SQL PROJECT

HOSPITAL MANAGEMENT SYSTEM

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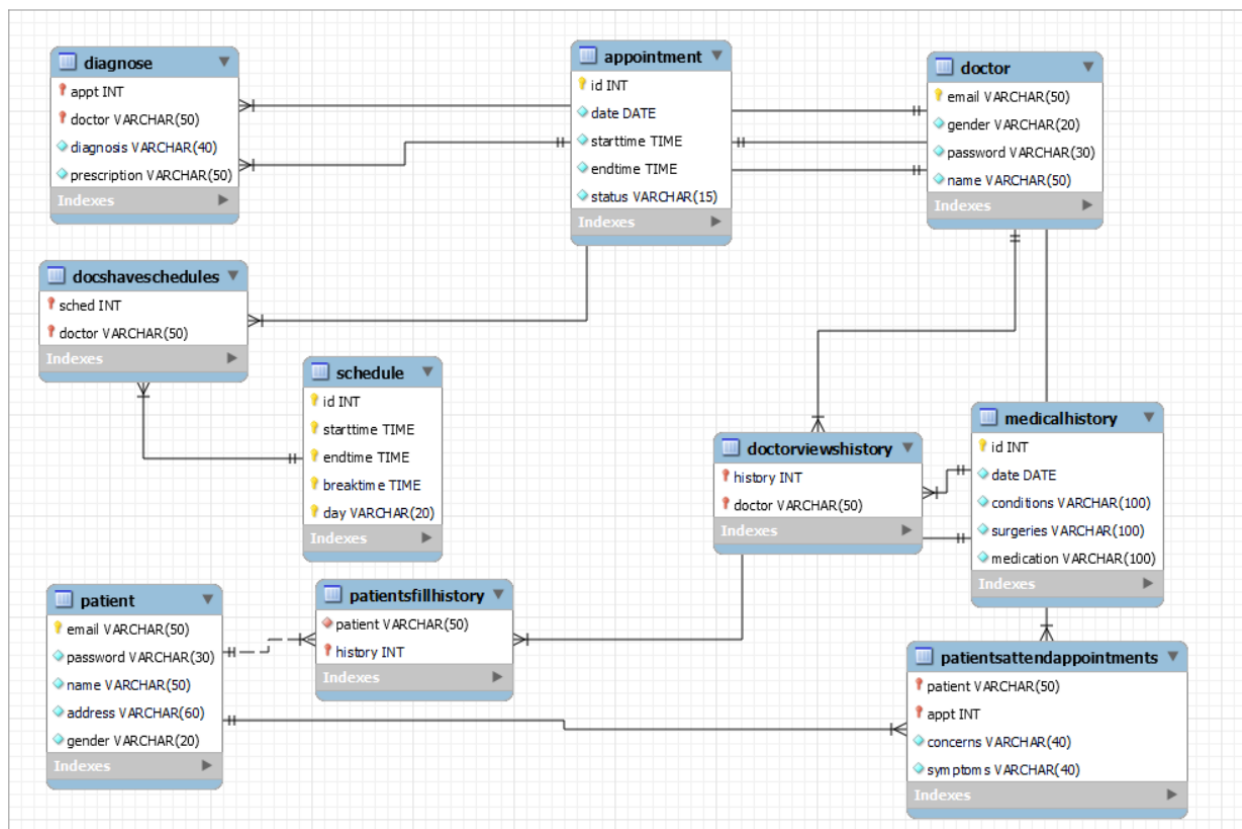**COURSE:** DATA SCIENCE & ANALYTICS WITH AI

ABOUT THE DATASET:

DATASET SOURCE: GITHUB

Hospitals interact with a lot of people in a day and there are various activities involved in day-to-day working of hospitals such as booking of doctors' appointments, managing doctor schedules, patient diagnoses, patients' medical history etc. This project aims to create and manage a Relational Database Management System which handles the hospital database system effectively.

AVAILABLE TABLES:

- Patient
- MedicalHistory
- Doctor
- Appointment
- PatientsAttendAppointments
- Schedule
- PatientsFillHistory
- Diagnose
- DocsHaveSchedules
- DoctorViewsHistory

