Name, c.ppv_Name, a.app_Date, a.slot
-> from patient p, center c, appointment a
-> where p.p_ID=c.p_ID
-> and p.p_ID=a.p_ID
-> ;
```

```
mysql> SELECT p.p_Name, c.ppv_Name, a.app_Date, a.slot
-> from patient p, center c, appointment a
-> where p.p_ID=c.p_ID
-> and p.p_ID=a.p_ID
-> ;
```

p_Name	ppv_Name	app_Date	slot
Muhammad Hafiz Bin Husaini	Pusat Vaksin Putrajaya	2021-12-17	09:30:00
Rusaini Ukhlimah Binti Roslan	Pusat Vaksin Putrajaya	2021-11-26	08:00:00
Muhammad Nazirul Bin Azfar	Pusat Vaksin Universiti Malaya	2021-11-19	10:30:00
Siti Rohana Binti Azman	Pusat Vaksin Universiti Malaya	2021-11-21	10:00:00
Nur Aishah Binti Johari	Pusat Vaksin Universiti Malaya	2021-11-21	08:00:00
Ahmad Fakrul Bin Mael	Pusat Vaksin Indera Mahkota	2021-12-04	08:30:00
Natasha Binti Mohd Bakri	Pusat Vaksin Indera Mahkota	2021-12-04	08:30:00
Saiful Ali Bin Saifuddin	Pusat Vaksin Kangar	2021-12-06	11:00:00
Alia Batrisya Binti Kamaruddin	Pusat Vaksin Universiti Malaya	2021-11-21	08:30:00
Mohamed Ismail Bin Rahim	Pusat Vaksin Bandar Bayan Baru	2021-11-18	11:00:00
Zuehyra Binti Ariff	Pusat Vaksin Indera Mahkota	2021-12-04	09:00:00
Hasmah Bin Zulkifli	Pusat Vaksin Bandar Bayan Baru	2021-11-18	11:00:00
Ku Naim Bin Ku Wahab	Pusat Vaksin Kangar	2021-12-06	11:40:00
Cheong Li Chi	Pusat Vaksin Kangar	2021-12-06	11:40:00
Pavitra A/P Manimaharan	Pusat Vaksin Universiti Malaya	2021-11-21	10:00:00
Nurul Syahirah Binti Roslan	Pusat Vaksin Bandar Bayan Baru	2021-11-18	08:30:00
Nur Balqis Binti Zahri	Pusat Vaksin Indera Mahkota	2021-12-05	08:30:00
Alia Syaheera Binti Johari	Pusat Vaksin Kangar	2021-12-06	11:40:00
Thennish A/L Vertival	Pusat Vaksin Putrajaya	2021-12-17	09:30:00
Esther Look Kher Shein	Pusat Vaksin Bandar Bayan Baru	2021-12-22	08:30:00

20 rows in set (0.05 sec)

2. UPDATE

- a. Update p_Address for null values in table patient.

```
mysql> UPDATE patient  
-> set p_Address = 'A-G-20 CoPlace 2, Jalan Usahawan 1, 63000 Cyberjaya,  
Selangor.'  
-> where p_ID = '103';
```

```
mysql> UPDATE patient  
-> set p_Address = '34, Wisma Suria, Jalan Teknokrat 6, 63000 Cyberjaya,  
Selangor.'  
-> where p_ID = '104';
```

```
mysql> UPDATE patient  
-> set p_Address = 'No 10, Jalan Alisa 36/33, Taman Sungai Kandis, 40470  
Shah Alam, Selangor.'  
-> where p_ID = '105';
```

```
mysql> UPDATE patient  
-> set p_Address = '18, Jalan Anggerik Malaxis 31/173, Kota Kemuning, 40460  
Shah Alam, Selangor.'  
-> where p_ID = '106';
```

```
mysql> UPDATE patient  
-> set p_Address = '30, Jalan Nagasari A/36, Desa Latania, 40470 Shah Alam,  
Selangor.'  
-> where p_ID = '107';
```

```
mysql> UPDATE patient  
-> set p_Address = '881, Jalan Air Putih, Taman Imbi, 25300 Kuantan,  
Pahang.'  
-> where p_ID = '108';
```

```
mysql> UPDATE patient  
-> set p_Address = 'A393, Jalan Beserah, Taman Sri Kuantan, 25300 Kuantan,  
Pahang.'  
-> where p_ID = '109';
```

```
mysql> UPDATE patient  
-> set p_Address = '16, Jalan Raja Syed Alwi, Kampung Guar Syed Alwi,  
01000 Kangar, Perlis'  
-> where p_ID = '110';
```

```
mysql> UPDATE patient  
-> set p_Address = 'H-52-G Palma, Jalan Serai Wangi 16, 40200 Shah Alam,  
Selangor.'  
-> where p_ID = '111';
```

