



INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON **Hospital Database** **Management Using SQL.**

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About me

- **Name :-** Rohan Santosh Chauthe .
- **Education :-** G. H. Rasoni college of engineering and business management ,Jalgaon.
- **Why I Want To Learn Data Science :-**
 - I want to learn data science because ,I've always been curious about how companies makes the decision about what customers likes or dislikes ,that urge of knowing how this decision making works in companies created my interest in data science .
- **Connect With Me :-**
 - LinkedIn** - www.linkedin.com/in/rohanchauthe
 - GitHub** - <https://github.com/Rohanchauthe>

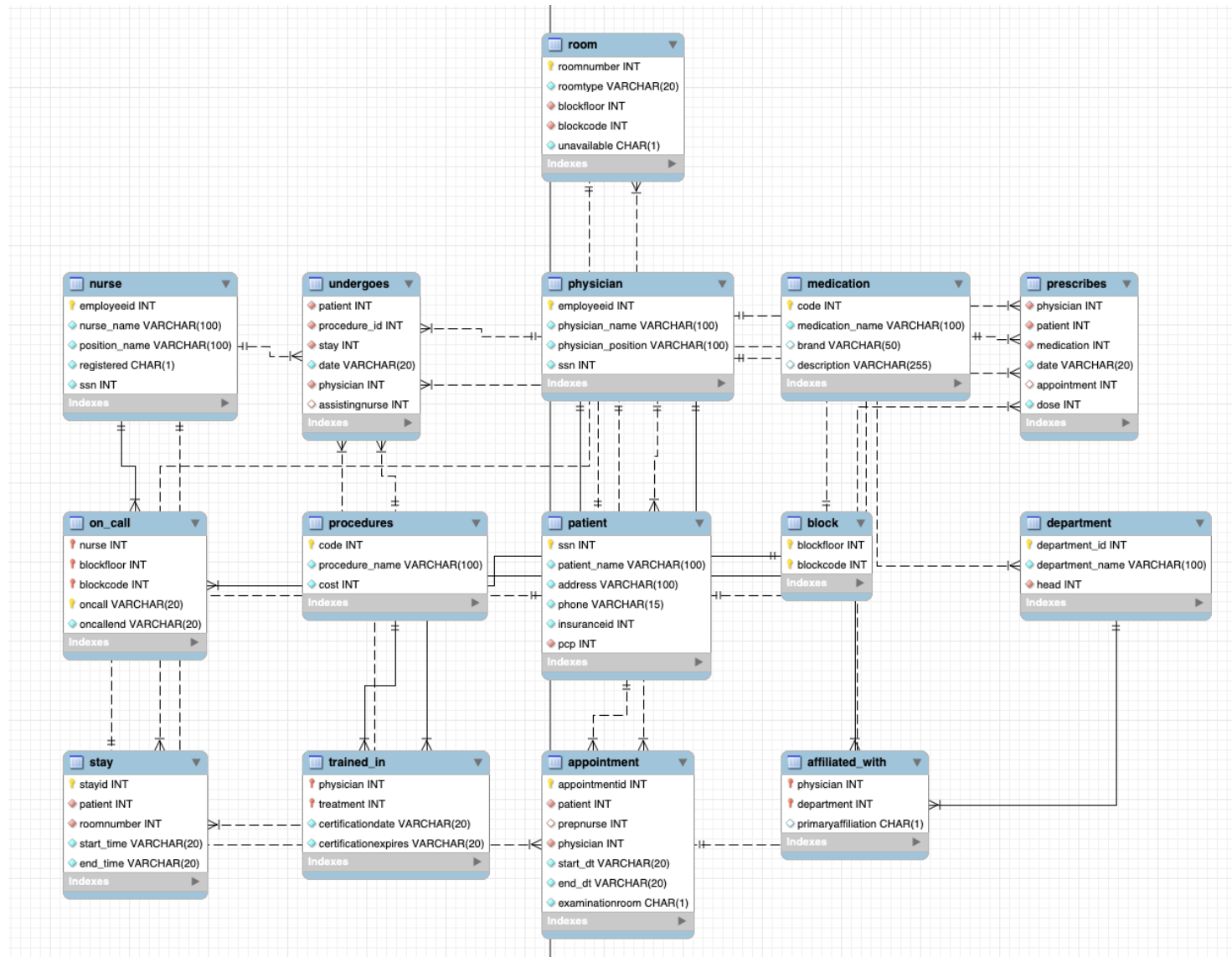
Business Objectives

- In this Project ,by Analysing the Hospital Database Management to uncover how hospitals store and manage patient records, appointments, staff details, and medical data.
- By analyzing the database structure and its functions, it uncovered how different hospital departments work together and how data can be used to enhance efficiency, security, and overall patient care.

