

-- 1) Patient History with Transactions and Lab Tests

SELECT

```
p.patientID,  
CONCAT(p.firstName, ' ', p.lastName) AS patientName,  
p.age,  
p.gender,  
p.bloodGroup,  
p.allergies,  
d.doctorID,  
CONCAT(d.firstName, ' ', d.lastName) AS doctorName,  
d.specialization,  
dep.name AS departmentName,  
a.dateTime AS appointmentDate,  
a.status AS appointmentStatus,  
r.prescription,  
lab.testName,  
lt.result AS labTestResult,  
t.transactionID,  
t.amount AS transactionAmount,  
t.paymentMode,  
t.discount
```

FROM Patient p

LEFT JOIN Appointment a ON p.patientID = a.patientID

LEFT JOIN Doctor d ON a.doctorID = d.doctorID

LEFT JOIN Department dep ON d.departmentID = dep.departmentID

LEFT JOIN Records r ON p.patientID = r.patientID

LEFT JOIN LabTest lt ON r.recordID = lt.recordID

LEFT JOIN Laboratory lab ON lt.labID = lab.labID -- Corrected connection to fetch testName

LEFT JOIN Transaction t ON r.recordID = t.recordID -- Corrected link to transactions

ORDER BY a.dateTime DESC;

patientID	patientName	gender	bloodGroup	allergies	doctorID	doctorName	specialization	department	appointmentDate	appointmentStatus	prescription	testName	labTestResult	transactionID	transactionAmount	paymentMode	discount	
80	Jatin Rastc	50 M	O-	Pollen	80	Quresh Ali	Gastroenterology	Nephrology	2/19/2025 18:30	Cancelled	Levetiracetam	Bone Marrow Infection	80	960.75	Online		5	
79	Ira Chopra	25 F	AB-	Seafood	79	Puneet Mi	Ophthalmology	Pulmonology	2/19/2025 18:00	Scheduled	Hydroxyurea	Multiple Myeloma	79	900.25	Credit Card			
78	Harsh Baja	42 M	B+	Peanuts	78	Omkar Rekha	Rheumatology	Ophthalmology	2/19/2025 17:30	Completed	Verapamil	Thalassemia	78	900.25	Credit Card		3.5	
77	Garima Sh	36 F	A-	Gluten	77	Nisha Banerjee	Hematology	Oncology	2/19/2025 17:00	Scheduled	Acetaminophen	Sickle Cell Anemia	77	1090.75	Online			
76	Faizan Kh	29 M	O+	None	76	Manav Sh	ENT	Specialty	Gastroenterology	2/19/2025 16:30	Cancelled	Folic Acid	Hemophilia	76	1090.75	Online		8
75	Eshwar Bh	54 M	AB-	None	75	Lavanya K	Anesthesiology	Dermatology	2/19/2025 16:00	Scheduled	Sumatriptan	Leukemia	75	1130.25	Credit Card			
74	Deepali M	28 F	B+	Pollen	74	Kartik Mal	Radiology	Pediatrics	2/19/2025 15:30	Completed	Tamoxifen	Tuberculosis	74	1130.25	Credit Card		5.5	
73	Chirag Sha	41 M	A+	Dust	73	Jaya Ahuja	Pulmonology	Orthopedics	2/19/2025 15:00	Scheduled	Methotrexate	EBV Test	73	1320.5	Online			
72	Bhanu Rac	39 M	O+	None	72	Ishaan Me	Nephrology	Neurology	2/19/2025 14:30	Cancelled	Prednisone	CMV Test	72	1320.5	Online		7.5	