```

mysql> UPDATE patient
-> set p_Address = 'No 10, Jalan Tar, Piazza Mall, 11900 Bayan Lepas, Pulau
Pinang.'
-> where p_ID = '112';

mysql> UPDATE patient
-> set p_Address = 'No 1/44585, Lorong Meranti, Kg Kempadang, 25150,
Kuantan, Pahang.'
-> where p_ID = '113';

mysql> UPDATE patient
-> set p_Address = '12G, Lorong Mahsuri 5, Bandar Bayan Baru, 11900 Bayan
Lepas, Pulau Pinang.'
-> where p_ID = '114';

mysql> UPDATE patient
-> set p_Address = 'No 44, Bumbung Lima, Arau, 02600 Arau, Perlis.'
-> where p_ID = '115';

mysql> UPDATE patient
-> set p_Address = '5, Jalan Sena Indah, Taman Sena Indah, 01000 Kangar,
Perlis.'
-> where p_ID = '116';

mysql> UPDATE patient
-> set p_Address = '105, Jalan 51A/223, Seksyen 51A, 46100 Petaling Jaya,
Selangor.'
-> where p_ID = '117';

mysql> UPDATE patient
-> set p_Address = 'No 3, Jalan Bukit Jambul, Bukit Jambul, 11900 Bayan
Lepas, Pulau Pinang.'
-> where p_ID = '118';

mysql> UPDATE patient
-> set p_Address = 'No 8 Jalan Indera Mahkota 2/1, Bandar Indera Mahkota
Jaya, 25200 Kuantan, Pahang.'
-> where p_ID = '119';

mysql> UPDATE patient
-> set p_Address = 'No 8, Jalan Santan, Taman Puteri Putri, 01000 Kangar,
Perlis.'
-> where p_ID = '120';

mysql> UPDATE patient
-> set p_Address = '46, Shaftsbury Putrajaya, Jalan Alamanda Presint 1,
62000 Putrajaya, WPP.'
-> where p_ID = '121';

```

mysql> UPDATE patient

-> set p_Address = 'No 28, Lebuhr Relau 2, Taman Desa Relau, 11900 Bayan Lepas, Pulau Pinang.'

-> where p_ID = '122';

BEFORE

```
mysql> ALTER TABLE patient
-> ADD COLUMN p_Address varchar(100) AFTER p_DOB;
Query OK, 0 rows affected (0.20 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select * from patient;
```

p_ID	p_Name	phone_No	p_DOB	p_Address	p_Age
103	Muhammad Hafiz Bin Husaini	177260176	2002-01-26	NULL	20
104	Rusaini Ukhlimah Binti Roslan	1132874928	1997-04-17	NULL	25
105	Muhammad Nazirul Bin Azfar	1183974646	1995-01-17	NULL	27
106	Siti Rohana Binti Azman	1874342134	1991-04-23	NULL	31
107	Nur Aishah Binti Johari	1792367891	2001-03-28	NULL	21
108	Ahmad Fakrul Bin Mael	1325565178	1994-07-15	NULL	28
109	Natasha Binti Mohd Bakri	1151617730	1998-04-01	NULL	24
110	Saiful Ali Bin Saifuddin	1129277028	2000-07-05	NULL	22
111	Alia Batrisya Binti Kamaruddin	1121943796	1995-11-09	NULL	27
112	Mohamed Ismail Bin Rahim	1128933088	1993-03-04	NULL	29
113	Zuehyra Binti Ariff	1159658680	1990-06-27	NULL	32
114	Hasmah Bin Zulkifli	1898740902	2002-08-03	NULL	20
115	Ku Naim Bin Ku Wahab	1951661645	1997-12-09	NULL	25
116	Cheong Li Chiy	1990312838	1998-05-05	NULL	24
117	Pavitra A/P Manimaharan	1722252288	2000-01-31	NULL	22
118	Nurul Syahirah Binti Roslan	1693377521	1991-02-28	NULL	31
119	Nur Balqis Binti Zahri	1673411877	2001-09-11	NULL	21
120	Alia Syaheera Binti Johari	1460875176	1996-04-15	NULL	26
121	Thennish A/L Vertival	1340355584	1993-04-26	NULL	29
122	Esther Look Kher Shein	1221797383	2001-06-27	NULL	21

20 rows in set (0.00 sec)

AFTER

