

Hospital Management

Optimizing Operations for
Better Patient Care.

Presented By -
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Introduction

The Hospital Management System (HMS) is designed to manage hospital operations efficiently, covering patient records, doctor appointments, and billing.

Objective

- Efficient management of patient records
- Appointment scheduling
- Secure and reliable data handling
- Improved hospital workflow



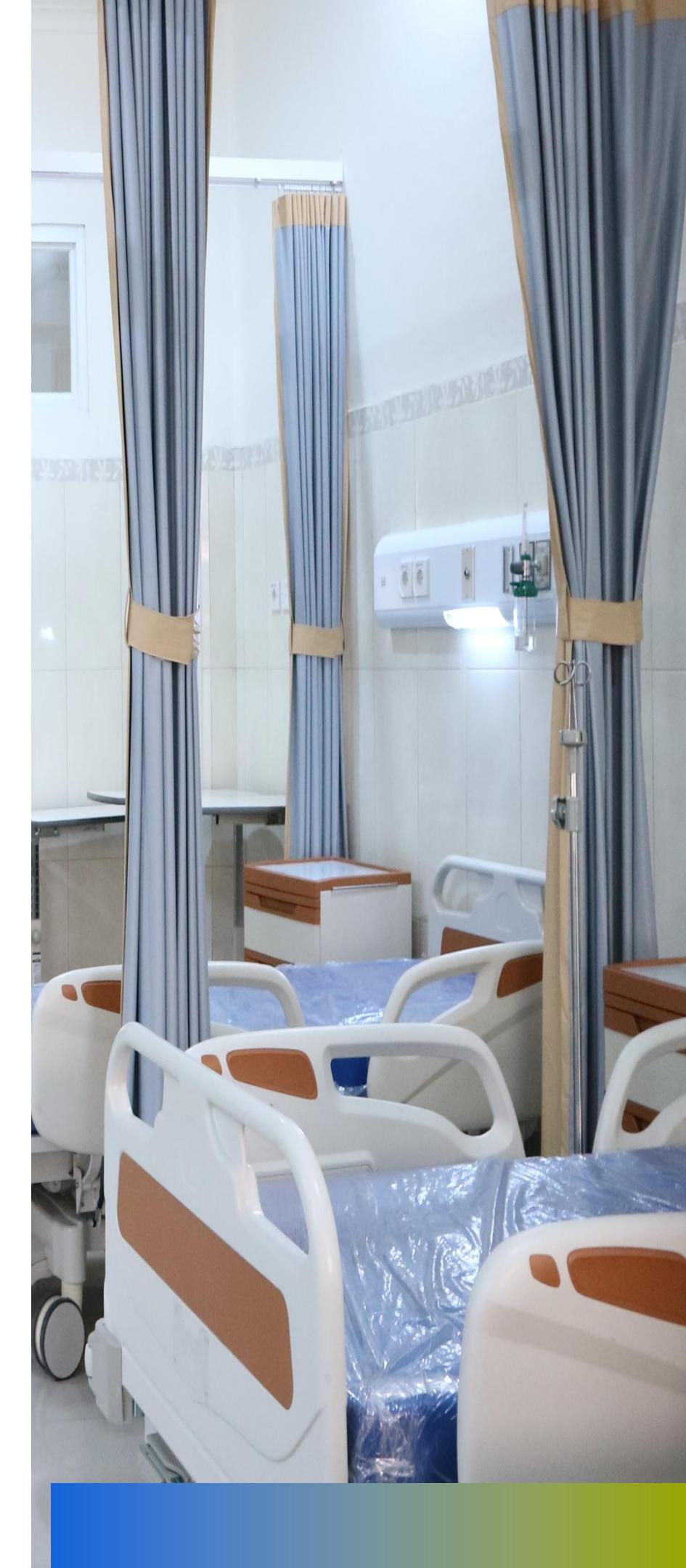
Database Structure

1) Doctor:-

name	email	spec	docFees
Dr.Ashok	ashok@gmail.com	General	500
Dr.Arun	arun@gmail.com	Cardiologist	600
Dr.Dinesh	dinesh@gmail.com	General	700
Dr.Ganesh	ganesh@gmail.com	Pediatrician	550
Dr.Kumar	kumar@gmail.com	Pediatrician	800
Dr.Amit	amit@gmail.com	Cardiologist	1000
Dr.Abbis	abbis@gmail.com	Neurologist	1500
Dr.Tiwarey	tiwary@gmail.com	Pediatrician	450