71	Asha Yada	33 F	AB+	Peanuts	71	Himani Ka	Urologist	Cardiology	2/19/2025 14:00	Scheduled	Sildenafil	Rubella Test	71	970.99	Credit Card			
70	Zaid Dutta	48 M	B-	Milk	70	Gaurav Sir	Psychiatry	Nephrology	2/19/2025 13:30	Completed	Mirtazapine	Syphilis Test	70	970.99	Credit Card		4	
69	Yamini Vei	32 F	A-	None	69	Farhan Sid	Endocrinology	Pulmonology	2/19/2025 13:00	Scheduled	Fexofenadine	Gonorrhea	69	910.25	Online			
68	Xavier Pat	27 M	O-	Seafood	68	Esha Joshi	Gynecology	Ophthalmology	2/19/2025 12:30	Cancelled	Loratadine	Chlamydia	68	910.25	Online		6.5	
67	Waseem K	38 M	AB-	Soy	67	Divya Bha	General Surgery	Oncology	2/19/2025 12:00	Scheduled	Levothyroxine	Serum Calcium	67	1250	Credit Card			
66	Varun Josf	42 M	B+	None	66	Chetan Pu	Pediatric	Gastroenterology	2/19/2025 11:30	Completed	Benzonate	Alkaline Phosphatase	66	1250	Credit Card		2.5	
65	Usha Singl	55 F	A+	Pollen	65	Bhaves R	Oncologist	Dermatology	2/19/2025 11:00	Scheduled	Alprazolam	Phosphorus	65	1050.99	Online			
64	Tarun Misl	40 M	O+	None	64	Anusha De	Dermatology	Pediatrics	2/19/2025 10:30	Cancelled	Warfarin	Magnesium	64	1050.99	Online		5	
63	Seema Kaj	45 F	AB+	Dust	63	Prakash N	Orthopedics	Orthopedics	2/19/2025 10:00	Scheduled	Insulin Glargine	Copper Test	63	970.5	Credit Card			
62	Rajesh Me	36 M	B-	Eggs	62	Komal Aro	Neurology	Neurology	2/19/2025 9:30	Completed	Azithromycin	Zinc Test	62	970.5	Credit Card		3.5	
61	Payal Chai	50 F	A-	None	61	Arvind Tri	Cardiology	Cardiology	2/19/2025 9:00	Scheduled	Hydrocodone	Beta-HCG	61	1280.25	Online			
60	Omar Naic	31 M	O-	Shellfish	60	Kunal Jos	Gastroenterology	Nephrology	2/18/2025 18:30	Cancelled	Diphenhydramine	Folic Acid	60	1280.25	Online		4.5	
59	Nitin Desa	38 M	AB-	None	59	Sanya Dha	Ophthalmology	Pulmonology	2/18/2025 18:00	Scheduled	Lansoprazole	Glucose T Liver	59	920.99	Credit Card			
58	Megha Tri	29 F	B+	Pollen	58	Rohit Bose	Rheumatology	Ophthalmology	2/18/2025 17:30	Completed	Enalapril	5 C-Peptide	58	790.75	Credit Card		5.5	
57	Lalit Puroh	43 M	A+	Dust	57	Ishan Sax	Hematology	Oncology	2/18/2025 17:00	Scheduled	Citalopram	Insulin Test	57	680.99	Online			
56	Kirti Malh	34 F	O+	None	56	Tanisha Re	ENT	Specialty	Gastroenterology	2/18/2025 16:30	Cancelled	Loratadine	Fibrinogen	56	680.99	Online		7.5
55	Jayantanc	56 M	AB+	Peanuts	55	Alok Chat	Anesthesiology	Dermatology	2/18/2025 16:00	Scheduled	Metoclopr	D-Dimer	55	990.5	Credit Card			
54	Ishita Garg	28 F	B-	Milk	54	Karan Set	Radiology	Pediatrics	2/18/2025 15:30	Completed	Clonidine	Troponin T	54	800.25	Credit Card		10	
