WELCOME

HOSPITAL MANAGEMENT SYSTEM

TEAM NAME : TEAM_TETRA

SUBMITTED FROM

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SECTION : D1

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INTRODUCTION

A Hospital Management Database System designed to streamline hospital operations and enhance patient care through efficient, structured data management.

- PROJECT OVERVIEW
- THE NECESSITY OF THE SYSTEM
- UNIQUE CHARACTERISTICS
- INTENDED USERS OF THE SYSTEM
- ACADEMIC AND RESEARCH USE
- BENEFITS FOR HUMANITARIAN AND PUBLIC HEALTH SERVICES
- LONG-TERM BENEFITS FOR THE FUTURE

TABLE OVERVIEW

There are 12 tables in this database

- **Department** – Info on medical departments
- **Doctor** – Doctor roles and details
- **Staff** – Staff identification data
- **Patient** – Patient records and history
- **Appointment** – Patient-doctor scheduling
- **LabTest** – Medical test records
- **Surgery** – Surgical procedure tracking
- **Ward** – Ward-based patient info
- **MedicalStore** – Medicine and stock details
- **Vaccination** – Patient immunization data
- **Billing** – Service charges and payments
- **HospitalAsset** – Equipment and asset tracking

DEPARTMENT TABLE

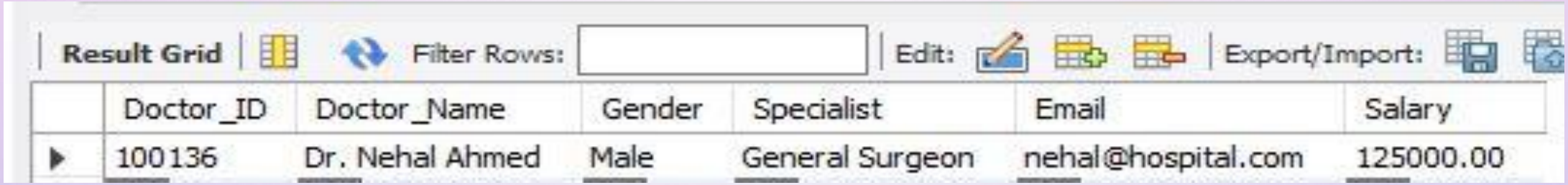
- SELECT * FROM DEPARTMENT;

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Department_ID	Department_Name	Department_Head	Number_of_Staffs	Number_of_Beds	Email	Phone
1001	Cardiology	Prof. Dr. Salima Akter	50	100	cardiology392@gmail.com	01923678910
1002	Neurology	Prof. Dr. Rezaul Karim	50	70	neurology246@gmail.com	01739895922
1003	Orthopedics	Prof. Dr. Ahsan Habib	10	1000	Orthopedics883@gmail.com	01344499850
1004	Gynecology	Prof. Dr. Mithu Rahman	35	70	gynecology302@gmail.com	01737568910
1005	General Surgery	Prof. Dr. Kamrul Islam	20	60	surgery406@gmail.com	01523458910
1006	Hematology	Prof. Dr. Mahbuba Sultana	35	70	hematology888@gmail.com	01924044910
1007	Plastic Surgery	Prof. Dr. Tanvir Ahmed	15	50	plasticsurgery122@gmail.com	01347896891
1008	Dental Surgery	Prof. Dr. Shirin Jahan	45	50	dentalunit763@gmail.com	01553678910
1009	Oncology	Prof. Dr. Nazmul Huda	25	70	oncology999@gmail.com	01553367891
1010	Rehabilitation Medicine	Prof. Dr. Nusrat Amin	25	60	rehabcenter222@gmail.com	01323678910
1011	Biomedical Engineering	Prof. Dr. Imran Kabir	30	20	biomedical193@gmail.com	01623678910
1012	Psychiatric	Prof. Dr. Sujan Chowdhury	66	70	psychiatric555@gmail.com	01923878910
1013	Radiology	Prof. Dr. Munira Khatun	16	90	radiology639@gmail.com	01923688910
1014	ENT (Ear, Nose, Throat)	Prof. Dr. Abdul Hamid	56	70	ent54@gmail.com	01623677910
1015	Medical Education	Prof. Dr. Lubna Rahman	36	50	medicaledu44@gmail.com	01623678710

