

# VACCINATION CENTER DATABASE

DATABASE PROJECT CCCS215

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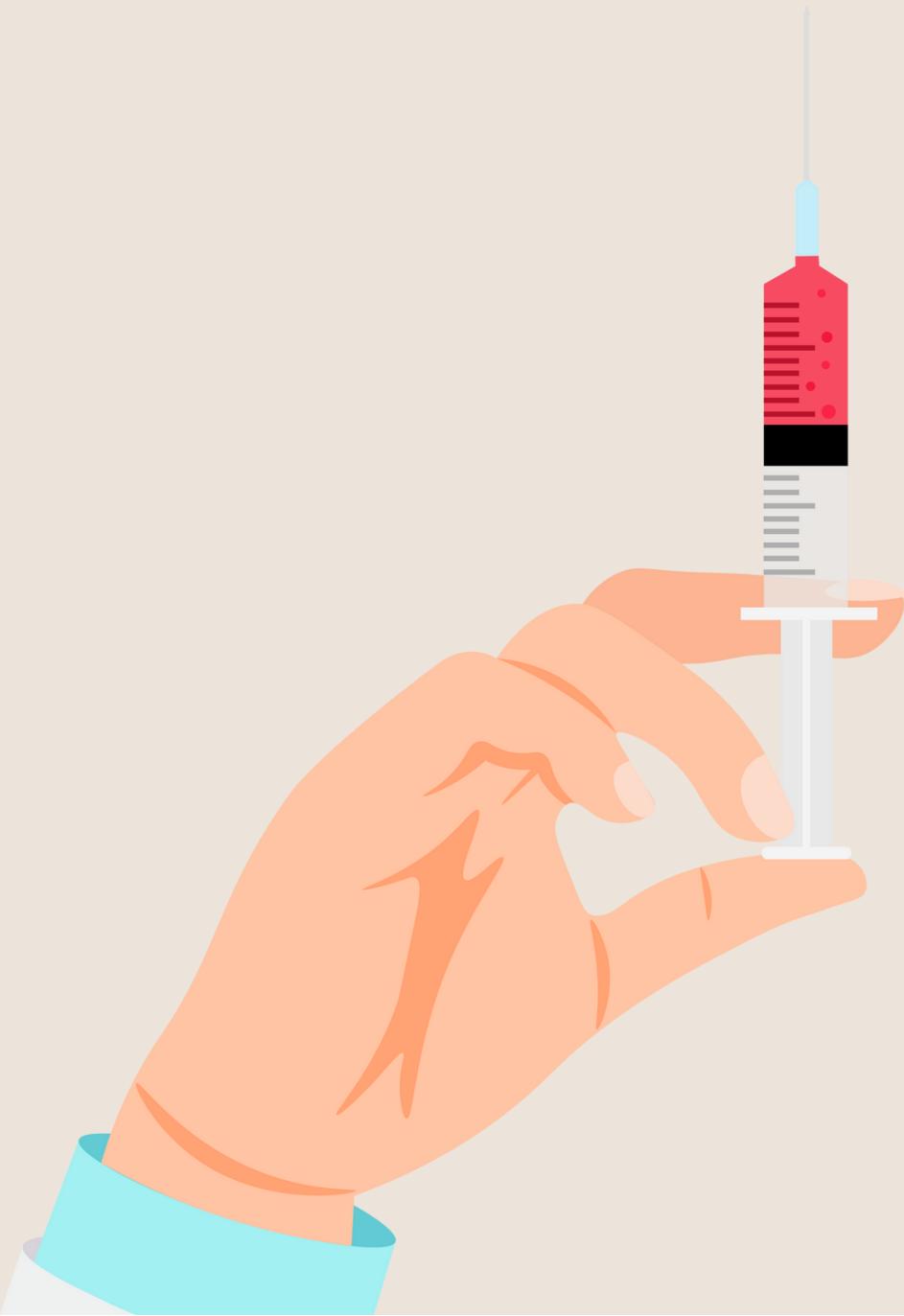
WESAL HAWSAWI - 2006526

INSTRUCTOR  
NAME:BEN  
AMAR SANDRA



# PROJECT DESCRIPTION:

VACCINATION CENTERS DATABASE THAT LETS PATIENTS CHOOSE THE CENTER AND VACCINE THEY WANT AND BOOK AN APPOINTMENT FOR THEIR COVID-19 VACCINE.



# ENTITIES:

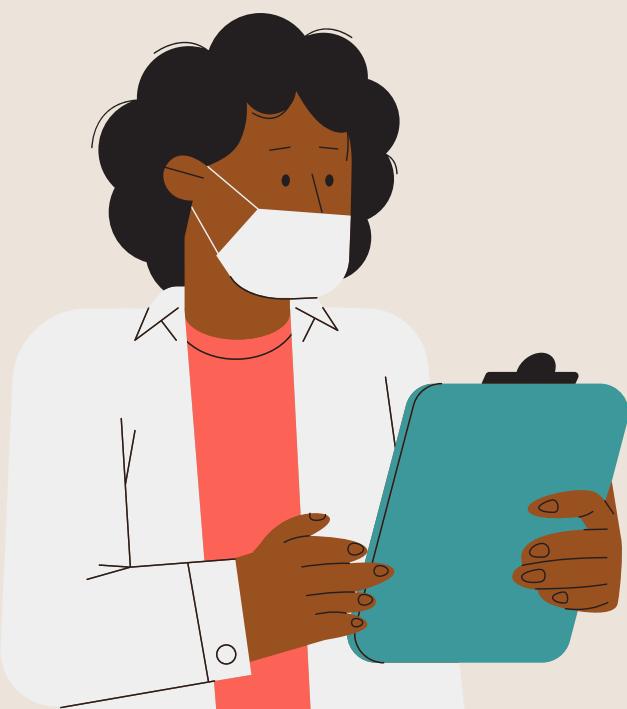
PATIENTS: PATIENTNAME (FIRSTNAME, LASTNAME), PATIENTID, PATIENTPHONENUMBER, PATIENTAGE, HEALTHSTATUS.