ENTITY-RELATIONSHIP DIAGRAM:

diagnose
- appt INT
- doctor VARCHAR(50)
- diagnosis VARCHAR(40)
- prescription VARCHAR(50)
- Indexes

appointment
- id INT
- date DATE
- starttime TIME
- endtime TIME
- status VARCHAR(15)
- Indexes

doctor
- email VARCHAR(50)
- gender VARCHAR(20)
- password VARCHAR(30)
- name VARCHAR(50)
- Indexes

docshaveschedules
- sched INT
- doctor VARCHAR(50)
- Indexes

schedule
- id INT
- starttime TIME
- endtime TIME
- breaktime TIME
- day VARCHAR(20)
- Indexes

doctorviewshistory
- history INT
- doctor VARCHAR(50)
- Indexes

medicalhistory
- id INT
- date DATE
- conditions VARCHAR(100)
- surgeries VARCHAR(100)
- medication VARCHAR(100)
- Indexes

patient
- email VARCHAR(50)
- password VARCHAR(30)
- name VARCHAR(50)
- address VARCHAR(60)
- gender VARCHAR(20)
- Indexes

patientsfillhistory
- patient VARCHAR(50)
- history INT
- Indexes

patientsattendappointments
- patient VARCHAR(50)
- appt INT
- concerns VARCHAR(40)
- symptoms VARCHAR(40)
- Indexes

Creating the Database and Tables:

```sql
CREATE DATABASE HospitalManagementSystem;
USE HospitalManagementSystem;

CREATE TABLE Patient(
email varchar(50) PRIMARY KEY,
password varchar(30) NOT NULL,
name varchar(50) NOT NULL,
address varchar(60) NOT NULL,
gender VARCHAR(20) NOT NULL
);

CREATE TABLE MedicalHistory(
id int PRIMARY KEY,
date DATE NOT NULL,
conditions VARCHAR(100) NOT NULL,
surgeries VARCHAR(100) NOT NULL,
medication VARCHAR(100) NOT NULL
);

CREATE TABLE Doctor(
email varchar(50) PRIMARY KEY,
gender varchar(20) NOT NULL,
password varchar(30) NOT NULL,
name varchar(50) NOT NULL
);
```

```sql
CREATE TABLE Appointment(
id int PRIMARY KEY,
date DATE NOT NULL,
starttime TIME NOT NULL,
endtime TIME NOT NULL,
status varchar(15) NOT NULL
);

CREATE TABLE PatientsAttendAppointments(
patient varchar(50) NOT NULL,
appt int NOT NULL,
concerns varchar(40) NOT NULL,
symptoms varchar(40) NOT NULL,
FOREIGN KEY (patient) REFERENCES Patient (email) ON DELETE CASCADE,
FOREIGN KEY (appt) REFERENCES Appointment (id) ON DELETE CASCADE,
PRIMARY KEY (patient, appt)
);

CREATE TABLE Schedule(
id int NOT NULL,
starttime TIME NOT NULL,
endtime TIME NOT NULL,
breaktime TIME NOT NULL,
day varchar(20) NOT NULL,
PRIMARY KEY (id, starttime, endtime, breaktime, day)
);

CREATE TABLE PatientsFillHistory(
patient varchar(50) NOT NULL,
history int NOT NULL,
FOREIGN KEY (patient) REFERENCES Patient (email) ON DELETE CASCADE,
FOREIGN KEY (history) REFERENCES MedicalHistory (id) ON DELETE CASCADE,
PRIMARY KEY (history)
);

CREATE TABLE Diagnose(
appt int NOT NULL,
doctor varchar(50) NOT NULL,
diagnosis varchar(40) NOT NULL,
prescription varchar(50) NOT NULL,
FOREIGN KEY (appt) REFERENCES Appointment (id) ON DELETE CASCADE,
FOREIGN KEY (doctor) REFERENCES Doctor (email) ON DELETE CASCADE,
PRIMARY KEY (appt, doctor)
);

CREATE TABLE DocsHaveSchedules(
sched int NOT NULL,
doctor varchar(50) NOT NULL,
FOREIGN KEY (sched) REFERENCES Schedule (id) ON DELETE CASCADE,
FOREIGN KEY (doctor) REFERENCES Doctor (email) ON DELETE CASCADE,
PRIMARY KEY (sched, doctor)
);
```

```sql
CREATE TABLE DoctorViewsHistory(
history int NOT NULL,
doctor varchar(50) NOT NULL,
FOREIGN KEY (doctor) REFERENCES Doctor (email) ON DELETE CASCADE,
FOREIGN KEY (history) REFERENCES MedicalHistory (id) ON DELETE CASCADE,
PRIMARY KEY (history, doctor)
);
```