```
mysql> select * from patient;
```

p_ID	p_Name	phone_No	p_DOB	p_Address	p_Age
103	Muhammad Hafiz Bin Husaini	177260176	2002-01-26	A-G-20 CoPlace 2, Jalan Usahawan 1, 63000 Cyberjaya, Selangor.	20
104	Rusaini Ukhlimah Binti Roslan	1132874928	1997-04-17	34, Wisma Suria, Jalan Teknokrat 6, 63000 Cyberjaya, Selangor.	25
105	Muhammad Nazirul Bin Azfar	1183974646	1995-01-17	No 10, Jalan Alisa 36/33, Taman Sungai Kandis, 40470 Shah Alam, Selangor.	27
106	Siti Rohana Binti Azman	1874342134	1991-04-23	18, Jalan Anggerik Malaxis 31/173, Kota Kemuning, 40460 Shah Alam, Selangor.	31
107	Nur Aishah Binti Johari	1792367891	2001-03-28	30, Jalan Nagasari A/36, Desa Latania, 40470 Shah Alam, Selangor.	21
108	Ahmad Fakrul Bin Mael	1325565178	1994-07-15	881, Jalan Air Putih, Taman Imbi, 25300 Kuantan, Pahang.	28
109	Natasha Binti Mohd Bakri	1151617730	1998-04-01	A393, Jalan Beserah, Taman Sri Kuantan, 25300 Kuantan, Pahang.	24
110	Saiful Ali Bin Saifuddin	1129277028	2000-07-05	16, Jalan Raja Syed Alwi, Kampung Guar Syed Alwi, 01000 Kangar, Perlis.	22
111	Alia Batrisya Binti Kamaruddin	1121943796	1995-11-09	H-52-G Palma, Jalan Serai Wangi 16, 40200 Shah Alam, Selangor.	27
112	Mohamed Ismail Bin Rahim	1128933088	1993-03-04	No 10, Jalan Tar, Piazza Mall, 11900 Bayan Lepas, Pulau Pinang.	29
113	Zuehyra Binti Ariff	1159658680	1990-06-27	No 1/44585, Lorong Meranti, Kg Kempadang, 25150, Kuantan, Pahang.	32
114	Hasmah Bin Zulkifli	1898740902	2002-08-03	12G, Lorong Mahsuri 5, Bandar Bayan Baru, 11900 Bayan Lepas, Pulau Pinang.	20
115	Ku Naim Bin Ku Wahab	1951661645	1997-12-09	No 44, Bumbung Lima, Arau, 02600 Arau, Perlis.	25
116	Cheong Li Chiy	1990312838	1998-05-05	5, Jalan Sena Indah, Taman Sena Indah, 01000 Kangar, Perlis.	24
117	Pavitra A/P Manimaharan	1722252288	2000-01-31	105, Jalan 51A/223, Seksyen 51A, 46100 Petaling Jaya, Selangor.	22
118	Nurul Syahirah Binti Roslan	1693377521	1991-02-28	No 3, Jalan Bukit Jambul, Bukit Jambul, 11900 Bayan Lepas, Pulau Pinang.	31
119	Nur Balqis Binti Zahri	1673411877	2001-09-11	No 8 Jalan Indera Mahkota 2/1, Bandar Indera Mahkota Jaya, 25200 Kuantan, Pahang.	21
120	Alia Syaheera Binti Johari	1460875176	1996-04-15	No 8, Jalan Santan, Taman Puteri Putri, 01000 Kangar, Perlis.	26
121	Thennish A/L Vertival	1340355584	1993-04-26	46, Shaftsbury Putrajaya, Jalan Alamanda Presint 1, 62000 Putrajaya, WPP.	29
122	Esther Look Kher Shein	1221797383	2001-06-27	No 28, Lebuhr Relau 2, Taman Desa Relau, 11900 Bayan Lepas, Pulau Pinang.	21

- b. Update company address to '30, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor' for company ID SBTECH.

mysql> UPDATE company

-> set c_Address = '30, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor'
-> where c_ID = 'SBTECH'
-> ;

BEFORE

```
mysql> select * from company;
```

c_ID	p_ID	c_Name	c_Address	office_No
SBTECH	103	Sandbox Tech SDN BHD	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, cyber 12, 63000 Cyberjaya, Selangor	327242535
SBTECH	104	Sandbox Tech SDN BHD	C2-2-8, Block C4, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor	327242535
99SM	105	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
99SM	106	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
99SM	107	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
TROP	108	Tropical Coffee Shop	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang	390281995
TROP	109	Tropical Coffee Shop	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang	390281995

7 rows in set (0.00 sec)

AFTER