CENTER: CENTERNAME, CENTERLOCATION, CENTERWORKINGHOURS, VACCINESCHEDULE.

VACCINE: VACCINETYPE.

APPOINTMENT: APPOINTMENTSTATUS, APPOINTMENTNUMBER.

DOCTOR: DOCTORNAME, DOCTORID, DOCTORSPECIALIZATION, WORKINGHOURS

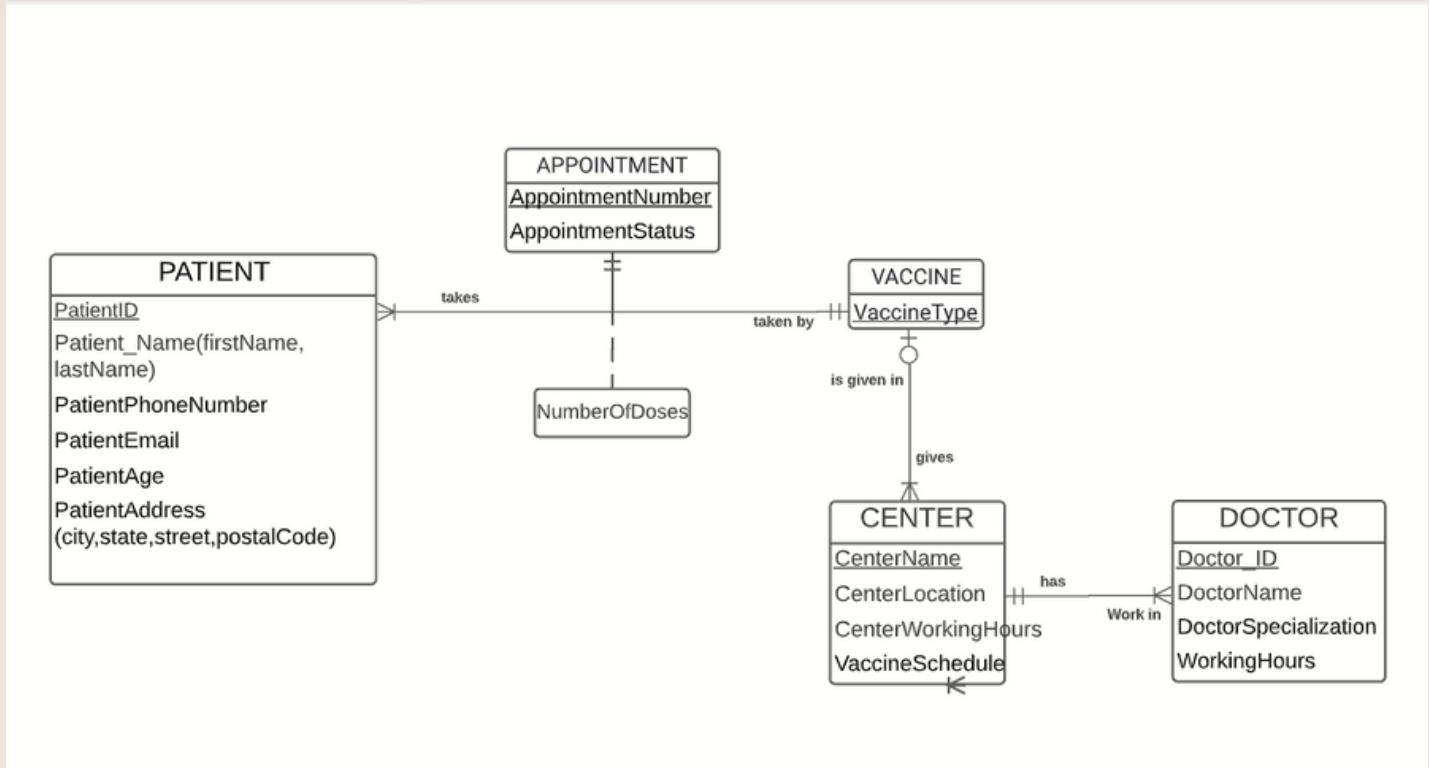


# **BUSINESS RULES (SYSTEM SPECIFICATIONS):**

- PATIENTS CAN TAKE ONLY ONE APPOINTMENT FOR ONE VACCINE.
- AN APPOINTMENT IS BOOKED BY ONE OR MANY PATIENTS FOR ONE VACCINE DOSE.
- A VACCINE IS TAKEN BY PATIENTS VIA APPOINTMENT
- ONE OR MANY CENTERS HAVE ONLY ONE TYPE OF VACCINE.
- A VACCINE CAN BE USED BY MANY CENTERS.
- ONE CENTER HAS AT LEAST ONE OR MANY DOCTORS.
- DOCTORS MUST WORK IN ONE CENTER.