Inserting the values in Tables:

```sql
INSERT INTO Patient(email,password,name,address,gender)
VALUES
('suyash@gmail.com','suyash1234','Suyash','Mumbai', 'male'),
('suraj@gmail.com','suraj5678','Suraj','Lucknow', 'male'),
('siraj@gmail.com','siraj4321','Siraj','Delhi', 'male'),
('sayali@gmail.com','sayali8765','Sayali','Pune', 'female'),
('vaibhav@gmail.com','vaibhav1357','Vaibhav','Lucknow', 'male'),
('aishwarya@gmail.com','aishwarya2468','Aishwarya','Chennai', 'female')
;


INSERT INTO MedicalHistory(id,date,conditions,surgeries,medication)
VALUES
(1,'2019-01-14','Chest Pain','Open Heart Surgery','Crocin'),
(2,'2019-03-25','Ligament Tear','Ligament Operation','Combiflam'),
(3,'2019-06-23','Body Pain','none','Iodex'),
(4,'2019-09-24','Headache','none','Lanol'),
(5,'2019-08-30','Loose Motion','none','Emeset'),
(6,'2019-07-16','Gasritis','none','Gelusil')
;


INSERT INTO Doctor(email, gender, password, name)
VALUES
('rekha12345@gmail.com', 'female', 'rekha@1234', 'Rekha Adak'),
('priyanshi1234@gmail.com', 'female', 'priyanshi@5678', 'Priyanshi Patel')
;


INSERT INTO Appointment(id,date,starttime,endtime,status)
VALUES
(1, '2019-01-15', '09:00', '10:00', 'Done'),
(2, '2019-03-26', '10:00', '11:00', 'Done'),
(3, '2019-06-24', '14:00', '15:00', 'Done'),
(4, '2019-09-25', '14:00', '15:00', 'Pending'),
(5, '2019-08-31', '14:00', '15:00', 'Pending'),
(6, '2019-07-17', '14:00', '15:00', 'Pending')
;


INSERT INTO PatientsAttendAppointments(patient,appt,concerns,symptoms)
VALUES
('suyash@gmail.com',1, 'none', 'itchy throat'),
('suraj@gmail.com',2, 'infection', 'fever'),
('siraj@gmail.com',3, 'nausea', 'fever'),
('sayali@gmail.com',4, 'migraine', 'severe headache'),
('vaibhav@gmail.com',5, 'heart attack', 'chest pain'),
('aishwarya@gmail.com',6, 'muscle strain', 'shoulder injury')
;
```

```sql
INSERT INTO Schedule(id,starttime,endtime,breaktime,day)
VALUES
(001,'09:00','17:00','12:00','Monday'),
(001,'09:00','17:00','12:00','Wednesday'),
(001,'09:00','17:00','12:00','Friday'),
(001,'09:00','17:00','12:00','Saturday'),
(002,'09:00','17:00','12:00','Sunday'),
(002,'09:00','17:00','12:00','Tuesday'),
(002,'09:00','17:00','12:00','Thursday'),
(002,'09:00','17:00','12:00','Saturday')
;

INSERT INTO PatientsFillHistory(patient,history)
VALUES
('suyash@gmail.com', 1),
('suraj@gmail.com', 2),
('siraj@gmail.com', 3),
('sayali@gmail.com', 4),
('vaibhav@gmail.com', 5),
('aishwarya@gmail.com', 6)
;

INSERT INTO Diagnose(appt,doctor,diagnosis,prescription)
VALUES
(1,'rekha12345@gmail.com', 'Bloating', 'Ibuprofen as needed'),
(2,'rekha12345@gmail.com', 'Muscle soreness', 'Stretch morning/night'),
(3,'priyanshi1234@gmail.com', 'Vitamin Deficiency', 'Good Diet'),
(4,'priyanshi1234@gmail.com', 'Irregular Stomach', 'Emeset')
;

INSERT INTO DocsHaveSchedules(sched,doctor)
VALUES
(001,'rekha12345@gmail.com'),
(002,'priyanshi1234@gmail.com')
;

INSERT INTO DoctorViewsHistory(history,doctor)
VALUES
(1,'rekha12345@gmail.com'),
(2,'rekha12345@gmail.com'),
(3,'rekha12345@gmail.com'),
(4,'priyanshi1234@gmail.com'),
(5,'priyanshi1234@gmail.com'),
(6,'priyanshi1234@gmail.com')
;
```

QUERY 1: Display Structure and Data of Each Table

```
desc Patient;
select * from Patient;
```

Field	Type	Null	Key	Default	Extra
email	varchar(50)	NO	PRI	NULL	
password	varchar(30)	NO		NULL	
name	varchar(50)	NO		NULL	
address	varchar(60)	NO		NULL	
gender	varchar(20)	NO		NULL	

email	password	name	address	gender
aishwarya@gmail.com	aishwarya2468	Aishwarya	Chennai	female
sayali@gmail.com	sayali8765	Sayali	Pune	female
siraj@gmail.com	siraj4321	Siraj	Delhi	male
suraj@gmail.com	suraj5678	Suraj	Lucknow	male
suyash@gmail.com	suyash1234	Suyash	Mumbai	male
vaibhav@gmail.com	vaibhav1357	Vaibhav	Lucknow	male
NULL	NULL	NULL	NULL	NULL

```
desc MedicalHistory;
select * from MedicalHistory;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
date	date	NO		NULL	
conditions	varchar(100)	NO		NULL	
surgeries	varchar(100)	NO		NULL	
medication	varchar(100)	NO		NULL	

id	date	conditions	surgeries	medication
1	2019-01-14	Chest Pain	Open Heart Surgery	Crocin
2	2019-03-25	Ligament Tear	Ligament Operation	Combiflam
3	2019-06-23	Body Pain	none	Iodex
4	2019-09-24	Headache	none	Lanol
5	2019-08-30	Loose Motion	none	Emeset
6	2019-07-16	Gasritis	none	Gelusil
NULL	NULL	NULL	NULL	NULL