```
mysql> UPDATE company
-> set c_Address = '30, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor'
-> where c_ID = 'SBTECH'
-> ;
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2 Changed: 2 Warnings: 0

mysql> select * from company;
```

c_ID	p_ID	c_Name	c_Address	office_No
SBTECH	103	Sandbox Tech SDN BHD	30, CBD Perdana 3, Lingkaran Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor	327242535
SBTECH	104	Sandbox Tech SDN BHD	30, CBD Perdana 3, Lingkaran Cyber Point Timur, cyber 12, 63000 Cyberjaya, Selangor	327242535
99SM	105	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
99SM	106	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
99SM	107	99 Speedmart 1175 Pusat Bandar Latania	No 6 & 8, Jalan Nagasari E 36/E, Seksyen 36, 40470 Shah Alam, Selangor	333626863
TROP	108	Tropical Coffee Shop	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang	390281995
TROP	109	Tropical Coffee Shop	20, Lor Seri Mahkota 25, Taman Seri Mahkota, 25150 Kuantan, Pahang	390281995

7 rows in set (0.00 sec)

3. DELETE

- a. Delete nurse for nurse ID NS77881

mysql> DELETE from nurse

-> where n_ID = 'NS77881'

-> ;

BEFORE

```
mysql> select * from nurse;
```

n_ID	ppv_ID	staff_Name	phone_No	hospital_Name
NS77091	ppvKangar	Mohd Arif	1115770740	Hospital Tuanku Fauziah
NS77156	ppvBBB	Alia Nabila	132163516	Hospital Bukit Mertajam
NS77187	ppvWPP	Jamal	199272016	Hospital Putrajaya
NS77629	ppvIM	Siti Nur Balqis	195674234	Hospital Tengku Ampuan Afzan
NS77671	ppvUM	Azirul Imran	193426753	Kuala Lumpur General Hospital
NS77881	ppvUM	Nik Nur Ain	1113757702	Kuala Lumpur General Hospital

6 rows in set (0.04 sec)

AFTER

```
mysql> select * from nurse;
```

n_ID	ppv_ID	staff_Name	phone_No	hospital_Name
NS77091	ppvKangar	Mohd Arif	1115770740	Hospital Tuanku Fauziah
NS77156	ppvBBB	Alia Nabila	132163516	Hospital Bukit Mertajam
NS77187	ppvWPP	Jamal	199272016	Hospital Putrajaya
NS77629	ppvIM	Siti Nur Balqis	195674234	Hospital Tengku Ampuan Afzan
NS77671	ppvUM	Azirul Imran	193426753	Kuala Lumpur General Hospital

5 rows in set (0.00 sec)

- b. Delete all row of police officer from Ibupejabat Polis Daerah Puchong.

mysql> DELETE from police

-> where station_Name = 'Ibupejabat Polis Daerah Puchong'

-> ;

BEFORE

```
mysql> select * from police;
```

po_ID	ppv_ID	staff_Name	phone_No	station_Name
PS44017	ppvKangar	Moses Sanda	179470740	Ibupejabat Polis Daerah Kangar Polis Diraja Malaysia
PS44198	ppvIM	Tan Jun Wei	133934758	Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia
PS44298	ppvUM	Nik Mohd Fitri	199970721	Ibu Pejabat Polis Kontinjen Kuala Lumpur Polis Diraja Malaysia
PS44354	ppvWPP	Asrul Amin	1113342376	Ibupejabat Polis Daerah Puchong
PS44826	ppvWPP	Ng Hui Xin	1113754705	Ibupejabat Polis Daerah Putrajaya
PS44874	ppvWPP	Farha Ainina	1176873143	Ibupejabat Polis Daerah Puchong
PS44967	ppvBBB	Low Ka Chong	169764709	Ibupejabat Polis Daerah Seberang Perai Tengah Polis Diraja Malaysia
PS44986	ppvWPP	Abiyah Nazihah	1976576505	Ibupejabat Polis Daerah Puchong

8 rows in set (0.04 sec)

AFTER

```
mysql> select * from police;
```

po_ID	ppv_ID	staff_Name	phone_No	station_Name
PS44017	ppvKangar	Moses Sanda	179470740	Ibupejabat Polis Daerah Kangar Polis Diraja Malaysia
PS44198	ppvIM	Tan Jun Wei	133934758	Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia
PS44298	ppvUM	Nik Mohd Fitri	199970721	Ibu Pejabat Polis Kontinjen Kuala Lumpur Polis Diraja Malaysia
PS44826	ppvWPP	Ng Hui Xin	1113754705	Ibupejabat Polis Daerah Putrajaya
PS44967	ppvBBB	Low Ka Chong	169764709	Ibupejabat Polis Daerah Seberang Perai Tengah Polis Diraja Malaysia

5 rows in set (0.00 sec)

4. FUNCTION

a. MIN FUNCTION

Find the youngest patient and display all the patient ID and name.

```
mysql> select p_ID, p_Name, p_Age  
-> from patient  
-> where p_Age = (select min(p_Age) from patient)  
-> ;
```

```
mysql> select p_ID, p_Name, p_Age  
-> from patient  
-> where p_Age = (select min(p_Age) from patient)  
-> ;  
+-----+-----+-----+  
| p_ID | p_Name                | p_Age |  
+-----+-----+-----+  
| 103  | Muhammad Hafiz Bin Husaini | 20    |  
| 114  | Hasmah Bin Zulkifli      | 20    |  
+-----+-----+-----+  
2 rows in set (0.00 sec)
```

b. MAX FUNCTION

Find the oldest patient and display all the patient ID and name.