# ER MODEL



# MAPPING



# RELATION

PATIENT (PatientID, firstName, lastName, PatientPhoneNumber, PatientEmail, PatientAge, city, state, postalCode, VaccineType\*, AppointmentNumber\*)

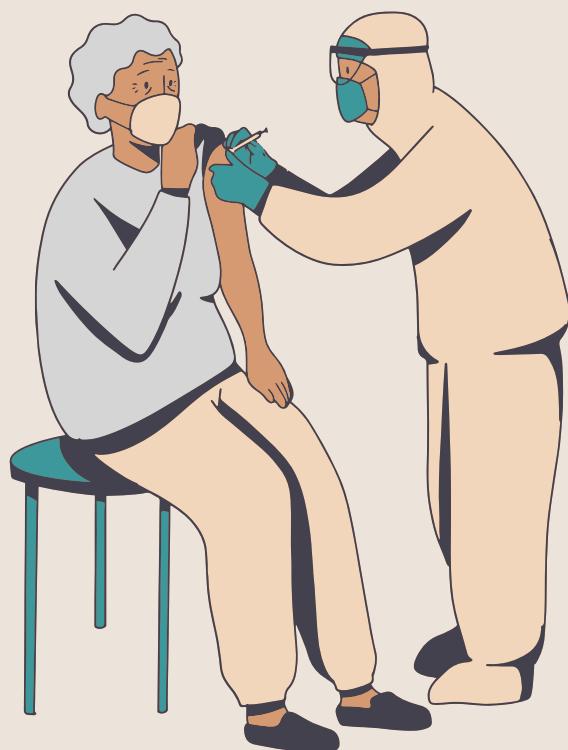
APPOINTMENT(AppointmentNumber, AppointmentStatus)

DOSE(PatientID\*, AppointmentNumber\*, VaccineType\*, NumberOfDoses)

Vaccine(VaccineType)

CENTER(CenterName, VaccineType\*, CenterLocation, CenterWorkingHours, VaccineSchedule)

DOCTOR (Doctor ID, CenterName\*, DoctorName, DoctorSpecialization, WorkingHours)



# Normalization

1NF:

The relation is already in the 1NF.

PATIENT (PatientID, firstName, lastName, PatientPhoneNumber, PatientEmail, PatientAge, city, state, street, postalCode, VaccineType\*, AppointmentNumber\*)

APPOINTMENT(AppointmentNumber, AppointmentStatus)

DOSE(PatientID\*, AppointmentNumber\*, VaccineType\*, NumberOfDoses)

Vaccine(VaccineType)

CENTER(CenterName, VaccineType\*, CenterLocation, CenterWorkingHours, VaccineSchedule)

DOCTOR (Doctor\_ID, CenterName\*, DoctorName, DoctorSpecialization, WorkingHours)



# Normalization

2NF:

The relation is in the 1NF, and all attributes are fully dependent on the PK. No transitive dependency.

PATIENT (PatientID, firstName, lastName, PatientPhoneNumber, PatientEmail, PatientAge, city, state, street, postalCode, VaccineType\*, AppointmentNumber\*)

APPOINTMENT(AppointmentNumber, AppointmentStatus)

DOSE(PatientID\*, AppointmentNumber\*, VaccineType\*, NumberOfDoses)

Vaccine(VaccineType)

CENTER(CenterName, VaccineType\*, CenterLocation, CenterWorkingHours, VaccineSchedule)

DOCTOR (Doctor\_ID, CenterName\*, DoctorName, DoctorSpecialization, WorkingHours)



# Normalization

3NF:

The relation is in 2NF and removes all transitive dependencies.

PATIENT (PatientID, firstName, lastName, PatientPhoneNumber, PatientEmail, PatientAge, PostalCode, VaccineType\*)

**PATIENTADDRESS** (PostalCode, City, State, Street)

APPOINTMENT(AppointmentNumber, AppointmentStatus)

DOSE(PatientID\*, AppointmentNumber\*, VaccineType\*, NumberOfDoses)

Vaccine(VaccineType)

CENTER(CenterName, VaccineType\*, CenterLocation, CenterWorkingHours, VaccineSchedule)

DOCTOR (Doctor\_ID, CenterName\*, DoctorName, DoctorSpecialization, WorkingHours)



# FUNCTIONAL DEPENDENCIES

FD1	PatientID ->firstName, lastName, PatientPhoneNumber, PatientEmail, PatientAge, city, state, street, postalCode, VaccineType*, AppointmentNumber*
FD2	PostalCode --> City, State, Street
FD3	AppointmentNumber --> AppointmentStatus
FD4	<u>PatientID</u> , <u>AppointmentNumber</u> , <u>VaccineType</u> --> NumberOfDoses
FD5	<u>CenterName</u> --> VaccineType*, CenterLocation, CenterWorkingHours, VaccineSchedule
FD6	<u>Doctor ID</u> --> CenterName*, DoctorName, DoctorSpecialization, WorkingHours