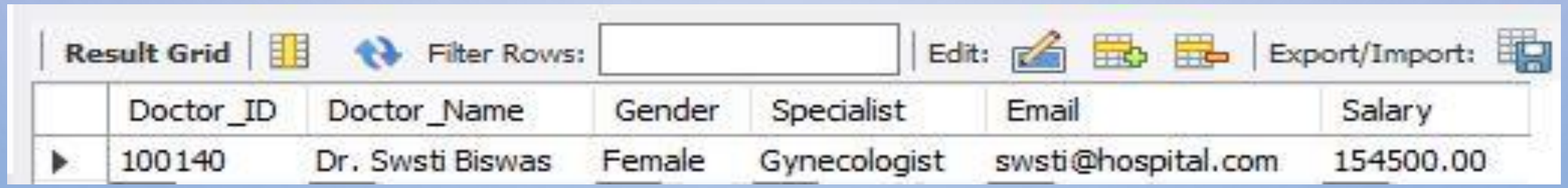
DOCTOR TABLE

```
SELECT * FROM DOCTOR WHERE DOCTOR_ID = 100136;
```



Doctor_ID	Doctor_Name	Gender	Specialist	Email	Salary
100136	Dr. Nehal Ahmed	Male	General Surgeon	nehal@hospital.com	125000.00

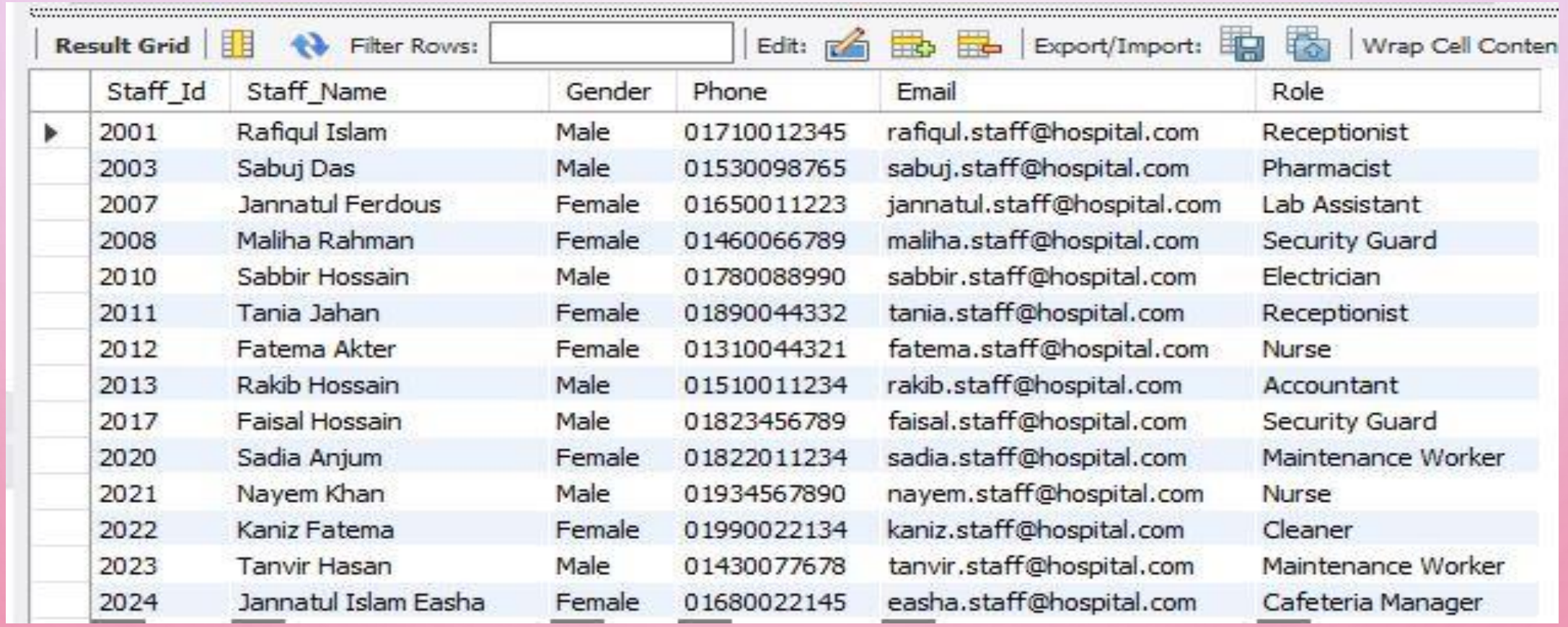
```
SET SQL_SAFE_UPDATES=0;

UPDATE DOCTOR

SET SALARY = SALARY - 4500

WHERE DOCTOR_ID = 100140;

SELECT * FROM DOCTOR WHERE DOCTOR_ID = 100140;
```