```
mysql> select p_ID, p_Name, p_Age  
-> from patient  
-> where p_Age = (select max(p_Age) from patient)  
-> ;
```

```
mysql> select p_ID, p_Name, p_Age  
-> from patient  
-> where p_Age = (select max(p_Age) from patient)  
-> ;  
+-----+-----+-----+  
| p_ID | p_Name                | p_Age |  
+-----+-----+-----+  
| 113  | Zuehyra Binti Ariff     | 32    |  
+-----+-----+-----+  
1 row in set (0.00 sec)
```

c. COUNT FUNCTION

- Display the total number for each vaccine type ordered by the highest number of vaccines.

```
mysql> select vac_Type, count(vac_Type) as 'Total' from vaccine
      -> group by vac_Type
      -> order by Total desc
      -> ;
```

```
mysql> select vac_Type, count(vac_Type) as 'Total' from vaccine
      -> group by vac_Type
      -> order by Total desc
      -> ;
```

vac_Type	Total
Pfizer	9
Sinovac	5
AstraZeneca	3
Moderna	3

4 rows in set (0.04 sec)

- Check the highest total of vaccine status.

```
mysql> select vac_Status, count(vac_Status) as 'Total' from certificate
      -> group by vac_Status
      -> order by Total desc
      -> ;
```

```
mysql> select vac_Status, count(vac_Status) as 'Total' from certificate
      -> group by vac_Status
      -> order by Total desc
      -> ;
```

vac_Status	Total
1st dose	12
2nd dose	8

2 rows in set (0.00 sec)

5. WHERE/ HAVING/ GROUPBY/ AND/ OR/ BETWEEN/ LIKE

- a. Phone number for female patient

```
mysql> SELECT p_Name,phone_No  
-> from patient  
-> where p_Name like '%Binti%'  
-> ;
```

```
mysql> SELECT p_Name,phone_No  
-> from patient  
-> Where p_Name like '%Binti%'  
-> ;
```

p_Name	phone_No
Rusaini Ukhlimah Binti Roslan	1132874928
Siti Rohana Binti Azman	1874342134
Nur Aishah Binti Johari	1792367891
Natasha Binti Mohd Bakri	1151617730
Alia Batrisya Binti Kamaruddin	1121943796
Zuehyra Binti Ariff	1159658680
Nurul Syahirah Binti Roslan	1693377521
Nur Balqis Binti Zahri	1673411877
Alia Syaheera Binti Johari	1460875176

9 rows in set (0.00 sec)

- b. Ppv ID and Vaccine type for male patient

```
mysql> SELECT p.p_Name, c.ppv_ID, c.vac_Type  
-> from patient p,certificate c  
-> where p.p_ID=c.p_ID  
-> and p_Name like '%Bin%'  
-> ;
```

```
mysql> SELECT p.p_Name,c.ppv_ID,c.vac_Type  
-> from patient p,certificate c  
-> where p.p_ID=c.p_ID  
-> and p_Name like '%Bin%'  
-> ;
```

p_Name	ppv_ID	vac_Type
Rusaini Ukhlimah Binti Roslan	ppvWPP	Pfizer
Muhammad Hafiz Bin Husaini	ppvWPP	Pfizer
Ahmad Fakrul Bin Mael	ppvIM	Pfizer
Natasha Binti Mohd Bakri	ppvIM	Pfizer
Mohamed Ismail Bin Rahim	ppvBBB	Pfizer
Zuehyra Binti Ariff	ppvIM	Pfizer
Nur Balqis Binti Zahri	ppvIM	Pfizer
Ku Naim Bin Ku Wahab	ppvKangar	Sinovac
Siti Rohana Binti Azman	ppvUM	Sinovac
Nur Aishah Binti Johari	ppvUM	Sinovac
Muhammad Nazirul Bin Azfar	ppvUM	Sinovac
Hasmah Bin Zulkifli	ppvBBB	Sinovac
Saiful Ali Bin Saifuddin	ppvKangar	AstraZeneca
Alia Batrisya Binti Kamaruddin	ppvUM	Moderna
Nurul Syahirah Binti Roslan	ppvBBB	Moderna
Alia Syaheera Binti Johari	ppvKangar	Moderna

16 rows in set (0.01 sec)

6. DATE

- a. Patient that has an appointment in November 2021