```
desc Doctor;
select * from Doctor;
```

Field	Type	Null	Key	Default	Extra
email	varchar(50)	NO	PRI	NULL	
gender	varchar(20)	NO		NULL	
password	varchar(30)	NO		NULL	
name	varchar(50)	NO		NULL	

email	gender	password	name
priyanshi1234@gmail.com	female	priyanshi@5678	Priyanshi Patel
rekha12345@gmail.com	female	rekha@1234	Rekha Adak
NULL	NULL	NULL	NULL

```
desc Appointment;
select * from Appointment;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
date	date	NO		NULL	
starttime	time	NO		NULL	
endtime	time	NO		NULL	
status	varchar(15)	NO		NULL	

id	date	starttime	endtime	status
1	2019-01-15	09:00:00	10:00:00	Done
2	2019-03-26	10:00:00	11:00:00	Done
3	2019-06-24	14:00:00	15:00:00	Done
4	2019-09-25	14:00:00	15:00:00	Pending
5	2019-08-31	14:00:00	15:00:00	Pending
6	2019-07-17	14:00:00	15:00:00	Pending
NULL	NULL	NULL	NULL	NULL

```
desc PatientsAttendAppointments;
select * from PatientsAttendAppointments;
```

Field	Type	Null	Key	Default	Extra
patient	varchar(50)	NO	PRI	NULL	
appt	int	NO	PRI	NULL	
concerns	varchar(40)	NO		NULL	
symptoms	varchar(40)	NO		NULL	

patient	appt	concerns	symptoms
aishwarya@gmail.com	6	muscle strain	shoulder injury
sayali@gmail.com	4	migraine	severe headache
siraj@gmail.com	3	nausea	fever
suraj@gmail.com	2	infection	fever
suyash@gmail.com	1	none	itchy throat
vaibhav@gmail.com	5	heart attack	chest pain
NULL	NULL	NULL	NULL

```
desc Schedule;
select * from Schedule;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
starttime	time	NO	PRI	NULL	
endtime	time	NO	PRI	NULL	
breaktime	time	NO	PRI	NULL	
day	varchar(20)	NO	PRI	NULL	

	id	starttime	endtime	breaktime	day
▶	1	09:00:00	17:00:00	12:00:00	Friday
	1	09:00:00	17:00:00	12:00:00	Monday
	1	09:00:00	17:00:00	12:00:00	Saturday
	1	09:00:00	17:00:00	12:00:00	Wednesday
	2	09:00:00	17:00:00	12:00:00	Saturday
	2	09:00:00	17:00:00	12:00:00	Sunday
	2	09:00:00	17:00:00	12:00:00	Thursday
	2	09:00:00	17:00:00	12:00:00	Tuesday
*	NULL	NULL	NULL	NULL	NULL

```
desc PatientsFillHistory;
select * from PatientsFillHistory;
```

	Field	Type	Null	Key	Default	Extra
▶	patient	varchar(50)	NO	MUL	NULL	
	history	int	NO	PRI	NULL	

	patient	history
▶	aishwarya@gmail.com	6
	sayali@gmail.com	4
	siraj@gmail.com	3
	suraj@gmail.com	2
	suyash@gmail.com	1
	vaibhav@gmail.com	5
*	NULL	NULL

```
desc Diagnose;
select * from Diagnose;
```

	Field	Type	Null	Key	Default	Extra
▶	appt	int	NO	PRI	NULL	
	doctor	varchar(50)	NO	PRI	NULL	
	diagnosis	varchar(40)	NO		NULL	
	prescription	varchar(50)	NO		NULL	

	appt	doctor	diagnosis	prescription
▶	1	rekha12345@gmail.com	Bloating	Ibuprofen as needed
	2	rekha12345@gmail.com	Muscle soreness	Stretch morning/night
	3	priyanshi1234@gmail.com	Vitamin Deficiency	Good Diet
	4	priyanshi1234@gmail.com	Irregular Stomach	Emeset
*	NULL	NULL	NULL	NULL