# CREATING TABLES



```
SQL Worksheet
1 -----CREATING TABLES-----
2 -----START OF CREATION-----
3
4 -----VACCINE_T-----
5 CREATE TABLE VACCINE_T
6 (VACCINE_TYPE VARCHAR2(20),
7 CONSTRAINT VACCINETYPE_PK PRIMARY KEY (VACCINE_TYPE));
8
9 -----PATIENTADDRESS_T-----
10 CREATE TABLE PATIENTADDRESS_T
11 (POSTAL_CODE NUMBER(5),
12 City varchar(30),
13 State varchar(40),
14 Street varchar(60),
15 PRIMARY KEY (POSTAL_CODE));
16
17 -----PATIENT_T-----
18 CREATE TABLE PATIENT_T
19 (PATIENT_ID NUMBER(7) NOT NULL,
20 FIRST_NAME VARCHAR2(25) NOT NULL,
21 LAST_NAME VARCHAR2(25),
22 PATIENT_PHONENO NUMBER(11),
23 PATIENT_EMAIL varchar(319),
```

```
SQL Worksheet
23 PATIENT_EMAIL varchar(319),
24 PATIENT_AGE NUMBER(2),
25 POSTAL_CODE NUMBER(5),
26 VACCINE_TYPE VARCHAR2(20),
27 CONSTRAINT PATIENT_PK PRIMARY KEY (PATIENT_ID),
28 FOREIGN KEY(POSTAL_CODE) REFERENCES PATIENTADDRESS_T(POSTAL_CODE),
29 FOREIGN KEY(VACCINE_TYPE) REFERENCES VACCINE_T(VACCINE_TYPE);
30
31 -----CENTER_T-----
32
33 CREATE TABLE CENTER_T
34 (CENTER_NAME VARCHAR2(35),
35 VACCINE_TYPE VARCHAR2(20),
36 CENTER_LOCATION VARCHAR2(40),
37 CENTER_WORKING_HRS VARCHAR2(25),
38 VACCINE_SCHEDULE DATE DEFAULT SYSDATE,
39 CONSTRAINT CENTER_PK PRIMARY KEY (CENTER_NAME),
40 FOREIGN KEY (VACCINE_TYPE) REFERENCES VACCINE_T(VACCINE_TYPE));
41
42 -----DOCTOR_T-----
43
44 CREATE TABLE DOCTOR_T
45 (DOCTOR_ID NUMBER(7),
```

```
QL Worksheet
42 -----DOCTOR_T-----
43 CREATE TABLE DOCTOR_T
44 (DOCTOR_ID NUMBER(7),
45 DOCTOR_NAME VARCHAR2(25) NOT NULL,
46 CENTER_NAME VARCHAR2(35),
47 DOCTOR_SPECIALIZATION VARCHAR2(60),
48 WORKING_HRS VARCHAR2(25),
49 CONSTRAINT DOCTOR_PK PRIMARY KEY (DOCTOR_ID),
50 FOREIGN KEY (CENTER_NAME) REFERENCES CENTER_T(CENTER_NAME));
51
52 -----APPOINTMENT_T-----
53 CREATE TABLE APPOINTMENT_T
54 (APPOINTMENT_NO NUMBER(7) NOT NULL,
55 APPOINTMENT_STATUS VARCHAR2(20),
56 CONSTRAINT APPOINTMENT_PK PRIMARY KEY (APPOINTMENT_NO));
57
58 -----DOSE_T-----
59 CREATE TABLE DOSE_T
60 (PATIENT_ID NUMBER(7),
61 APPOINTMENT_NO NUMBER(7),
62 VACCINE_TYPE VARCHAR2(20),
63 NUMBER_OF_DOSES NUMBER(2),
64 CONSTRAINT PATIENT_PK3 PRIMARY KEY (PATIENT_ID,VACCINE_TYPE,APPOINTMENT_NO),
```

```
QL Worksheet
48 WORKING_HRS VARCHAR2(25),
49 CONSTRAINT DOCTOR_PK PRIMARY KEY (DOCTOR_ID),
50 FOREIGN KEY (CENTER_NAME) REFERENCES CENTER_T(CENTER_NAME));
51
52 -----APPOINTMENT_T-----
53 CREATE TABLE APPOINTMENT_T
54 (APPOINTMENT_NO NUMBER(7) NOT NULL,
55 APPOINTMENT_STATUS VARCHAR2(20),
56 CONSTRAINT APPOINTMENT_PK PRIMARY KEY (APPOINTMENT_NO));
57
58 -----DOSE_T-----
59 CREATE TABLE DOSE_T
60 (PATIENT_ID NUMBER(7),
61 APPOINTMENT_NO NUMBER(7),
62 VACCINE_TYPE VARCHAR2(20),
63 NUMBER_OF_DOSES NUMBER(2),
64 CONSTRAINT PATIENT_PK3 PRIMARY KEY (PATIENT_ID,VACCINE_TYPE,APPOINTMENT_NO),
65 CONSTRAINT PATIENT_FK FOREIGN KEY (PATIENT_ID) REFERENCES PATIENT_T(PATIENT_ID),
66 FOREIGN KEY (APPOINTMENT_NO) REFERENCES APPOINTMENT_T(APPOINTMENT_NO),
67 FOREIGN KEY (VACCINE_TYPE) REFERENCES VACCINE_T(VACCINE_TYPE));
68
69 -----END OF CREATION-----
```



# CREATING TABLES:

A screenshot of a SQL worksheet interface. The top navigation bar includes 'Live SQL' and user information ('ritaaj5@gmail.com'). Below the bar, a toolbar offers 'Clear', 'Find', 'Actions', 'Save', and a 'Run' button. The main area displays eight identical messages: 'Table created.' repeated eight times.

SQL Worksheet

Feedback Help Save Run ▶

Clear Find Actions ▾

TABLE DOSE\_T

Column	Null?	Type
PATIENT_ID	NOT NULL	NUMBER(7,0)
APPOINTMENT_NO	NOT NULL	NUMBER(7,0)
VACCINE_TYPE	NOT NULL	VARCHAR2(20)
NUMBER_OF_DOSES	-	NUMBER(2,0)

[Download CSV](#)

4 rows selected.

TABLE VACCINE\_T

Column	Null?	Type
VACCINE_TYPE	NOT NULL	VARCHAR2(20)

[Download CSV](#)

SQL Worksheet

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Clear Find Actions Save Run

TABLE DOCTOR\_T

Column	Null?	Type
DOCTOR_ID	NOT NULL	NUMBER(7,0)
DOCTOR_NAME	NOT NULL	VARCHAR2(25)
CENTER_NAME	-	VARCHAR2(35)
DOCTOR_SPECIALIZATION	-	VARCHAR2(60)
WORKING_HRS	-	VARCHAR2(25)

[Download CSV](#)

5 rows selected.