```
mysql> SELECT * from appointment WHERE app_Date like '%11%'  
-> ;
```

```
mysql> SELECT * from appointment WHERE app_Date like '%11%'  
-> ;  
+-----+-----+-----+-----+  
| p_ID | ppv_ID | app_Date | slot |  
+-----+-----+-----+-----+  
| 104 | ppvWPP | 2021-11-26 | 08:00:00 |  
| 105 | ppvUM | 2021-11-19 | 10:30:00 |  
| 106 | ppvUM | 2021-11-21 | 10:00:00 |  
| 107 | ppvUM | 2021-11-21 | 08:00:00 |  
| 111 | ppvUM | 2021-11-21 | 08:30:00 |  
| 112 | ppvBBB | 2021-11-18 | 11:00:00 |  
| 114 | ppvBBB | 2021-11-18 | 11:00:00 |  
| 117 | ppvUM | 2021-11-21 | 10:00:00 |  
| 118 | ppvBBB | 2021-11-18 | 08:30:00 |  
+-----+-----+-----+-----+  
9 rows in set (0.01 sec)
```

- b. Patient that have Date of Birth in March

```
mysql> SELECT p_Name,p_DOB from patient  
-> where p_DOB like '%03%'  
-> ;
```

```
mysql> SELECT p_Name,p_DOB from patient  
-> where p_DOB like '%03%'  
-> ;  
+-----+-----+  
| p_Name | p_DOB |  
+-----+-----+  
| Nur Aishah Binti Johari | 2001-03-28 |  
| Mohamed Ismail Bin Rahim | 1993-03-04 |  
| Hasmah Bin Zulkifli | 2002-08-03 |  
+-----+-----+  
3 rows in set (0.00 sec)
```

7. COMPLEX SQL STATEMENT

- a. Display company ID, patient ID, patient name, ppv ID, appointment date, and time slot for all the patients that register their vaccine through the company.

```
mysql> select c.c_ID, p.p_ID, p.p_Name, a.ppv_ID, a.app_Date, a.slot
-> from company c, patient p, appointment a
-> where p.p_ID = c.p_ID and p.p_ID = a.p_ID
-> order by c_ID
-> ;
```

```
mysql> select c.c_ID, p.p_ID, p.p_Name, a.ppv_ID, a.app_Date, a.slot
-> from company c, patient p, appointment a
-> where p.p_ID = c.p_ID and p.p_ID = a.p_ID
-> order by c_ID
-> ;
```

c_ID	p_ID	p_Name	ppv_ID	app_Date	slot
99SM	105	Muhammad Nazirul Bin Azfar	ppvUM	2021-11-19	10:30:00
99SM	106	Siti Rohana Binti Azman	ppvUM	2021-11-21	10:00:00
99SM	107	Nur Aishah Binti Johari	ppvUM	2021-11-21	08:00:00
SBTECH	103	Muhammad Hafiz Bin Husaini	ppvWPP	2021-12-17	09:30:00
SBTECH	104	Rusaini Ukhlimah Binti Roslan	ppvWPP	2021-11-26	08:00:00
TROP	108	Ahmad Fakrul Bin Mael	ppvIM	2021-12-04	08:30:00
TROP	109	Natasha Binti Mohd Bakri	ppvIM	2021-12-04	08:30:00

7 rows in set (0.00 sec)

- b. Retrieve patient ID, name, appointment date, and slot time where the appointment is in December only sorted by appointment date with ascending order.

```
mysql> select p.p_ID, p.p_Name, a.app_Date, a.slot
-> from patient p, appointment a
-> where p.p_ID=a.p_ID
-> and month(app_Date)=12
-> order by app_Date asc;
```

```
mysql> select p.p_ID, p.p_Name, a.app_Date, a.slot
-> from patient p, appointment a
-> where p.p_ID=a.p_ID
-> and month(app_Date)=12
-> order by app_Date asc;
```

p_ID	p_Name	app_Date	slot
108	Ahmad Fakrul Bin Mael	2021-12-04	08:30:00
109	Natasha Binti Mohd Bakri	2021-12-04	08:30:00
113	Zuehyra Binti Ariff	2021-12-04	09:00:00
119	Nur Balqis Binti Zahri	2021-12-05	08:30:00
110	Saiful Ali Bin Saifuddin	2021-12-06	11:00:00
115	Ku Naim Bin Ku Wahab	2021-12-06	11:40:00
116	Cheong Li Chi	2021-12-06	11:40:00
120	Alia Syaheera Binti Johari	2021-12-06	11:40:00
103	Muhammad Hafiz Bin Husaini	2021-12-17	09:30:00
121	Thennish A/L Vertival	2021-12-17	09:30:00
122	Esther Look Kher Shein	2021-12-22	08:30:00

11 rows in set (0.00 sec)

- c. Display patient ID, name phone number, vaccine type, appointment date and vaccine status of the patient that has complete both of their vaccine dose sorted by appointment date with ascending order.