Doctor_ID	Doctor_Name	Gender	Specialist	Email	Salary
100140	Dr. Swsti Biswas	Female	Gynecologist	swsti@hospital.com	154500.00

STAFF TABLE

SELECT * FROM STAFF WHERE STAFF_NAME LIKE '_A%';

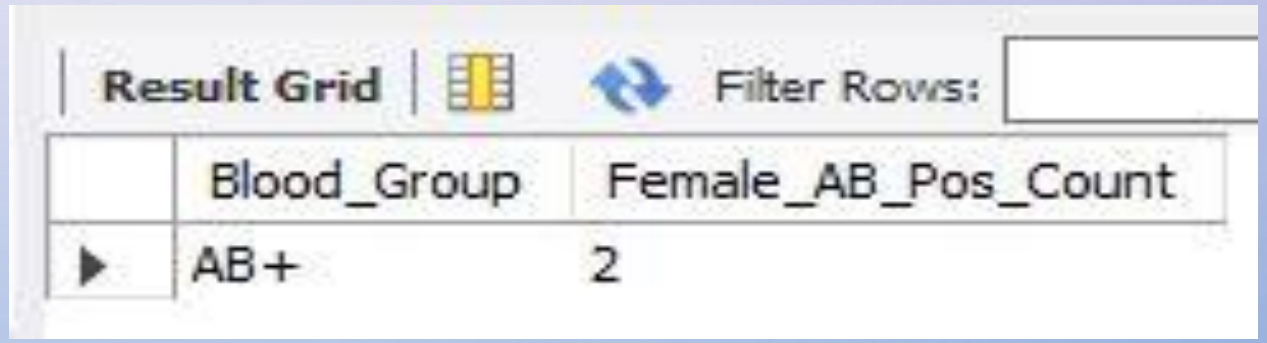


Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Conten

Staff_Id	Staff_Name	Gender	Phone	Email	Role
2001	Rafiqul Islam	Male	01710012345	rafiqul.staff@hospital.com	Receptionist
2003	Sabuj Das	Male	01530098765	sabuj.staff@hospital.com	Pharmacist
2007	Jannatul Ferdous	Female	01650011223	jannatul.staff@hospital.com	Lab Assistant
2008	Maliha Rahman	Female	01460066789	maliha.staff@hospital.com	Security Guard
2010	Sabbir Hossain	Male	01780088990	sabbir.staff@hospital.com	Electrician
2011	Tania Jahan	Female	01890044332	tania.staff@hospital.com	Receptionist
2012	Fatema Akter	Female	01310044321	fatema.staff@hospital.com	Nurse
2013	Rakib Hossain	Male	01510011234	rakib.staff@hospital.com	Accountant
2017	Faisal Hossain	Male	01823456789	faisal.staff@hospital.com	Security Guard
2020	Sadia Anjum	Female	01822011234	sadia.staff@hospital.com	Maintenance Worker
2021	Nayem Khan	Male	01934567890	nayem.staff@hospital.com	Nurse
2022	Kaniz Fatema	Female	01990022134	kaniz.staff@hospital.com	Cleaner
2023	Tanvir Hasan	Male	01430077678	tanvir.staff@hospital.com	Maintenance Worker
2024	Jannatul Islam Easha	Female	01680022145	easha.staff@hospital.com	Cafeteria Manager