```
desc DocsHaveSchedules;
select * from DocsHaveSchedules;
```

	Field	Type	Null	Key	Default	Extra
▶	sched	int	NO	PRI	NULL	
	doctor	varchar(50)	NO	PRI	NULL	

	sched	doctor
▶	2	priyanshi1234@gmail.com
	1	rekha12345@gmail.com
*	NULL	NULL

```
desc DoctorViewsHistory;
select * from DoctorViewsHistory;
```

Field	Type	Null	Key	Default	Extra
▶ history	int	NO	PRI	NULL	
doctor	varchar(50)	NO	PRI	NULL	

	history	doctor
▶	4	priyanshi1234@gmail.com
	5	priyanshi1234@gmail.com
	6	priyanshi1234@gmail.com
	1	rekha12345@gmail.com
	2	rekha12345@gmail.com
	3	rekha12345@gmail.com
*	NULL	NULL

QUERY 2: Resize column name from Patient

```
alter table Patient modify column name varchar(100);
desc Patient;
```

Field	Type	Null	Key	Default	Extra
▶ email	varchar(50)	NO	PRI	NULL	
password	varchar(30)	NO		NULL	
name	varchar(100)	YES		NULL	
address	varchar(60)	NO		NULL	
gender	varchar(20)	NO		NULL	

QUERY 3: Rename table 'MedicalHistory' to 'PatientMedicalHistory'

```
alter table MedicalHistory rename PatientMedicalHistory;
select * from PatientMedicalHistory;
```

	id	date	conditions	surgeries	medication
▶	1	2019-01-14	Chest Pain	Open Heart Surgery	Crocin
	2	2019-03-25	Ligament Tear	Ligament Operation	Combiflam
	3	2019-06-23	Body Pain	none	Iodex
	4	2019-09-24	Headache	none	Lanol
	5	2019-08-30	Loose Motion	none	Emeset
	6	2019-07-16	Gasritis	none	Gelusil
*	NULL	NULL	NULL	NULL	NULL

QUERY 4: Update the value of status as 'Done' for appointment id 4

```
update Appointment set status = 'Done' where id = 4;
select * from Appointment;
```

id	date	starttime	endtime	status
1	2019-01-15	09:00:00	10:00:00	Done
2	2019-03-26	10:00:00	11:00:00	Done
3	2019-06-24	14:00:00	15:00:00	Done
4	2019-09-25	14:00:00	15:00:00	Done
5	2019-08-31	14:00:00	15:00:00	Pending
6	2019-07-17	14:00:00	15:00:00	Pending
NULL	NULL	NULL	NULL	NULL

QUERY 5: Show the records of Appointments handled by Rekha Adak (email – 'rekha12345@gmail.com') for Diagnosis

```
select * from Diagnose where doctor = 'rekha12345@gmail.com';
```

appt	doctor	diagnosis	prescription
1	rekha12345@gmail.com	Bloating	Ibuprofen as needed
2	rekha12345@gmail.com	Muscle soreness	Stretch morning/night
NULL	NULL	NULL	NULL

QUERY 6: Show the Medical History of Patients between 1/1/2019 and 30/06/2019

```
select * from PatientMedicalHistory where date between '2019-01-01' and '2019-06-30';
```

id	date	conditions	surgeries	medication
1	2019-01-14	Chest Pain	Open Heart Surgery	Crocin
2	2019-03-25	Ligament Tear	Ligament Operation	Combiflam
3	2019-06-23	Body Pain	none	Iodex
NULL	NULL	NULL	NULL	NULL

QUERY 7: Show the Patients Medical History by Ascending order of Date

```
select * from PatientMedicalHistory order by date asc;
```

id	date	conditions	surgeries	medication
1	2019-01-14	Chest Pain	Open Heart Surgery	Crocin
2	2019-03-25	Ligament Tear	Ligament Operation	Combiflam
3	2019-06-23	Body Pain	none	Iodex
6	2019-07-16	Gasritis	none	Gelusil
5	2019-08-30	Loose Motion	none	Emeset
4	2019-09-24	Headache	none	Lanol
NULL	NULL	NULL	NULL	NULL

QUERY 8: Show the Schedule of Rekha Adak

```
select * from Schedule where id = 1;
```

id	starttime	endtime	breaktime	day
1	09:00:00	17:00:00	12:00:00	Friday
1	09:00:00	17:00:00	12:00:00	Monday
1	09:00:00	17:00:00	12:00:00	Saturday
1	09:00:00	17:00:00	12:00:00	Wednesday
NULL	NULL	NULL	NULL	NULL

QUERY 9: Show the Number of Days passed for each patient whose appointment status is 'Done'

```sql
select id,datediff(curdate(),date) as No_of_days from Appointment where status = 'Done';
```

id	No_of_days
1	1902
2	1832
3	1742
4	1649

QUERY 10: Count the Number of 'Male' Patients admitted

```sql
select count(*) as No_of_Male_Patients from Patient where gender = 'Male';
```

No_of_Male_Patients
4

QUERY 11: Find doctors who have attended more than 1 appointment

```sql
select d.name as Doctor_Name,
count(*) as Total_Appointments_Diagnosed
from Diagnose dg
join Doctor d
on dg.doctor = d.email
group by d.name having count(*) > 1;
```

Doctor_Name	Total_Appointments_Diagnosed
Priyanshi Patel	2
Rekha Adak	2

QUERY 12: Find the patients who haven't attended any appointments

Updated 'Patient Table' with new record.