```
mysql> select p.p_ID, p.p_Name, p.phone_No, c.vac_Type, c.app_Date,
c.vac_Status
-> from patient p, certificate c
-> where p.p_ID=c.p_ID
-> and vac_Status='2nd dose'
-> order by app_Date asc;
```

```
mysql> select p.p_ID, p.p_Name, p.phone_No, c.vac_Type, c.app_Date, c.vac_Status
-> from patient p, certificate c
-> where p.p_ID=c.p_ID
-> and vac_Status='2nd dose'
-> order by app_Date asc;
```

p_ID	p_Name	phone_No	vac_Type	app_Date	vac_Status
118	Nurul Syahirah Binti Roslan	1693377521	Moderna	2021-11-18	2nd dose
105	Muhammad Nazirul Bin Azfar	1183974646	Sinovac	2021-11-19	2nd dose
106	Siti Rohana Binti Azman	1874342134	Sinovac	2021-11-21	2nd dose
117	Pavitra A/P Manimaharan	1722252288	AstraZeneca	2021-11-21	2nd dose
111	Alia Batrisya Binti Kamaruddin	1121943796	Moderna	2021-11-21	2nd dose
115	Ku Naim Bin Ku Wahab	1951661645	Sinovac	2021-12-06	2nd dose
120	Alia Syaheera Binti Johari	1460875176	Moderna	2021-12-06	2nd dose
103	Muhammad Hafiz Bin Husaini	177260176	Pfizer	2021-12-17	2nd dose

8 rows in set (0.00 sec)

DATA DICTIONARY

PK: Primary Key

FK: Foreign Key

1. PATIENT

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
p_ID	varchar(10)	Define patient ID	103	PK
p_Name	varchar(50)	Define patient name	Muhammad Hafiz Bin Husaini	
phone_No	int	Define patient phone number	0177260176	
p_DOB	date	Define patient date of birth	2002-1-26	
p_Address	varchar(100)	Define patient address	A-G-20 CoPlace 2, Jalan Usahawan 1, 63000 Cyberjaya, Selangor	
p_Age	int	Define patient age	20	

2. VACCINE

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
vac_No	int	Define vaccine number	10478	PK
p_ID	varchar(10)	Define patient ID	104	FK
vac_Type	varchar(20)	Define vaccine type	Pfizer	
batch_No	int	Define vaccine batch number	1001288	FK

3. CENTER

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
ppv_ID	varchar (10)	Define Pusat Pemberian Vaksin ID	ppvUM	
p_ID	varchar (10)	Define patient ID	107	PK/FK
ppv_Name	varchar (50)	Define Pusat Pemberian Vaksin name	Pusat Vaksin Universiti Malaya	
app_Date	date	Define appointment date	2021-11-21	

4. APPOINTMENT

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
p_ID	varchar (10)	Define patient ID	110	PK/FK
ppv_ID	varchar (10)	Define Pusat Pemberian Vaksin ID	ppvKangar	FK
app_Date	date	Define appointment date	2021-12-06	
slot	time	Define appointment slot	11:00	

5. VOLUNTEER

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
v_ID	varchar (10)	Define volunteer ID	VS22014	PK
ppv_ID	varchar (10)	Define Pusat Pemberian Vaksin ID	ppvIM	FK
staff_Name	varchar (50)	Define staff name	Ain Atikah	
phone_No	int	Define volunteer phone number	01119812135	
home_Addresses	varchar (100)	Define volunteer home address	Lorong 1/2, Bandar Indra Mahkota, 21300 Kuantan, Pahang	

6. POLICE

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
po_ID	varchar (10)	Define police ID	PS44198	PK
ppv_ID	varchar (10)	Define Pusat Pemberian Vaksin ID	ppvIM	FK
staff_Name	varchar (50)	Define staff name	Tan Jun Wei	
phone_No	int	Define police phone number	0133934758	
station_Name	varchar (100)	Define police station name	Ibupejabat Polis Daerah Kuantan Polis Diraja Malaysia	

7. COMPANY

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
c_ID	varchar(10)	Define company ID	SBTECH	
p_ID	varchar(10)	Define patient ID	104	PK/FK
c_Name	varchar(50)	Define company name	Sandbox Tech SDN BHD	
p_Name	varchar(50)	Define patient name	Rusaini Ukhlimah Binti Roslan	
c_Address	varchar(100)	Define company address	C2-2-8, Block C4, CBD Perdana 3, Lingkar Cyber Point Timur, Cyber 12, 63000 Cyberjaya, Selangor	
office_No	int	Define office phone number	0327242535	

8. CERTIFICATE

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
batch_No	int	Define vaccine batch number	1002300	PK
p_ID	varchar(10)	Define patient ID	103	FK
ppv_ID	varchar(10)	Define Pusat Pemberian Vaksin ID	ppvWPP	FK
vac_Type	varchar(20)	Define vaccine type	Pfizer	
app_Date	date	Define appointment date	2021-12-17	
vac_Status	varchar(20)	Define vaccine status	2nd dose	

9. DOCTOR

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
d_ID	varchar(10)	Define doctor ID	DS11046	PK
ppv_ID	varchar(10)	Define Pusat Pemberian Vaksin ID	ppvBBB	FK
staff_Name	varchar(50)	Define doctor staff ID	Dr.Ameer	
phone_No	int	Define doctor phone number	0125361191	