PATIENT TABLE

```
SELECT BLOOD_GROUP, COUNT(*) AS FEMALE_AB_POS_COUNT FROM PATIENT
WHERE BLOOD_GROUP = 'AB+'
 AND GENDER = 'FEMALE'
 AND DATE_OF_BIRTH > '1980-01-01'
GROUP BY BLOOD_GROUP;
```



APPOINTMENT TABLE

```
SELECT * FROM APPOINTMENT WHERE APPOINTMENT_DATE = ( SELECT
MIN(APPOINTMENT_DATE)
FROM APPOINTMENT );
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Appointment_ID	Patient_ID	Doctor_ID	Appointment_time	Appointment_Date	Status
101	3001	100131	09:00:00	2025-05-02	Scheduled
102	3002	100132	09:30:00	2025-05-02	Cancelled
103	3003	100133	10:00:00	2025-05-02	Rescheduled
104	3004	100134	10:30:00	2025-05-02	Completed
105	3005	100135	11:00:00	2025-05-02	Scheduled
106	3006	100136	11:30:00	2025-05-02	No Show
107	3007	100137	12:00:00	2025-05-02	Completed
108	3008	100138	12:30:00	2025-05-02	Cancelled
109	3009	100139	13:00:00	2025-05-02	Scheduled
110	3010	100140	13:30:00	2025-05-02	Rescheduled
111	3011	100141	14:00:00	2025-05-02	Completed
112	3012	100142	14:30:00	2025-05-02	Scheduled
113	3013	100143	15:00:00	2025-05-02	Cancelled
114	3014	100144	15:30:00	2025-05-02	No Show

LAB TEST TABLE

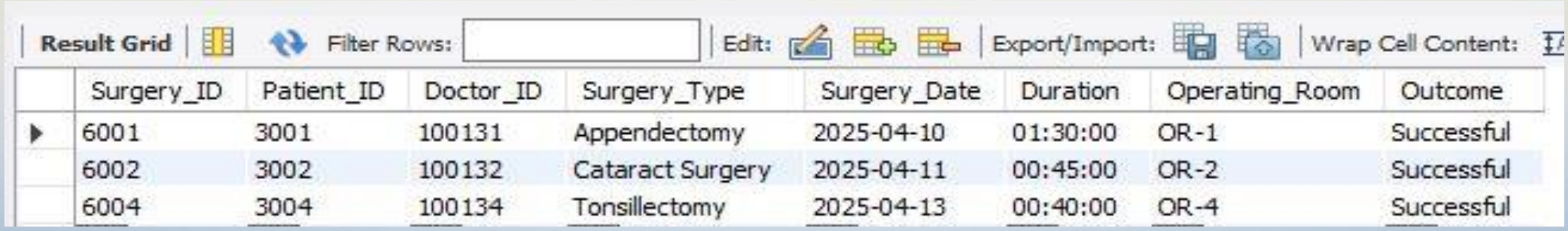
```
SELECT *FROM LABTEST

WHERE TEST_NAME NOT LIKE '%BLOOD%';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Lab_Technician_ID	Test_ID	Patient_ID	Test_Name	Test_Type	Test_Date	Result	Cost
203	5003	3003	Urinalysis	Urine Test	2025-05-01	Normal	250.00
204	5004	3004	X-Ray Chest	Imaging	2025-05-01	Mild infection	1200.00
205	5005	3005	Lipid Profile	Blood Test	2025-02-01	Borderline High	750.00
206	5006	3006	Thyroid Panel	Blood Test	2025-05-21	Normal	650.00
207	5007	3007	MRI Brain	Imaging	2025-05-01	No Abnormalities	5000.00
208	5008	3008	Liver Function Test	Blood Test	2025-09-01	Slightly Elevated ALT	850.00
209	5009	3009	CT Abdomen	Imaging	2025-06-24	Appendicitis Suspected	4500.00
210	5010	3010	HIV Test	Blood Test	2025-01-01	Negative	1000.00
211	5011	3011	COVID-19 PCR	Swab Test	2025-08-21	Negative	1500.00
212	5012	3012	Hemoglobin A1c	Blood Test	2025-05-15	6.2%	400.00
213	5013	3013	Vitamin D	Blood Test	2025-10-01	Deficient	700.00
214	5014	3014	Electrolyte Panel	Blood Test	2025-10-01	Sodium Low	600.00
215	5015	3015	ECG	Cardiac Test	2025-05-01	Normal Sinus Rhythm	350.00