```sql
insert into Patient values('harshal@gmail.com','harshal7531','Harshal','Kolkata', 'male');
select * from Patient;
```

email	password	name	address	gender
aishwarya@gmail.com	aishwarya2468	Aishwarya	Chennai	female
harshal@gmail.com	harshal7531	Harshal	Kolkata	male
sayali@gmail.com	sayali8765	Sayali	Pune	female
siraj@gmail.com	siraj4321	Siraj	Delhi	male
suraj@gmail.com	suraj5678	Suraj	Lucknow	male
suyash@gmail.com	suyash1234	Suyash	Mumbai	male
vaibhav@gmail.com	vaibhav1357	Vaibhav	Lucknow	male
NULL	NULL	NULL	NULL	NULL

Execution of QUERY 12

```sql
select p.name as Patient_Name
from Patient p
left join PatientsAttendAppointments pa
on p.email = pa.patient
where pa.patient is null;
```

Patient_Name
Harshal

QUERY 13: Retrieve All Patients Appointments which are Still 'Pending' to be attended

```sql
select p.name as Patient_Name, a.date as Appointment_Date,
a.starttime as Start_Time, a.endtime as End_Time,
pa.concerns,pa.symptoms,a.status
from PatientsAttendAppointments pa
join Patient p on pa.patient = p.email
join Appointment a on pa.appt = a.id
where a.status = 'Pending';
```

Patient_Name	Appointment_Date	Start_Time	End_Time	concerns	symptoms	status
Vaibhav	2019-08-31	14:00:00	15:00:00	heart attack	chest pain	Pending
Aishwarya	2019-07-17	14:00:00	15:00:00	muscle strain	shoulder injury	Pending

QUERY 14: Find the Average Length of Appointments in minutes

```sql
select avg(timestampdiff(Minute,starttime,endtime))
as Avg_appointment_Length from Appointment;
```

| Avg_appointment_Length |
|------------------------|
| 60.0000 |

**QUERY 15: Retrieve all Doctors' Details along with their Schedules**

```sql
select d.name as Doctor_Name,s.starttime,s.endtime,s.day
from DocsHaveSchedules dhs
join Doctor d on dhs.doctor = d.email
join Schedule s on dhs.sched = s.id;
```

Doctor_Name	starttime	endtime	day
Priyanshi Patel	09:00:00	17:00:00	Saturday
Priyanshi Patel	09:00:00	17:00:00	Sunday
Priyanshi Patel	09:00:00	17:00:00	Thursday
Priyanshi Patel	09:00:00	17:00:00	Tuesday
Rekha Adak	09:00:00	17:00:00	Friday
Rekha Adak	09:00:00	17:00:00	Monday
Rekha Adak	09:00:00	17:00:00	Saturday
Rekha Adak	09:00:00	17:00:00	Wednesday

QUERY 16: Retrieve All appointments (Done or Pending) for Doctor 'Priyanshi Patel'

Inserting 2 new records in 'Diagnose' Table

```
insert into Diagnose values(5,'rekha12345@gmail.com','Sinus infection','Decongestant'),
(6,'priyanshi1234@gmail.com','Gangrene','Limb Replacement');
select * from Diagnose;
```

appt	doctor	diagnosis	prescription
1	rekha12345@gmail.com	Bloating	Ibuprofen as needed
2	rekha12345@gmail.com	Muscle soreness	Stretch morning/night
3	priyanshi1234@gmail.com	Vitamin Deficiency	Good Diet
4	priyanshi1234@gmail.com	Irregular Stomach	Emeset
5	rekha12345@gmail.com	Sinus infection	Decongestant
6	priyanshi1234@gmail.com	Gangrene	Limb Replacement
NULL	NULL	NULL	NULL

Execution of QUERY 16

```
select * from Appointment
where id in
(select appt from Diagnose where doctor = 'priyanshi1234@gmail.com');
```

id	date	starttime	endtime	status
3	2019-06-24	14:00:00	15:00:00	Done
4	2019-09-25	14:00:00	15:00:00	Done
6	2019-07-17	14:00:00	15:00:00	Pending
NULL	NULL	NULL	NULL	NULL

QUERY 17: Retrieve Patient Name and Email whose Medical History is viewed by Doctor 'Rekha Adak'