TABLE APPOINTMENT\_T

Column	Null?	Type
APPOINTMENT_NO	NOT NULL	NUMBER(7,0)
APPOINTMENT_STATUS	-	VARCHAR2(20)

[Download CSV](#)



# CREATING TABLES:

SQL Worksheet

TABLE PATIENTADDRESS\_T

Column	Null?	Type
POSTAL_CODE	NOT NULL	NUMBER(5,0)
CITY	-	VARCHAR2(30)
STATE	-	VARCHAR2(40)
STREET	-	VARCHAR2(60)

[Download CSV](#)  
4 rows selected.

Clear Find Actions Save Run

SQL Worksheet

TABLE PATIENT\_T

Column	Null?	Type
PATIENT_ID	NOT NULL	NUMBER(7,0)
FIRST_NAME	NOT NULL	VARCHAR2(25)
LAST_NAME	-	VARCHAR2(25)
PATIENT_PHONENO	-	NUMBER(11,0)
PATIENT_EMAIL	-	VARCHAR2(319)
PATIENT_AGE	-	NUMBER(2,0)
POSTAL_CODE	-	NUMBER(5,0)
VACCINE_TYPE	-	VARCHAR2(20)

[Download CSV](#)  
8 rows selected.

Clear Find Actions Save Run

SQL Worksheet

TABLE CENTER\_T

Column	Null?	Type
CENTER_NAME	NOT NULL	VARCHAR2(35)
VACCINE_TYPE	-	VARCHAR2(20)
CENTER_LOCATION	-	VARCHAR2(40)
CENTER_WORKING_HRS	-	VARCHAR2(25)
VACCINE_SCHEDULE	-	DATE

[Download CSV](#)  
5 rows selected.

Clear Find Actions Save Run

# INSERTING DATA:

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SQL Worksheet

```
72 -----INSERT DATA-----  
73 -----START OF INSERTION-----  
74  
75 -----INSERT INTO VACCINE TABLE-----  
76 INSERT INTO VACCINE_T VALUES('PFIZER');  
77 INSERT INTO VACCINE_T VALUES('NOVAVAX');  
78 INSERT INTO VACCINE_T VALUES('MODERNA');  
79 INSERT INTO VACCINE_T VALUES('OXFORD');  
80 INSERT INTO VACCINE_T VALUES('GAMAIYEYA');  
81  
82 -----INSERT INTO PATIENT ADDRESS TABLE-----  
83 INSERT INTO PATIENTADDRESS_T VALUES(64537,'JEDDAH','MAKKAH','SETTEN ST');  
84 INSERT INTO PATIENTADDRESS_T VALUES(53425,'JEDDAH','MAKKAH','AL MAKARUNAH ST');  
85 INSERT INTO PATIENTADDRESS_T VALUES(36443,'JEDDAH','MAKKAH','PRINCE MAJID ST');  
86 INSERT INTO PATIENTADDRESS_T VALUES(41255,'JEDDAH','MAKKAH','CORNISHE ST');  
87 INSERT INTO PATIENTADDRESS_T VALUES(34498,'JEDDAH','MAKKAH','PRINCE FAISAL IBN FAHD ST');  
88  
89  
90 -----INSERT INTO PATIENT TABLE-----  
91 INSERT INTO PATIENT_T VALUES(2006526,'WESAL','HAWSAWI','0534614365','XWESAL.5@GMAIL.COM','21',64537,'PFIZER');  
92 INSERT INTO PATIENT_T VALUES(2005534,'RITAJ','ALMUTAIRI','0554669664','RITAJ.3@GMAIL.COM','21',53425,'NOVAVAX');  
93 INSERT INTO PATIENT_T VALUES(2005521,'JWANA','ALTHUNIYYAN','0554634664','JWANA.9@GMAIL.COM','20',36443,'MODERNA');  
94 INSERT INTO PATIENT_T VALUES(2006522,'DEEMA','ALMSBH','0521914365','DEEMA25@GMAIL.COM','25',41255,'OXFORD');  
95  
96 -----INSERT INTO CENTER TABLE-----  
97 INSERT INTO CENTER_T VALUES('KING ABDULAZIZ UNIVERSITY HOSPITAL','PFIZER','JEDDAH','24 Hours','25-JAN-2022');  
98 INSERT INTO CENTER_T VALUES('SAUDI GERMAN HEALTH','NOVAVAX','JEDDAH','8:00AM to 12:30AM','29-MAY-2022');  
99 INSERT INTO CENTER_T VALUES('KING FAHAD GENERAL HOSPITAL','MODERNA','JEDDAH','24 Hours','9-FEB-2022');  
100 INSERT INTO CENTER_T VALUES('KING ABDULLAH GENERAL HOSPITAL','OXFORD','JEDDAH','1:00PM to 12:30AM','27-JUN-2022');  
101 INSERT INTO CENTER_T VALUES('BUGSHAN HOSPITAL','GAMAIYEYA','JEDDAH','24 Hours','1-DEC-2022');  
102  
103 -----INSERT INTO DOCTORS TABLE-----  
104  
105  
106 INSERT INTO DOCTOR_T VALUES(4568372,'MOHAMMED','KING ABDULAZIZ UNIVERSITY HOSPITAL','NEUROLOGIST','1:00PM TO 12:30AM');  
107 INSERT INTO DOCTOR_T VALUES(654296,'RUBA','SAUDI GERMAN HEALTH','PEDIATRICIAN','12:00PM TO 6:00PM');  
108 INSERT INTO DOCTOR_T VALUES(8256346,'ALI','KING FAHAD GENERAL HOSPITAL','CARDIOLOGIST','4:00AM TO 11:00AM');  
109 INSERT INTO DOCTOR_T VALUES(8156346,'SAEED','KING ABDULLAH GENERAL HOSPITAL','NUTRITIONIST','4:30PM TO 9:00PM');  
110 INSERT INTO DOCTOR_T VALUES(8456347,'FATIMAH','BUGSHAN HOSPITAL','CARDIOLOGIST','1:30AM TO 6:30AM');  
111
```