SURGERY TABLE

```
SELECT * FROM SURGERY

WHERE OUTCOME = 'SUCCESSFUL'

LIMIT 3;
```



Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Surgery_ID	Patient_ID	Doctor_ID	Surgery_Type	Surgery_Date	Duration	Operating_Room	Outcome
6001	3001	100131	Appendectomy	2025-04-10	01:30:00	OR-1	Successful
6002	3002	100132	Cataract Surgery	2025-04-11	00:45:00	OR-2	Successful
6004	3004	100134	Tonsillectomy	2025-04-13	00:40:00	OR-4	Successful

WARD TABLE

```
SELECT WARD_NAME, NUMBER_OF_BEDS,  OCCUPIED_BEDS,
 (NUMBER_OF_BEDS - OCCUPIED_BEDS) AS REMAINING_AVAILABLE_BEDS
FROM WARD;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Ward_Name	Number_of_Beds	Occupied_Beds	Remaining_Available_Beds
Pediatric Ward A	20	15	5
Maternity Ward A	25	18	7
Surgical Ward A	15	12	3
General Ward B	28	20	8
ICU Ward B	12	9	3
Pediatric Ward B	18	14	4
Maternity Ward B	22	16	6
Gynecology Ward	17	15	2
Isolation Ward	8	5	3
Pathology Ward	10	6	4
Cardiac Ward	14	12	2
Neurosurgery	16	13	3
Psychiatric Ward	20	17	3
Emergency Ward	12	11	1
Orthopedic Ward	18	16	2
Oncology Ward	30	28	2
ICU Ward C	10	7	3
Gastroenterology Ward	12	10	2

MEDICINESTORE TABLE

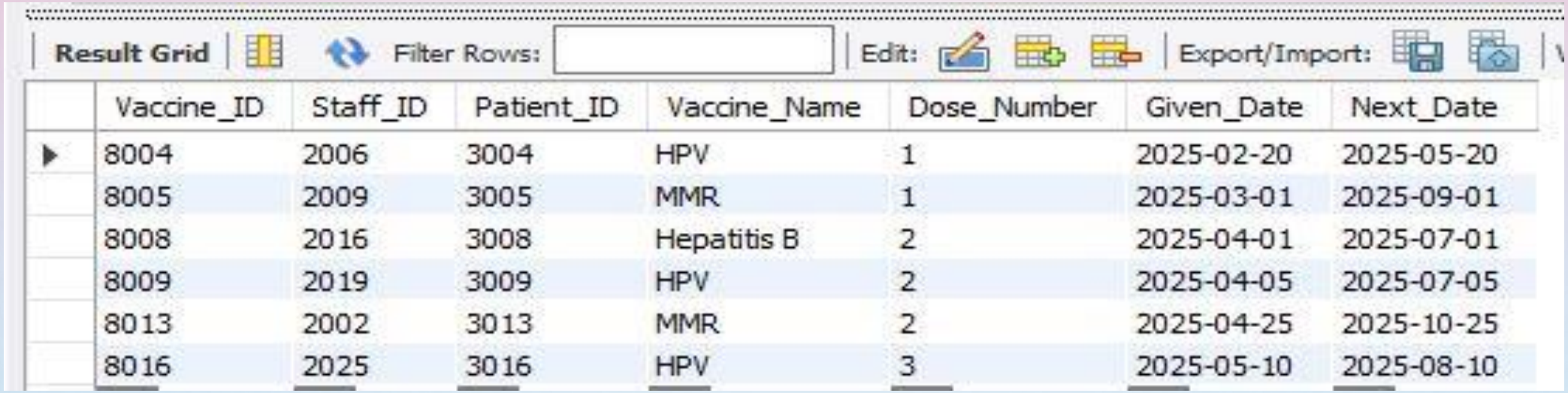
```
ALTER TABLE MedicineStore
RENAME TO Pharmacy;