53	Harpreet F	30 M	A-	None	53	Shivani Ty	Pulmonology	Orthopedics	2/18/2025 15:00	Scheduled	Chlorphenir	Lipase Test	53	1200.5	Credit Card			
52	Ganesh Ya	37 M	O-	Seafood	52	Rajat Meh	Nephrology	Neurology	2/18/2025 14:30	Cancelled	Levofloxacin	Amylase	52	990.75	Online		6	
51	Farah Pat	24 F	AB-	Soy	51	Monica Ka	Urologist	Cardiology	2/18/2025 14:00	Scheduled	Amoxicillin	Creatinine	51	1200.5	Online			
50	Eshan Dut	26 M	B+	None	50	Rahul Kaul	Psychiatry	Nephrology	2/18/2025 13:30	Completed	Divalproex	BUN Test	50	1200.5	Credit Card		3	
49	Diksha Bar	33 F	A+	Dust	49	Umesh Pal	Endocrinology	Pulmonology	2/18/2025 13:00	Scheduled	Methylpred	Uric Acid	49	1030.25	Online			
48	Chaitanya	41 M	O+	None	48	Simran Ch	Gynecology	Ophthalmology	2/18/2025 12:30	Cancelled	Folic acid	Bilirubin	48	1030.25	Online		9.5	
47	Brijesh Kaj	58 M	AB+	Gluten	47	Naveen M	General S	Oncology	2/18/2025 12:00	Scheduled	Azithromy	Globulin	47	890.99	Credit Card			
46	Anjali Jos	27 F	B-	None	46	Deepika V	Pediatric	Gastroenterology	2/18/2025 11:30	Completed	Triazolam	Albumin	46	920.99	Credit Card		4	
45	Vikas Sing	32 M	A-	Eggs	45	Saket Goe	Oncologist	Dermatology	2/18/2025 11:00	Scheduled	Carbamaz	ESR Test	45	1120.75	Online			
44	Ujjwal Me	45 M	O-	Nuts	44	Neetu Raj	Dermatology	Pediatrics	2/18/2025 10:30	Cancelled	Pantopraz	CRP Test	44	1120.75	Online		7	
43	Tushar Kol	28 M	B+	Milk	43	Vikas Sax	Orthopedics	Orthopedics	2/18/2025 10:00	Scheduled	Clinidamyc	Cortisol Test	43	990.5	Credit Card			
42	Sanjana M	23 F	A+	None	42	Yash Bhart	Neurology	Neurology	2/18/2025 9:30	Completed	Gabapenti	Ferritin	42	990.5	Credit Card		5.5	
41	Ramesh Tr	62 M	AB-	Shellfish	41	Sneha Jos	Cardiology	Cardiology	2/18/2025 9:00	Scheduled	Metoprol	Serum Iron	41	890.99	Credit Card			
40	Quresh Ali	35 M	O+	Pollen	40	Tarun Sax	Gastroenterology	Nephrology	2/17/2025 18:30	Cancelled	Cetirizine	Hematocrit	40	1300.25	Online		9	
39	Puneet Mi	48 M	B-	Peanuts	39	Shruti Jain	Ophthalmology	Pulmonology	2/17/2025 18:00	Scheduled	Hydroxypr	Progester	39	890.99	Credit Card			
38	Omkar Rec	54 M	A-	None	38	Arun Batr	Rheumatology	Ophthalmology	2/17/2025 17:30	Completed	Omeprazo	Estrogen	38	890.99	Credit Card		6	
37	Nisha Ban	31 F	O-	Dust	37	Aman Dub	Hematology	Oncology	2/17/2025 17:00	Scheduled	Prednis	Testoster	37	780.75	Online			
36	Manav Shi	39 M	AB+	Seafood	36	Preeti Goy	ENT	Specialty	Gastroenterology	2/17/2025 16:30	Cancelled	Ibuprofen	Lactic Acid	36	780.75	Online		7