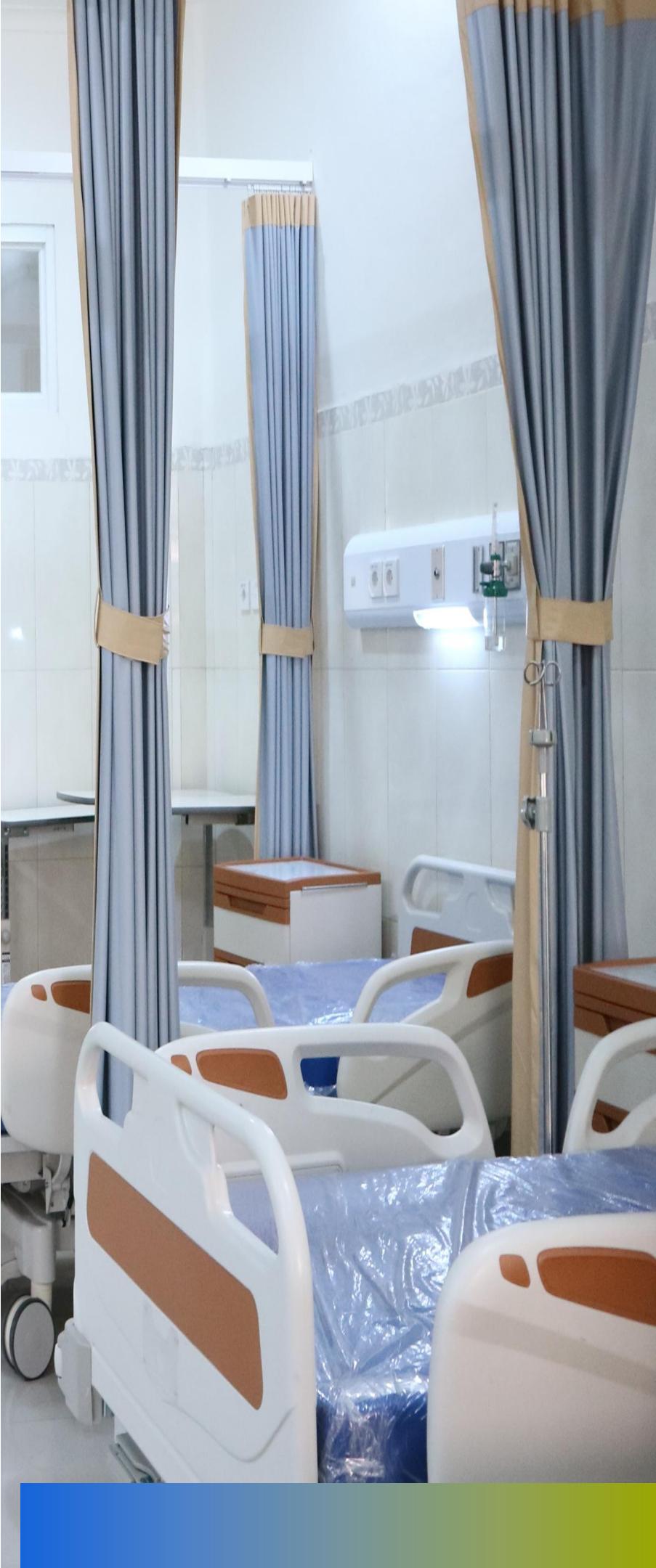
2) Patients:-

pid	fname	lname	gender	email	contact
1	Ram	Kumar	Male	ram@gmail.com	9876543210
2	Alia	Shah	Female	alia@gmail.com	8976897689
3	Nitin	Kumar	Male	nitink@gmail.com	8976898463
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
5	Gautam	Shankararam	Male	gautam@gmail.com	9070897653
6	Sushant	Singh	Male	sushant@gmail.com	9059986865
7	Komal	Sharma	Female	komals@gmail.com	9128972454
8	Shivam	Jadhav	Male	shivamjadhav@gmail.com	9809879868
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153
10	Peter	Norvig	Male	peter@gmail.com	9609362815
11	Shraddha	Pawar	Female	shraddha@gmail.com	9768946252