ALTER TABLE Pharmacy
RENAME COLUMN Suggested_By TO Prescribed_By;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Medicine_ID	Medicine_Name	Manufacturer	Expiry_Date	Price	Category	Prescribed_By	Stock_Quantity
7001	Paracetamol	NeuroMed	2026-05-01	62.00	Painkiller	Dr. Ayesha Rahman	200
7002	Amoxicillin	CholCare Inc	2025-08-10	75.60	Antibiotic	Dr. Mariam Akhter Jahan	150
7003	Omeprazole	StomachCare	2026-04-01	90.30	Antacid	Dr. Sadikul Islam	100
7004	Ibuprofen	CalmMed Co.	2025-10-20	36.70	Anti-inflammatory	Dr. Proma Das Krity	180
7005	Cetirizine	DailyCure Ltd	2025-09-01	23.80	Antihistamine	Dr. Ayesha Rahman	90
7006	Metformin	Pharma House	2026-01-20	60.20	Diabetes	Dr. Mariam Akhter Jahan	130
7007	Amlodipine	CardioMed	2026-06-30	42.10	Blood Pressure	Dr. Sadikul Islam	110
7008	Atorvastatin	RapidMed	2025-07-12	68.90	Cholesterol	Dr. Proma Das Krity	95
7009	Salbutamol	ClearAllergy Inc	2025-08-31	31.90	Asthma	Dr. Shah Iqra	85
7010	Ranitidine	DiabetRelief	2026-11-11	52.00	Ulcer	Dr. Sadikul Islam	140
7011	Azithromycin	Healz Ltd	2025-10-15	135.75	Antibiotic	Dr. Shah Iqra	160
7012	Losartan	NutriCare	2027-01-01	75.00	Hypertension	Dr. Sadikul Islam	125
7013	Insulin	Apex Pharma	2026-12-31	150.00	Diabetes	Dr. Ayesha Rahman	70
7014	Diazepam	SugarFree Pharma	2027-03-22	40.00	Sedative	Dr. Shihab Shariar	60

VACCINATION TABLE

```
SELECT * FROM VACCINATION
WHERE VACCINE_NAME IN ('HEPATITIS B', 'HPV', 'MMR')
  AND NEXT_DATE >= CURRENT_DATE;
```



Result Grid | Filter Rows: | Edit: | Export/Import:

Vaccine_ID	Staff_ID	Patient_ID	Vaccine_Name	Dose_Number	Given_Date	Next_Date
8004	2006	3004	HPV	1	2025-02-20	2025-05-20
8005	2009	3005	MMR	1	2025-03-01	2025-09-01
8008	2016	3008	Hepatitis B	2	2025-04-01	2025-07-01
8009	2019	3009	HPV	2	2025-04-05	2025-07-05
8013	2002	3013	MMR	2	2025-04-25	2025-10-25
8016	2025	3016	HPV	3	2025-05-10	2025-08-10