Approach of Business Objective

- To analyse patient, physician, appointment, and medical records using SQL queries.
- To identify relationships between hospital entities such as patients, staff, rooms, and treatments.
- To enhance security, confidentiality, and accessibility of sensitive medical information.
- To optimise hospital workflows by generating useful reports through SQL queries.

ER DIAGRAM



Patients with their physician by whom they got their preliminary treatment.

```
select p.patient_name,  
py.physician_name as priliminary_treatment_physician  
from patient p  
left join physician py  
on p.pcp = py.employeeid;
```

INSIGHTS :-

- Most of the preliminary treatments are done by attending physician.
- Only highly prior patients are attended by surgical attending physician .

	patient_name	priliminary_treatment_physician	physician_position
	John Smith	John Dorian	Staff Internist
	Grace Ritchie	Elliot Reid	Attending Physician
	Random J. Patient	Elliot Reid	Attending Physician
	Dennis Doe	Christopher Turk	Surgical Attending Physician

Patients and number of physicians they have taken appointment.

```
select p.patient_name,  
count(a.physician) as number_of_physicians  
from patient p  
join appointment a  
on p.pcp= a.physician  
group by p.patient_name;
```

INSIGHTS :-

- Patients approached Physician “Elliot Reid” for treatments more than any physician .
- Christopher Turk has the lowest appointments .

	patient_name	number_of_physicians	physician_name
	John Smith	2	John Dorian
	Grace Ritchie	3	Elliot Reid
	Random J. Patient	3	Elliot Reid
	Dennis Doe	1	Christopher Turk

Name of the patients, their block, floor, and room number where they are admitted.

```
select p.patient_name,  
b.blockcode,  
b.blockfloor,  
r.roomnumber  
from stay s  
left join patient p  
on s.patient = p.ssn  
left join room r  
on s.roomnumber = r.roomnumber  
left join block b  
on r.blockcode = b.blockcode  
and r.blockfloor = b.blockfloor;
```

INSIGHTS :-

- Most of the Patients got allotted on first floor rooms for medical procedures.
- According to the data most of the patients got admitted in the hospital for the treatments .

	patient_name	blockcode	blockfloor	roomnumber
	John Smith	2	1	111
	Random J. Patient	3	1	123
	Dennis Doe	2	1	112

Details of physicians who completed a medical procedure after the expiration of their certificate.

```
SELECT
  py.physician_name,
  py.physician_position,
  p.patient_name,
  pr.procedure_name,
  u.date AS procedure_date,
  t.certificationexpires
FROM patient p
JOIN undergoes u
  ON u.patient = p.ssn
JOIN physician py
  ON py.employeeid = u.physician
JOIN procedures pr
  ON pr.code = u.procedure_id
JOIN trained_in t
  ON t.physician = py.employeeid
  AND t.treatment = pr.code      -- IMPORTANT join condition!
WHERE u.date > t.certificationexpires
order by t.certificationexpires asc limit 1;
```

INSIGHTS :-

- As per the data some physicians performs medical procedures after expiration of their certificate.
- Every physician has a expiry for their certifications.

	physician_name	physician_position	patient_name	procedure_name	procedure_date	certificationexpires
	Todd Quinlan	Surgical Attending Physician	Dennis Doe	Obfuscated Dermogastrotomy	9/5/2008	31/12/2007

Experiences And Challenges

Experiences :-

- I had a great experience learning the insights of hospital database management .
- Managed to enhance my MySQL skills through analysing this database .
- Learned about the how hospital management works together and manages the patients ,physician ,departments and appointments all together .

Challenges :-

- During Designing this database their was a difficulty to join the multiple tables .
- Handling the errors of incorrect joins.

Conclusions and Recommendations

- The MySQL database system improved hospital data management by centralising patient, staff, appointment, and medication records.
- It improved patient services through better scheduling, record tracking, and faster response time.
- Implement automated alerts for appointments, medication schedules, and medicines stock levels.
- Enhance the system by linking mobile/online portals for patient self-service such as booking and reports.

THANK YOU