hospital_Name	varchar(100)	Define doctor hospital name	Hospital Bukit Mertajam	

10. NURSE

ATTRIBUTE	DATA TYPE	DESCRIPTION	POSSIBLE VALUE	PK/FK
n_ID	varchar(10)	Define nurse ID	NS77629	PK
ppv_ID	varchar(10)	Define Pusat Pemberian Vaksin ID	ppvIM	FK
staff_Name	varchar(50)	Define staff name	Siti Nur Balqis	
phone_No	int	Define nurse phone number	0195674234	
hospital_Name	varchar(100)	Define nurse hospital name	Hospital Tengku Ampuan Afzan	

PRESENTATION VIDEO

<https://www.youtube.com/watch?v=uj-rzUFoGwg>

REFERENCES

1. Extend Microsoft Vaccination Management. (n.d.). Microsoft 2022. Retrieved from <https://docs.microsoft.com/en-us/dynamics365/industry/vaccination-management/extend>
2. Horstmann, M. (n.d.). Vaccination Management for Public Health Authorities and Companies. Retrieved from <https://www.arvato-systems.com/industries/industries-overview/healthcare-pharma/vaccination-management>
3. MySejahtera. Retrieved from <https://mysejahtera.malaysia.gov.my/intro/>
4. Selangkah VAX. Retrieved from <https://vax.selangkah.my/>

MEETING REPORT

Date: 15 October 2021

Time: 4:00PM - 4:30PM

Venue/Platform: Whatsapp Meeting

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Mini project title discussion.
- Mini project title: Vaccine Management System
- Each member needs to do some research to find past projects that relate to vaccines.
- Will discuss further details about the case study in the next meeting.

Date: 2 December 2021

Time: 8:30PM - 9:30PM

Venue/Platform: Google Meet

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Finding a few case studies that are suitable to the topic.
- MySejahtera and Selangkah VAX as our case study and main reference for the project.
- Mini project name: MyVax.
- Work distribution among members.
- Work distributed fairly among members.
- Every member will have the same work for part 1.
- Explanation on each part for each member.
- Each member understands how to do their part well.

Date: 20 December 2021

Time: 8:30PM - 10:00PM

Venue/Platform: Google Meet

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Checking the parts: Introduction, Scope, Objectives.
- Each member understands what the introduction, scope and objectives tell about the whole mini project.
- Discussion to identify entities included for the mini project, led by Aida.
- Some of the entities are not relevant to this project.
- New entities have been added.
- Discussion to identify business rules for each entity related, led by Alif.
- The business rule has been made by everyone's logic and understanding.

Date: 31 December 2021

Time: 8:30PM - 9:30PM

Venue/Platform: Whatsapp Video Call

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Double check the entities and business rules.
- Nothing needs to be adjusted in the business rule.
- If nothing to be adjusted, proceed with the entity-relationship diagram.
- Sketching draft for entity relationship diagram (ERD) and extended entity-relationship diagram (EERD) led by Aiman and Amira.
- Everyone contributes to the ideas.
- Each member is assigned to part 2 work distribution.
- Each member understands how to do their part well.

Date: 19 January 2022

Time: 8:30PM - 9:30PM

Venue/Platform: Whatsapp Video Call

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Check the normalization part.
- Problem faced when write SQL statements such as create and insert data.
- Group members check the SQL statements executed for the create database, create tables and insert records.
- Discuss 10 or more SQL query needed to execute such as select, update, alter.

Date: 26 January 2022

Time: 8:30PM - 9:30PM

Venue/Platform: Whatsapp Video Call

Leader: Nik Nur Ain Binti Nik Jid (SD20022)

Attendance:

1. Muhammad Aimandzikri Bin Mohd Nizam (SD20020)
2. Nur Amira Asyikin Binti Azlan (SD20023)
3. Syarifah Nabilah Syahirah Binti Syed Abd Wahab (SD20027)
4. Muhammad Nur Alif Bin Lazim (SD20048)
5. Nur Aida Izzati Binti Kamarulazua (SD20059)

Meeting discussion:

- Discussion and check all the SQL statements that members had done.
- Check the data dictionary part.
- Each member checks important things such as PK, FK, type data, relations.
- Everyone contributes well in the discussion.
- Each member read through the whole project twice to ensure the whole project is understandable and satisfied.