BILLING TABLE

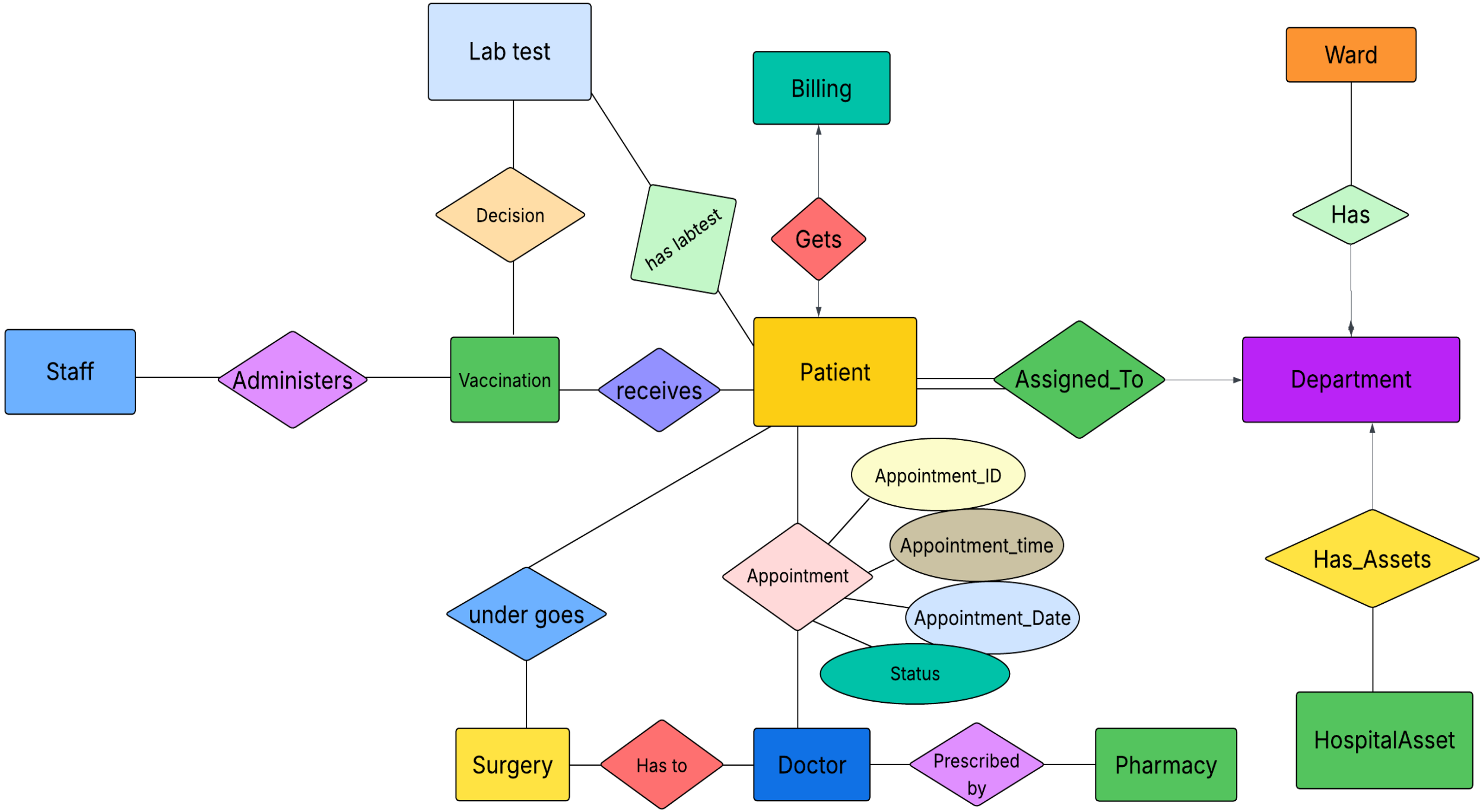
SELECT COUNT(Patient_ID) FROM Billing WHERE Total_Amount>1000
AND Total_Amount<2100;