35	Lavanya Ki	43 F	B+	None	35	Siddharth	Anesthesic Dermatolo	2/17/2025 16:00	Scheduled Losartan 2 H. Pylori T Blood Sug	NULL	NULL	NULL	NULL	
34	Kartik Mal	28 M	A+	Milk	34	Ritu Tanej	Radiologis Pediatrics	2/17/2025 15:30	Completec Metformir T4 Test	Infection C	34	920.5	Credit Carr	5
33	Jaya Ahuja	34 F	O+	Dust	33	Pankaj Baj	Pulmonolo Orthopedi	2/17/2025 15:00	Scheduled Ranitidine T3 Test	No Liver D	NULL	NULL	NULL	NULL
32	Ishaan Me	49 M	AB-	None	32	Megha Sin	Nephrolog Neurology	2/17/2025 14:30	Cancelled Loperamic TSH Test	Positive fo	32	1150.99	Online	8.5
31	Himani Ka	26 F	B-	Peanuts	31	Rajiv Kohli	Urologist Cardiology	2/17/2025 14:00	Scheduled Amoxicicllir CA-125 Te	Blood Pres	NULL	NULL	NULL	NULL
30	Gaurav Sir	41 M	A-	None	30	Nidhi Kapr	Psychiatris Nephrolog	2/17/2025 13:30	Completec Bisoprolol PSA Test	No Autoim	30	1290.75	Credit Carr	12
29	Farhan Sid	37 M	O-	Gluten	29	Gaurav M	Endocrin Pulmonolo	2/17/2025 13:00	Scheduled Pantopraz Cholesterc	Red Blood	NULL	NULL	NULL	NULL
28	Esha Joshi	33 F	AB+	Eggs	28	Seema Ra	Gynecolog Ophthalm	2/17/2025 12:30	Cancelled Clonazepa Potassium Platelet Cc		28	1030.25	Online	7.5
27	Divya Bhai	27 F	B+	None	27	Vinay Gup	General St. Oncology	2/17/2025 12:00	Scheduled Budesonid Sodium Te	No Allerge	NULL	NULL	NULL	NULL
26	Chetan Pu	40 M	A+	Pollen	26	Kirti Singh	Pediatricia Gastroent	2/17/2025 11:30	Completec Candesart	Electrolyte Electrolyte	26	590.5	Credit Carr	5
25	Bhavesh R.	45 M	O+	None	25	Ajay Verm	Oncologist Dermatolo	2/17/2025 11:00	Scheduled Allopurinol Bone Dens Calcium L	4	NULL	NULL	NULL	NULL
24	Anusha De	31 F	AB-	Soy	24	Anita Shuk	Dermatolo Pediatrics	2/17/2025 10:30	Cancelled Hydrochro Rheumato Mild Liver		24	450.75	Online	6.5
23	Prakash No	53 M	B-	Nuts	23	Ramesh Di	Orthopedi Orthopedi	2/17/2025 10:00	Scheduled Atorvastat Allergy Te	Borderline	NULL	NULL	NULL	NULL
22	Komal Ar	23 F	A-	Milk	22	Ashok Pan	Neurologi Neurology	2/17/2025 9:30	Completec Tramadol Stool Test	No Pathog	22	750.5	Credit Carr	10
21	Arvind Tri	29 M	O-	None	21	Sunita Tiw	Cardiologi Cardiology	2/17/2025 9:00	Scheduled Metoprolol Pregnancy Minor Infi	NULL	NULL	NULL	NULL	NULL
20	Deepak Bh	58 M	AB+	Dust	20	Deepak Bh	Gastroent Nephrolog	2/16/2025 18:30	Cancelled Zolpidem Hepatitis E	Thyroid Le	20	1200	Online	4
19	Swati Garg	25 F	B+	None	19	Swati Gar	Ophthalm Pulmonolo	2/16/2025 18:00	Scheduled Fluoxetine HIV Test	Signs of M	NULL	NULL	NULL	NULL