3) Appointments:-

pid	fname	lname	gender	email	contact	doctor	docFees	appdate	apptime	userStatus	doctorStatus
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Ganesh	550	2020-02-14	10:00:00	1	0
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Dinesh	700	2020-02-28	10:00:00	0	1
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Amit	1000	2020-02-19	03:00:00	0	1
11	Shraddha	Pawar	Female	shraddha@gmail.com	9768946252	Dr.Ashok	500	2020-02-29	20:00:00	1	1
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Dinesh	700	2020-02-28	12:00:00	1	1
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Ganesh	550	2020-02-26	15:00:00	0	1
2	Alia	Shah	Female	alia@gmail.com	8976897689	Dr.Ganesh	550	2020-03-21	10:00:00	1	1
5	Gautam	Shankararam	Male	gautam@gmail.com	9070897653	Dr.Ganesh	550	2020-03-19	20:00:00	1	0
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Ganesh	550	2020-02-01	14:00:00	1	0
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Dinesh	700	2020-03-27	15:00:00	1	1
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Kumar	800	2020-03-26	12:00:00	1	1
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Tiwary	450	2020-03-26	14:00:00	1	1



4) Prescription:-

doctor	pid	fname	lname	appdate	apptime	disease	allergy	prescription
Dr.Dinesh	4	Kishan	Lal	2020-03-27	15:00:00	Cough	Nothing	Just take a teaspoon of Benadryl every night
Dr.Ganesh	2	Alia	Shah	2020-03-21	10:00:00	Severe Fever	Nothing	Take bed rest
Dr.Kumar	9	Sunil	Kumar	2020-03-26	12:00:00	Sever fever	nothing	Paracetamol -> 1 every morning and night
Dr.Tiwary	9	Sunil	Kumar	2020-03-26	14:00:00	Cough	Skin dryness	Intake fruits with more water content

5) Contact:-

name	email	contact	message
Anu	anu@gmail.com	7896677554	Hey Admin
Viki	viki@gmail.com	9899778865	Good Job, Pal
Ananya	ananya@gmail.com	9997888879	How can I reach you?
Aakash	aakash@gmail.com	8788979967	Love your site
Mani	mani@gmail.com	8977768978	Want some coffee?
Karthick	karthi@gmail.com	9898989898	Good service
Abbis	abbis@gmail.com	8979776868	Love your service
Asiq	asiq@gmail.com	9087897564	Love your service. Thank you!
Jane	jane@gmail.com	7869869757	I love your service!

Basic Questions

Q.1 Find all distinct patient names who have booked an appointment.

Query :- select distinct fname, lname from appointmenttb;

Conclusion: helps in understanding the total number of unique patients who have booked the appointment.

Output:

fname	lname
Kishan	Lal
Shraddha	Pawar
Alia	Shah
Gautam	Shankararam
Sunil	Kumar

Q.2 List all appointments scheduled for a date '2020-03-26'.

Query:- select * from appointmenttb where appdate = '2020-03-26';

Output:

pid	fname	lname	gender	email	contact	doctor	docFees	appdate	apptime	userstatus	doctorstatus
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Kumar	800	2020-03-26	12:00:00	1	1
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Tiwary	450	2020-03-26	14:00:00	1	1

Conclusion: Helps in identifying patients with scheduled visits.

Q.3 Find all male patients

Query :- select * from patreg where gender = 'Male';

Conclusion: Filters the patreg table to show only male patients..

pid	fname	lname	gender	email	contact
1	Ram	Kumar	Male	ram@gmail.com	9876543210
3	Nitin	Kumar	Male	nitink@gmail.com	8976898463
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
5	Gautam	Shankararam	Male	gautam@gmail.com	9070897653
6	Sushant	Singh	Male	sushant@gmail.com	9059986865
8	Shivam	Jadhav	Male	shivamjadhav@gmail.com	9809879868
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153
10	Peter	Norvig	Male	peter@gmail.com	9609362815

Q.4 Get details of all appointments where both user and doctor status is active (1).'

Query:- select * from appointmenttb
where userstatus = 1 and doctorstatus = 1;

Conclusion: Useful for identifying active appointments that are successfully scheduled.

Output:

pid	fname	lname	gender	email	contact	doctor	docFees	appdate	apptime	userStatus	doctorStatus
11	Shraddha	Pawar	Female	shraddha@gmail.com	9768946252	Dr.Ashok	500	2020-02-29	20:00:00	1	1
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Dinesh	700	2020-02-28	12:00:00	1	1
2	Alia	Shah	Female	alia@gmail.com	8976897689	Dr.Ganesh	550	2020-03-21	10:00:00	1	1
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464	Dr.Dinesh	700	2020-03-27	15:00:00	1	1
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Kumar	800	2020-03-26	12:00:00	1	1
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153	Dr.Tiwary	450	2020-03-26	14:00:00	1	1

Q.5 Retrieve the total number of doctors available.

Query :- `select count(*) as doctor_count from doctb;`

doctor_count
8

Conclusion: Helps in determining the total number of doctors available.