```
select p.name as Patient_Name,p.email as Patient_Email,
d.name as Doctor_Name, d.email as Doctor_Email
from Patient p
join PatientsFillHistory pfh on p.email = pfh.patient
join PatientMedicalHistory pmh on pfh.history = pmh.id
join DoctorViewsHistory dvh on pmh.id = dvh.history
join Doctor d on dvh.doctor = d.email
where d.email = 'rekha12345@gmail.com';
```

Patient_Name	Patient_Email	Doctor_Name	Doctor_Email
Suyash	suyash@gmail.com	Rekha Adak	rekha12345@gmail.com
Suraj	suraj@gmail.com	Rekha Adak	rekha12345@gmail.com
Siraj	siraj@gmail.com	Rekha Adak	rekha12345@gmail.com

QUERY 18: Retrieve Patients who have attended/ are attending appointments and their corresponding Doctors' Details

Updating Corresponding Tables with new Records

```
insert into PatientsAttendAppointments values('harshal@gmail.com',7,'Hip Injury','Unable to Walk Properly');
select * from PatientsAttendAppointments;
```

patient	appt	concerns	symptoms
aishwarya@gmail.com	6	muscle strain	shoulder injury
harshal@gmail.com	7	Hip Injury	Unable to Walk Properly
sayali@gmail.com	4	migraine	severe headache
siraj@gmail.com	3	nausea	fever
suraj@gmail.com	2	infection	fever
suyash@gmail.com	1	none	itchy throat
vaibhav@gmail.com	5	heart attack	chest pain
NULL	NULL	NULL	NULL

```
insert into Appointment values(7, '2019-10-23', '14:00', '15:00', 'Pending');
select * from Appointment;
```

id	date	starttime	endtime	status
1	2019-01-15	09:00:00	10:00:00	Done
2	2019-03-26	10:00:00	11:00:00	Done
3	2019-06-24	14:00:00	15:00:00	Done
4	2019-09-25	14:00:00	15:00:00	Done
5	2019-08-31	14:00:00	15:00:00	Pending
6	2019-07-17	14:00:00	15:00:00	Pending
7	2019-10-23	14:00:00	15:00:00	Pending
NULL	NULL	NULL	NULL	NULL

```
insert into Diagnose values(7,'abhay1357@gmail.com', 'Ear Pain', 'Enzoflam');
select * from Diagnose;
```

appt	doctor	diagnosis	prescription
1	rekha12345@gmail.com	Bloating	Ibuprofen as needed
2	rekha12345@gmail.com	Muscle soreness	Stretch morning/night
3	priyanshi1234@gmail.com	Vitamin Deficiency	Good Diet
4	priyanshi1234@gmail.com	Irregular Stomach	Emeset
5	rekha12345@gmail.com	Sinus infection	Decongestant
6	priyanshi1234@gmail.com	Gangrene	Limb Replacement
7	abhay1357@gmail.com	Ear Pain	Enzoflam
NULL	NULL	NULL	NULL

```
insert into Doctor values('abhay1357@gmail.com', 'male', 'abhay@0258', 'Abhay Pandey');
select * from Doctor;
```

email	gender	password	name
abhay1357@gmail.com	male	abhay@0258	Abhay Pandey
priyanshi1234@gmail.com	female	priyanshi@5678	Priyanshi Patel
rekha12345@gmail.com	female	rekha@1234	Rekha Adak
NULL	NULL	NULL	NULL

Execution of QUERY 18

```sql
select p.name as Patient_Name,p.email as Patient_Email,p.gender as Patient_Gender,
a.id as Appointment_Id,a.date as Appointment_Date, a.status as Appointment_Status,
d.name as Doctor_Name,d.email as Doctor_Email,d.gender as Doctor_Gender
from Patient p
join PatientsAttendAppointments paa on p.email = paa.patient
join Appointment a on paa.appt = a.id
join Diagnose dg on a.id = dg.appt
join Doctor d on dg.doctor = d.email;
```

Patient_Name	Patient_Email	Patient_Gender	Appointment_Id	Appointment_Date	Appointment_Status	Doctor_Name	Doctor_Email	Doctor_Gender
Harshal	harshal@gmail.com	male	7	2019-10-23	Pending	Abhay Pandey	abhay1357@gmail.com	male
Aishwarya	aishwarya@gmail.com	female	6	2019-07-17	Pending	Priyanshi Patel	priyanshi1234@gmail.com	female
Sayali	sayali@gmail.com	female	4	2019-09-25	Done	Priyanshi Patel	priyanshi1234@gmail.com	female
Siraj	siraj@gmail.com	male	3	2019-06-24	Done	Priyanshi Patel	priyanshi1234@gmail.com	female
Vaibhav	vaibhav@gmail.com	male	5	2019-08-31	Pending	Rekha Adak	rekha12345@gmail.com	female
Suraj	suraj@gmail.com	male	2	2019-03-26	Done	Rekha Adak	rekha12345@gmail.com	female
Suyash	suyash@gmail.com	male	1	2019-01-15	Done	Rekha Adak	rekha12345@gmail.com	female

QUERY 19: Retrieve details of Patients whose appointments are 'pending' and are scheduled in the second half of 2019 along with their scheduled appointment dates