18	Sanjay Me	31 M	A+	Pollen	18	Sanjay Me	Rheumatol Ophthalm	2/16/2025 17:30	Completec Dexameth COVID-19	Kidney Fun	18	1020.75	Credit Carr	5.5
17	Abhishek I	47 M	O+	None	17	Abhishek I	Hematolog Oncology	2/16/2025 17:00	Scheduled Levothyro Malaria Te	No Abnor	NULL	NULL	NULL	NULL
16	Pooja Chai	39 F	AB-	Shellfish	16	Pooja Chai	ENT Speci Gastroent	2/16/2025 16:30	Cancelled Glibenclan Dengue Te	Liver Func	16	920.99	Online	8.5
15	Ravi Saxen	27 M	B-	None	15	Ravi Saxen	Anesthesic Dermatolo	2/16/2025 16:00	Scheduled Simvastati Hemoglob Glucose L	4	NULL	NULL	NULL	NULL
14	Divya Mall	34 F	A-	Soy	14	Divya Mall	Radiologis Pediatrics	2/16/2025 15:30	Completec Ciprofloxa Glucose T	Low Vitam	14	550	Credit Carr	10
13	Harish Pat	60 M	O-	Milk	13	Harish Pat	Pulmonolo Orthopedi	2/16/2025 15:00	Scheduled Loratadine Vitamin B	Positive fo	NULL	NULL	NULL	NULL
12	Kavita Aga	26 F	AB+	Nuts	12	Kavita Aga	Nephrolog Neurology	2/16/2025 14:30	Cancelled Prednison Vitamin D	No Signs c	12	1450.75	Online	9
11	Suresh Jos	55 M	B+	Dust	11	Suresh Jos	Urologist Cardiology	2/16/2025 14:00	Scheduled Furosemid CBC Test	Mild Dehy	NULL	NULL	NULL	NULL
10	Meena Rai	41 F	A+	None	10	Meena Rai	Psychiatris Nephrolog	2/16/2025 13:30	Completec Amlodipin Thyroid Te	Cholesterc	10	1300	Credit Carr	3
9	Anil Yadav	38 M	O+	Gluten	9	Anil Yadav	Endocrin Pulmonolo	2/16/2025 13:00	Scheduled Losartan 5 Kidney Fun	Iron Defici	NULL	NULL	NULL	NULL
8	Sonia Kapr	29 F	AB-	Eggs	8	Sonia Kapr	Gynecolog Ophthalm	2/16/2025 12:30	Cancelled Lisinopril Liver Func	Normal Bl	8	680.25	Online	7.5
7	Manish Jai	45 M	B-	None	7	Manish Jai	General St. Oncology	2/16/2025 12:00	Scheduled Omeprazo Lipid Profi	Potential I	NULL	NULL	NULL	NULL
6	Radhika Bi	30 F	A-	Latex	6	Radhika Bi	Pediatricia Gastroent	2/16/2025 11:30	Completec Metformir ECG	Elevated E	6	450	Credit Carr	12
5	Vikram Mi	50 M	O-	Shellfish	5	Vikram Mi	Oncologist Dermatolo	2/16/2025 11:00	Scheduled Doxycyclir CT Scan	No Abnor	NULL	NULL	NULL	NULL
4	Priya Singl	22 F	AB+	None	4	Priya Singl	Dermatolo Pediatrics	2/16/2025 10:30	Cancelled Cetirizine MRI Scan	Deficiency	4	300.75	Online	15
3	Ravi Gupta	40 M	B+	Pollen	3	Rajesh Guj	Orthopedi Orthopedi	2/16/2025 10:00	Scheduled Ibuprofen X-Ray	Within No	NULL	NULL	NULL	NULL
2	Neha Vern	28 F	A+	Dust	2	Neha Vern	Neurologi Neurology	2/16/2025 9:30	Completec Amoxicicllir Urine Test	Slightly Elk	2	1200.5	Credit Carr	5
1	Amit Shari	35 M	O+	Peanuts	1	Amit Shari	Cardiologi Cardiology	2/16/2025 9:00	Scheduled Paracetam Blood Test	Normal	1	500	Cash	10