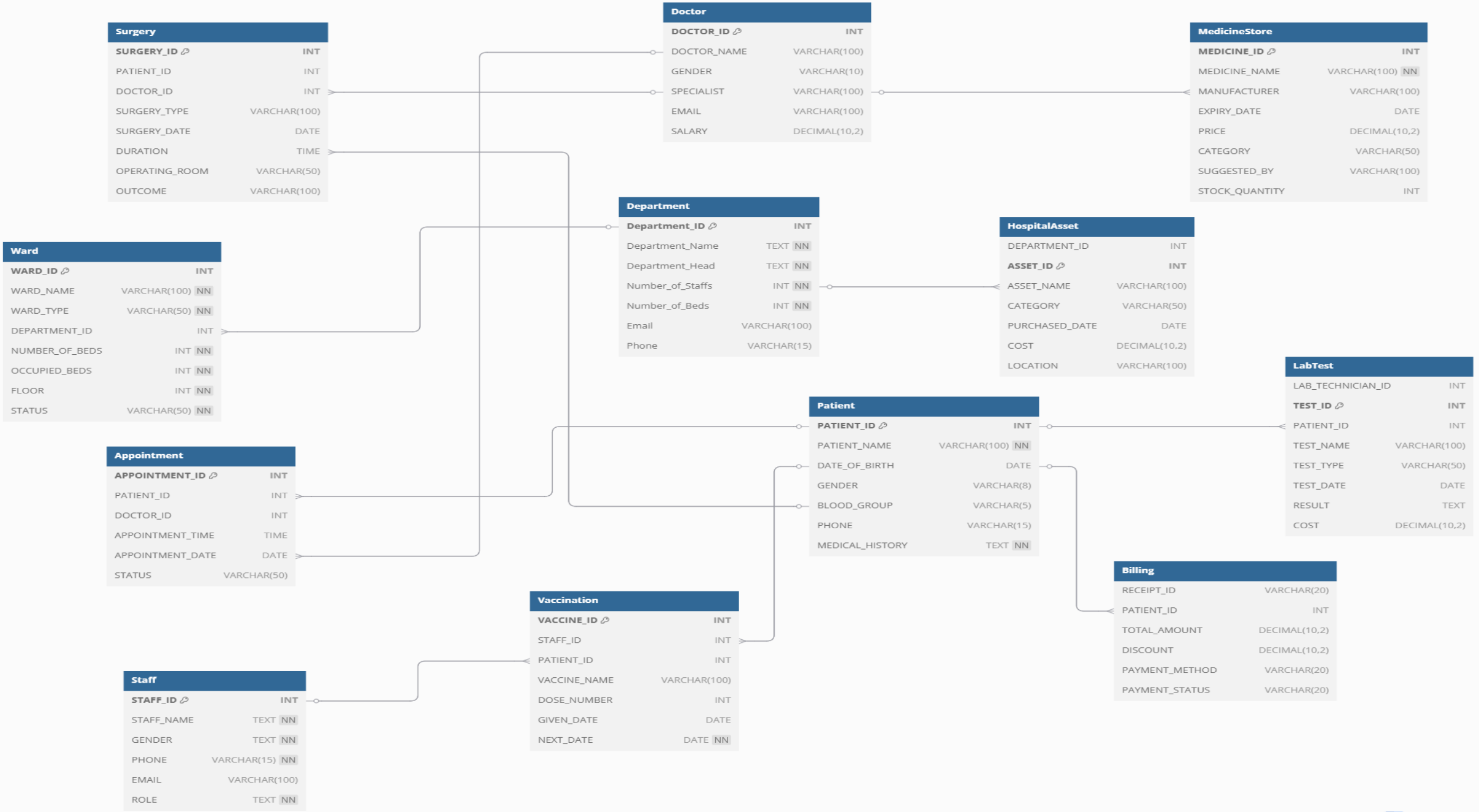
HOSPITALASSET TABLE

SELECT ASSET_NAME, COST, COST + 1000 AS INCREASED_COST FROM HOSPITALASSET;

Result Grid | Filter Rows:

Asset_Name	Cost	Increased_Cost
ECG Machine	85000.00	86000.00
Hospital Bed A1	15000.00	16000.00
Defibrillator	120000.00	121000.00
Wheelchair B3	8000.00	9000.00
MRI Scanner	2500000.00	2501000.00
Desk	5000.00	6000.00
IV Stand	1500.00	2500.00
Oxygen Tank	7000.00	8000.00
Surgical Table	35000.00	36000.00
Laptop	90000.00	91000.00
Patient Monitor	45000.00	46000.00
Recliner Chair	10000.00	11000.00
Ultrasound Ma...	650000.00	651000.00
Overbed Table	3000.00	4000.00
Ventilator	750000.00	751000.00


Lab test
Billing
Ward
Decision
has labtest
Gets
Has
Staff
Administers
Vaccination
receives
Patient
Assigned_To
Department
Appointment_ID
Appointment_time
Appointment
Has_Assets
under goes
Appointment_Date
Status
Surgery
Has to
Doctor
Prescribed by
Pharmacy
HospitalAsset



CONCLUSION

This hospital management system project using sql helped us understand how to organize and manage hospital data properly. We created different tables for doctors, patients, staff, billing, appointments, and more. By using sql queries, we learned how to insert, update, delete, and search information easily. This project showed us how databases help hospitals run smoothly by keeping all records safe, accurate, and well-connected.

THANK YOU