```sql
select p.*,a.status,a.date
from Patient p
join PatientsAttendAppointments pa on p.email = pa.patient
join Appointment a on pa.appt = a.id
where a.status = 'Pending'
and month(a.date) between 7 and 12;
```

email	password	name	address	gender	status	date
vaibhav@gmail.com	vaibhav1357	Vaibhav	Lucknow	male	Pending	2019-08-31
aishwarya@gmail.com	aishwarya2468	Aishwarya	Chennai	female	Pending	2019-07-17
harshal@gmail.com	harshal7531	Harshal	Kolkata	male	Pending	2019-10-23

QUERY 20: Retrieve details of Doctors who have Diagnosed Patients in the first half of 2019

```sql
select distinct d.*
from Doctor d
join Diagnose dg on d.email = dg.doctor
join appointment a on dg.appt = a.id
where year(a.date) = 2019
and month(a.date) between 1 and 6;
```

email	gender	password	name
priyanshi1234@gmail.com	female	priyanshi@5678	Priyanshi Patel
rekha12345@gmail.com	female	rekha@1234	Rekha Adak

QUERY 21: List all patients whose appointment has been scheduled but have not attended

Adding new Column 'Attended' in 'PatientsAttendAppointments' and Updating Values

```
alter table PatientsAttendAppointments add Attended varchar(10);
update PatientsAttendAppointments set Attended = 'Yes' where appt = 1;
update PatientsAttendAppointments set Attended = 'Yes' where appt = 2;
update PatientsAttendAppointments set Attended = 'Yes' where appt = 3;
update PatientsAttendAppointments set Attended = 'Yes' where appt = 4;
update PatientsAttendAppointments set Attended = 'No' where appt = 5;
update PatientsAttendAppointments set Attended = 'No' where appt = 6;
update PatientsAttendAppointments set Attended = 'No' where appt = 7;
select * from PatientsAttendAppointments;
```

patient	appt	concerns	symptoms	Attended
aishwarya@gmail.com	6	muscle strain	shoulder injury	No
harshal@gmail.com	7	Hip Injury	Unable to Walk Properly	No
sayali@gmail.com	4	migraine	severe headache	Yes
siraj@gmail.com	3	nausea	fever	Yes
suraj@gmail.com	2	infection	fever	Yes
suyash@gmail.com	1	none	itchy throat	Yes
vaibhav@gmail.com	5	heart attack	chest pain	No
NULL	NULL	NULL	NULL	NULL

Execution of QUERY 21

```
select p.*,a.status,pa.Attended
from Patient p
join PatientsAttendAppointments pa on p.email = pa.patient
join Appointment a on pa.appt = a.id
where pa.Attended = 'No';
```

email	password	name	address	gender	status	Attended
aishwarya@gmail.com	aishwarya2468	Aishwarya	Chennai	female	Pending	No
harshal@gmail.com	harshal7531	Harshal	Kolkata	male	Pending	No
vaibhav@gmail.com	vaibhav1357	Vaibhav	Lucknow	male	Pending	No

QUERY 22: Retrieve Top 3 Appointments along with the latest dates, Appointment Status and the patient appointment attendance (Using Sub- Queries and Window Functions)

```
select * from
(select a.id as Appointment_ID, a.date as Appointment_Date,a.starttime as Start_Time, a.endtime as End_Time, a.status as Status,
p.email as Patient_Email,p.name as Patient_Name,p.gender as Patient_Gender,paa.Attended as Appointment_Attendance,
row_number() over(order by a.date desc) as RowNum
from Appointment a
join PatientsAttendAppointments paa on a.id = paa.appt
join Patient p on paa.patient = p.email)
as SubQuery
where RowNum <= 3;
```

Appointment_ID	Appointment_Date	Start_Time	End_Time	Status	Patient_Email	Patient_Name	Patient_Gender	Appointment_Attendance	RowNum
7	2019-10-23	14:00:00	15:00:00	Pending	harshal@gmail.com	Harshal	male	No	1
4	2019-09-25	14:00:00	15:00:00	Done	sayali@gmail.com	Sayali	female	Yes	2
5	2019-08-31	14:00:00	15:00:00	Pending	vaibhav@gmail.com	Vaibhav	male	No	3