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SQL Worksheet

```
90 -----INSERT INTO PATIENT TABLE-----  
91 INSERT INTO PATIENT_T VALUES(2006526,'WESAL','HAWSAWI','0534614365','XWESAL.5@GMAIL.COM','21',64537,'PFIZER');  
92 INSERT INTO PATIENT_T VALUES(2005534,'RITAJ','ALMUTAIRI','0554669664','RITAJ.3@GMAIL.COM','21',53425,'NOVAVAX');  
93 INSERT INTO PATIENT_T VALUES(2005521,'JWANA','ALTHUNIYYAN','0554634664','JWANA.9@GMAIL.COM','20',36443,'MODERNA');  
94 INSERT INTO PATIENT_T VALUES(2006522,'DEEMA','ALMSBH','0521914365','DEEMA25@GMAIL.COM','25',41255,'OXFORD');  
95  
96 -----INSERT INTO CENTER TABLE-----  
97 INSERT INTO CENTER_T VALUES('KING ABDULAZIZ UNIVERSITY HOSPITAL','PFIZER','JEDDAH','24 Hours','25-JAN-2022');  
98 INSERT INTO CENTER_T VALUES('SAUDI GERMAN HEALTH','NOVAVAX','JEDDAH','8:00AM to 12:30AM','29-MAY-2022');  
99 INSERT INTO CENTER_T VALUES('KING FAHAD GENERAL HOSPITAL','MODERNA','JEDDAH','24 Hours','9-FEB-2022');  
100 INSERT INTO CENTER_T VALUES('KING ABDULLAH GENERAL HOSPITAL','OXFORD','JEDDAH','1:00PM to 12:30AM','27-JUN-2022');  
101 INSERT INTO CENTER_T VALUES('BUGSHAN HOSPITAL','GAMAIYEYA','JEDDAH','24 Hours','1-DEC-2022');  
102  
103 -----INSERT INTO DOCTORS TABLE-----  
104  
105  
106  
107  
108  
109  
110  
111  
112 -----INSERT INTO APPOINTMENT TABLE-----  
113  
114 INSERT INTO APPOINTMENT_T VALUES(1452862,'CONFIRMED');  
115 INSERT INTO APPOINTMENT_T VALUES(4328320,'CANCELLED');  
116 INSERT INTO APPOINTMENT_T VALUES(5624973,'DID NOT ATTEND');  
117 INSERT INTO APPOINTMENT_T VALUES(1892862,'UNCONFIRMED');  
118 INSERT INTO APPOINTMENT_T VALUES(1477862,'CONFIRMED');  
119  
120 -----INSERT INTO DOSE TABLE-----  
121  
122 INSERT INTO DOSE_T VALUES(2006526,1452862,'PFIZER',4);  
123 INSERT INTO DOSE_T VALUES(2005534,4328320,'NOVAVAX',2);  
124 INSERT INTO DOSE_T VALUES(2005521,5624973,'MODERNA',2);  
125 INSERT INTO DOSE_T VALUES(2006522,1892862,'OXFORD',2);  
126 INSERT INTO DOSE_T VALUES(2005534,1477862,'GAMAIYEYA',3));  
127  
128 -----END OF INSERTION-----  
129
```



# INSERTING DATA:

SQL Worksheet

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VACCINE\_TYPE

GAMAIYEYA
MODERNA
NOVAVAX
OXFORD
PFIZER

Download CSV  
5 rows selected.

POSTAL\_CODE CITY STATE STREET

64537	JEDDAH	MAKKAH	SETTEN ST
53425	JEDDAH	MAKKAH	AL MAKARUNAH ST
36443	JEDDAH	MAKKAH	PRINCE MAJID ST
41255	JEDDAH	MAKKAH	CORNISHE ST
34498	JEDDAH	MAKKAH	PRINCE FAISAL IBN FAHD ST

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SQL Worksheet

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PATIENT\_ID FIRST\_NAME LAST\_NAME PATIENT\_PHONE NO PATIENT\_EMAIL PATIENT\_AGE POSTAL\_CODE VACCINE\_TYPE

2006526	WESAL	HAWSAWI	534614365	WESAL.S@GMAIL.COM	21	64537	PFIZER
2005534	RITAJ	ALMUTAIRI	554669664	RITAJ.3@GMAIL.COM	21	53425	NOVAVAX
2005521	JIWANA	ALTHUNIYYAN	554634664	JIWANA.9@GMAIL.COM	20	36443	MODERNA
2006522	DEEMA	ALMSBH	521914365	DEEMA25@GMAIL.COM	25	41255	OXFORD
2011534	RAGHAD	ALZHRANI	554662844	RAGHAD.6@gmail.com	21	34498	GAMAIYEYA

Download CSV  
5 rows selected.