Advanced Questions

Q.1 Find the total earnings of each doctor from appointments.

```
Query :- select doctor, sum(docfees) as total_earnings  
        from appointmenttb  
        group by doctor;
```

Conclusion:- This query calculates how much each doctor has earned based on their consultation fees.

Output:

doctor	total_earnings
Dr.Ganesh	2750
Dr.Dinesh	2100
Dr.Amit	1000
Dr.Ashok	500
Dr.Kumar	800
Dr.Tiwary	450

Q.2 Retrieve all patients who have booked more than one appointment.

```
Query:- select pid, fname, lname, count(*) as  
        appointment_count  
        from appointmenttb  
        group by pid, fname, lname  
        having count(*) > 1;
```

Conclusion: Identifies repeat patients who might need continuous medical attention.

Output:

pid	fname	lname	appointment_count
4	Kishan	Lal	7
9	Sunil	Kumar	2

Q.3 Find the patients who have consulted the most number of doctors.

```
Query :- select pid, fname, lname, count(distinct doctor) as doctor_count  
from appointmentb  
group by pid, fname, lname  
order by doctor_count desc;
```

Conclusion: Helps track patients who may be seeking opinions from multiple doctors.

Output:

pid	fname	lname	doctor_count
4	Kishan	Lal	3
9	Sunil	Kumar	2
2	Alia	Shah	1
5	Gautam	Shankararam	1
11	Shraddha	Pawar	1

Q.4 Find the most frequently occurring disease in prescriptions.

```
Query:- select disease, count(*) as occurrence  
from prestb  
group by disease  
order by occurrence desc  
limit 1;
```

Conclusion: Helps in understanding common health issues among patients.

Output:

disease	occurrence
Cough	2

Q.5 List all patients who have the same email in both patient and appointment.

```
Query :- select p.*  
from patreg p  
join appointmenttb a on p.email = a.email;
```

Output:

pid	fname	lname	gender	email	contact
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
11	Shraddha	Pawar	Female	shraddha@gmail.com	9768946252
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
2	Alia	Shah	Female	alia@gmail.com	8976897689
5	Gautam	Shankararam	Male	gautam@gmail.com	9070897653
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
4	Kishan	Lal	Male	kishansmart0@gmail.com	8838489464
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153
9	Sunil	Kumar	Male	sunil@gmail.com	8683619153

Conclusion: This verifies consistency between the patient registry and appointment records.

Complex Questions

Q.1 Retrieve the patient name and the total number of appointments they booked, ranking them in descending order.

Query :- select pid, fname, lname, count(*) as total_appointments, dense_rank() over (order by count(*) desc) as ranked from appointmenttb group by pid, fname, lname;

Conclusion:- This query ranks patients based on the number of appointments, which helps identify frequent visitors.

Output:

pid	fname	lname	total_appointments	ranked
4	Kishan	Lal	7	1
9	Sunil	Kumar	2	2
11	Shraddha	Pawar	1	3
2	Alia	Shah	1	3
5	Gautam	Shankararam	1	3

Q.2 Find all patients who have spent more than the average consultation fee.

Query :- select pid, fname, lname, sum(docFees) as total_spent from appointmenttb group by pid, fname, lname having total_spent > (select avg(docFees) from appointmenttb);

Conclusion:- This query identifies patients who have spent more than the average consultation fee, helping in financial analysis and patient categorization.

Output:

pid	fname	lname	total_spent
4	Kishan	Lal	4750
9	Sunil	Kumar	1250

Q.3 Retrieve the doctor(s) who have the highest number of appointments.

```
Query :- select doctb.name, doctb.spec, count(appointmenttb.pid) as  
total_appointments  
from doctb  
join appointmenttb on doctb.name = appointmenttb.doctor  
group by doctb.name, doctb.spec  
having count(appointmenttb.pid) = (  
    select max(appointment_count)  
    from (  
        select count(pid) as appointment_count  
        from appointmenttb  
        group by doctor  
    ) as temp  
);
```

Output:

name	spec	total_appointments
Dr . Ganesh	Pediatrician	5

Conclusion: Identifies the doctor with the most appointments, which may indicate high demand for their services.



Conclusion

- It enables easy tracking of consultations, doctor fees, and patient records while supporting complex queries for data insights.
- Efficiently handling patients, doctors, appointments, prescriptions, and feedback.
- Future Improvement.



A large, modern hospital building with a light-colored stone or concrete exterior and a glass-enclosed entrance. The word "HOSPITAL" is written in large blue letters, with "Complex" in smaller letters below it. The building has multiple stories with glass railings on the balconies. A small tree stands in front of the entrance.

**Thank You for
Your Attention**