CENTER\_NAME VACCINE\_TYPE CENTER\_LOCATION CENTER\_WORKING\_HRS VACCINE\_SCHEDULE

KING ABDULAZIZ UNIVERSITY HOSPITAL	PFIZER	JEDDAH	24 Hours	25-JAN-22
SAUDI GERMAN HEALTH	NOVAVAX	JEDDAH	8:00AM to 12:30AM	29-MAY-22
KING FAHAD GENERAL HOSPITAL	MODERNA	JEDDAH	24 Hours	09-FEB-22
KING ABDULLAH GENERAL HOSPITAL	OXFORD	JEDDAH	1:00PM to 12:30AM	27-JUNI-22

SQL Worksheet

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DOCTOR\_ID DOCTOR\_NAME CENTER\_NAME DOCTOR\_SPECIALIZATION WORKING\_HRS

4568372	MOHAMMED	KING ABDULAZIZ UNIVERSITY HOSPITAL	NEUROLOGIST	1:00PM TO 12:30AM
654296	RUBA	SAUDI GERMAN HEALTH	PEDIATRICIAN	12:00PM TO 6:00PM
8256346	ALI	KING FAHAD GENERAL HOSPITAL	CARDIOLOGIST	4:00AM TO 11:00AM
8156346	SAEED	KING ABDULLAH GENERAL HOSPITAL	NUTRITIONIST	4:30PM TO 9:00PM
8456347	FATIMAH	BUGSHAN HOSPITAL	CARDIOLOGIST	1:30AM TO 6:30AM

Download CSV  
5 rows selected.

APPOINTMENT\_NO APPOINTMENT\_STATUS

1452862	CONFIRMED
4328320	CANCELLED
5624973	DID NOT ATTEND
1892862	UNCONFIRMED
1477862	CONFIRMED

Download CSV

SQL Worksheet

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PATIENT\_ID APPOINTMENT\_NO VACCINE\_TYPE NUMBER\_OF\_DOSSES

2006526	1452862	PFIZER	4
2005534	4328320	NOVAVAX	2
2005521	5624973	MODERNA	2
2006522	1892862	OXFORD	2
2005534	1477862	GAMAIYEYA	3

Download CSV  
5 rows selected.



# QUERIES:

1- A query to display patient information who took the Pfizer vaccine by using subquery

SQL Worksheet

```
129 -----QUERIES-----
130 -----START OF QUERIES-----
131
132
133
134 SELECT FIRST_NAME , LAST_NAME , PT.VACCINE_TYPE
135 FROM PATIENT_T PT
136 WHERE PT.VACCINE_TYPE IN
137 (SELECT VACCINE_TYPE FROM VACCINE_T
138 WHERE VACCINE_TYPE = 'PFIZER');
139
```

FIRST_NAME	LAST_NAME	VACCINE_TYPE
WESAL	HAWSAWI	PFIZER

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2- A query to display doctors information and the center name ordered by the doctors' id

SQL Worksheet

```
139
140 SELECT DOCTOR_ID , DOCTOR_NAME , CN.CENTER_NAME
141 FROM DOCTOR_T DT , CENTER_T CN
142 WHERE DT.CENTER_NAME = CN.CENTER_NAME
143 ORDER BY DOCTOR_ID;
144
```

DOCTOR_ID	DOCTOR_NAME	CENTER_NAME
654296	RUBA	SAUDI GERMAN HEALTH
4568372	MOHAMMED	KING ABDULAZIZ UNIVERSITY HOSPITAL
8156346	SAEED	KING ABDULLAH GENRAL HOSPITAL
8256346	ALI	KING FAHAD GENRAL HOSPITAL
8456347	FATIMAH	BUGSHAN HOSPITAL

[Download CSV](#)  
5 rows selected.



# QUERIES:

3- A query to count the number of patients in each city grouped by the city name

SQL Worksheet

```
144
145 SELECT CITY , COUNT(CITY) AS "NUMBER OF CENTERS"
146 FROM PATIENTADDRESS_T
147 GROUP BY CITY;
148
149
```

CITY	NUMBER OF CENTERS
JEDDAH	5

[Download CSV](#)

4- A query to display centers' information that gives a vaccine that contains the letter O in its name.

SQL Worksheet

```
149
150 SELECT CENTER_NAME, VACCINE_TYPE,
151 CENTER_LOCATION,CENTER_WORKING_HRS
152 FROM CENTER_T
153 WHERE VACCINE_TYPE LIKE '%O%';
154
```

CENTER_NAME	VACCINE_TYPE	CENTER_LOCATION	CENTER_WORKING_HRS
SAUDI GERMAN HEALTH	NOVAVAX	JEDDAH	8:00AM to 12:30AM
KING FAHAD GENRAL HOSPITAL	MODERNA	JEDDAH	24 Hours
KING ABDULLAH GENRAL HOSPITAL	OXFORD	JEDDAH	1:00PM to 12:30AM

[Download CSV](#)  
3 rows selected.



# PROCEDURES:

1- A Procedure to count the number of doctors in a given center

SQL Worksheet

```
157 -----PROCEDURE-----  
158 ----- START OF PROCEDURE-----  
161 -----COUNT THE NUMBER OF DOCTORS IN A GIVEN CENTER-----  
162 CREATE OR REPLACE PROCEDURE NUMBEROFCENTERS (CNAME IN VARCHAR2 )  
163 IS  
164 C_NAME VARCHAR2(35);  
165 DOCTOR_COUNT NUMBER;  
166 BEGIN  
167 SELECT COUNT(DOCTOR_ID) INTO DOCTOR_COUNT FROM DOCTOR_T DT WHERE CENTER_NAME=CNAME;  
168 DBMS_OUTPUT.PUT_LINE('NUMBERS OF DOCTORS IN THIS CENTER IS: '|| DOCTOR_COUNT);  
169  
170 END NUMBEROFCENTERS;  
  
Procedure created.
```

Executing:

SQL Worksheet

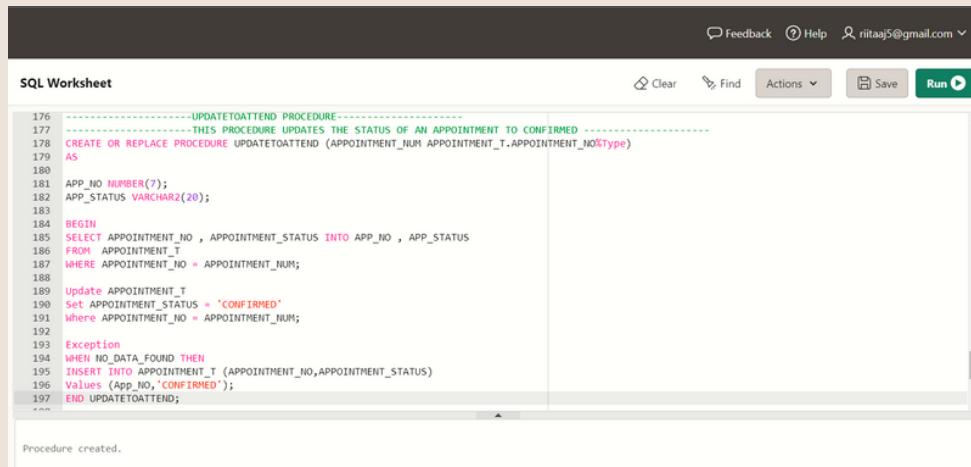
```
160 -----COUNT THE NUMBER OF DOCTORS IN A GIVEN CENTER-----  
161 CREATE OR REPLACE PROCEDURE NUMBEROFCENTERS (CNAME IN VARCHAR2 )  
162 IS  
163 C_NAME VARCHAR2(35);  
164 DOCTOR_COUNT NUMBER;  
165 BEGIN  
166 SELECT COUNT(DOCTOR_ID) INTO DOCTOR_COUNT FROM DOCTOR_T DT WHERE CENTER_NAME=CNAME;  
167 DBMS_OUTPUT.PUT_LINE('NUMBERS OF DOCTORS IN THIS CENTER IS: '|| DOCTOR_COUNT);  
168  
169 END NUMBEROFCENTERS;  
170  
171 EXEC NUMBEROFCENTERS('SAUDI GERMAN HEALTH');  
172  
173 |
```

Statement processed.  
NUMBERS OF DOCTORS IN THIS CENTER IS: 1



# PROCEDURES:

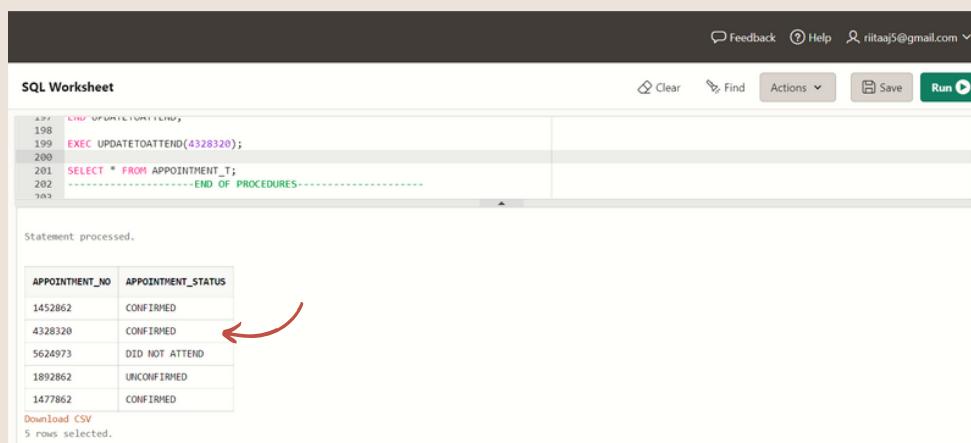
2- A procedure to update the status of a given appointment number to confirmed



```
176 -----UPDATETOATTEND PROCEDURE-----
177 -----THIS PROCEDURE UPDATES THE STATUS OF AN APPOINTMENT TO CONFIRMED -----
178 CREATE OR REPLACE PROCEDURE UPDATETOATTEND (APPOINTMENT_NUM IN APPOINTMENT_T.APPOINTMENT_NO%TYPE)
179 AS
180
181 APP_NO NUMBER(7);
182 APP_STATUS VARCHAR2(20);
183
184 BEGIN
185 SELECT APPOINTMENT_NO , APPOINTMENT_STATUS INTO APP_NO , APP_STATUS
186 FROM APPOINTMENT_T
187 WHERE APPOINTMENT_NO = APPOINTMENT_NUM;
188
189 Update APPOINTMENT_T
190 Set APPOINTMENT_STATUS = 'CONFIRMED'
191 Where APPOINTMENT_NO = APPOINTMENT_NUM;
192
193 Exception
194 WHEN NO_DATA_FOUND THEN
195 INSERT INTO APPOINTMENT_T (APPOINTMENT_NO,APPOINTMENT_STATUS)
196 Values (App_No,'CONFIRMED');
197 END UPDATETOATTEND;
```

Procedure created.

Executing:



```
198 EXEC UPDATETOATTEND(4328320);
199
200
201 SELECT * FROM APPOINTMENT_T;
202 -----END OF PROCEDURES-----
```

Statement processed.

APPOINTMENT_NO	APPOINTMENT_STATUS
1452862	CONFIRMED
4328320	CONFIRMED
5624973	DID NOT ATTEND
1892862	UNCONFIRMED
1477862	CONFIRMED

Download CSV  
5 rows selected.