-- 2) Hospital Performance Summary

```
SELECT
d.doctorID,
CONCAT(d.firstName, ' ', d.lastName) AS doctorName,
d.specialization,
COUNT(DISTINCT a.appointmentID) AS totalAppointments,
SUM(CASE WHEN a.status = 'Completed' THEN 1 ELSE 0 END) AS completedAppointments,
SUM(CASE WHEN a.status = 'Cancelled' THEN 1 ELSE 0 END) AS cancelledAppointments,
COUNT(DISTINCT r.recordID) AS totalMedicalRecords,
COUNT(DISTINCT lt.recordID) AS totalLabTests,
AVG(t.amount) AS avgRevenue,
SUM(t.amount) AS totalRevenue,
MAX(t.amount) AS highestTransaction,
MIN(t.amount) AS lowestTransaction
FROM Doctor d
LEFT JOIN Appointment a ON d.doctorID = a.doctorID
LEFT JOIN Records r ON d.doctorID = r.doctorID
LEFT JOIN LabTest lt ON r.recordID = lt.recordID
LEFT JOIN Transaction t ON r.recordID = t.recordID
GROUP BY d.doctorID, d.firstName, d.lastName, d.specialization
ORDER BY totalAppointments DESC;
```


doctorID	doctorName	specialization	totalAppointments	completed	cancelled	totalMedications	totalLabTests	avgRevenue	totalRevenue	highestTransaction	lowestTransaction
1	Amit Sharma	Cardiology	1	0	0	1	1	500	500	500	500
2	Neha Verma	Neurology	1	1	0	1	1	1200.5	1200.5	1200.5	1200.5
3	Rajesh Gupta	Orthopedics	1	0	0	1	1	NULL	NULL	NULL	NULL
4	Priya Singh	Dermatology	1	0	1	1	1	300.75	300.75	300.75	300.75
5	Vikram Mehta	Oncology	1	0	0	1	1	NULL	NULL	NULL	NULL
6	Radhika Bhatnagar	Pediatrics	1	1	0	1	1	450	450	450	450
7	Manish Jaiswal	General Surgery	1	0	0	1	1	NULL	NULL	NULL	NULL
8	Sonia Kapoor	Gynecology	1	0	1	1	1	680.25	680.25	680.25	680.25
9	Anil Yadav	Endocrinology	1	0	0	1	1	NULL	NULL	NULL	NULL
10	Meena Rao	Psychiatry	1	1	0	1	1	1300	1300	1300	1300
11	Suresh Joshi	Urology	1	0	0	1	1	NULL	NULL	NULL	NULL
12	Kavita Agrawal	Nephrology	1	0	1	1	1	1450.75	1450.75	1450.75	1450.75
13	Harish Patel	Pulmonology	1	0	0	1	1	NULL	NULL	NULL	NULL
14	Divya Malik	Radiology	1	1	0	1	1	550	550	550	550
15	Ravi Saxena	Anesthesiology	1	0	0	1	1	NULL	NULL	NULL	NULL
16	Pooja Chandra	ENT Specialist	1	0	1	1	1	920.99	920.99	920.99	920.99
17	Abhishek Kumar	Hematology	1	0	0	1	1	NULL	NULL	NULL	NULL
18	Sanjay Mehta	Rheumatology	1	1	0	1	1	1020.75	1020.75	1020.75	1020.75
19	Swati Garg	Ophthalmology	1	0	0	1	1	NULL	NULL	NULL	NULL
20	Deepak Bhatnagar	Gastroenterology	1	0	1	1	1	1200	1200	1200	1200
21	Sunita Tiwari	Cardiology	1	0	0	1	1	NULL	NULL	NULL	NULL
22	Ashok Patel	Neurology	1	1	0	1	1	750.5	750.5	750.5	750.5
23	Ramesh Dhillon	Orthopedics	1	0	0	1	1	NULL	NULL	NULL	NULL
24	Anita Shukla	Dermatology	1	0	1	1	1	450.75	450.75	450.75	450.75
25	Ajay Verma	Oncology	1	0	0	1	1	NULL	NULL	NULL	NULL
26	Kirti Singh	Pediatrics	1	1	0	1	1	590.5	590.5	590.5	590.5
27	Vinay Gupta	General Surgery	1	0	0	1	1	NULL	NULL	NULL	NULL
28	Seema Rao	Gynecology	1	0	1	1	1	1030.25	1030.25	1030.25	1030.25
29	Gaurav Mehta	Endocrinology	1	0	0	1	1	NULL	NULL	NULL	NULL
30	Nidhi Kapoor	Psychiatry	1	1	0	1	1	1290.75	1290.75	1290.75	1290.75
31	Rajiv Kohli	Urology	1	0	0	1	1	NULL	NULL	NULL	NULL
32	Megha Singh	Nephrology	1	0	1	1	1	1150.99	1150.99	1150.99	1150.99
33	Pankaj Bhatnagar	Pulmonology	1	0	0	1	1	NULL	NULL	NULL	NULL
34	Ritu Taneja	Radiology	1	1	0	1	1	920.5	920.5	920.5	920.5
35	Siddharth Anand	Anesthesiology	1	0	0	1	1	NULL	NULL	NULL	NULL
36	Preeti Goyal	ENT Specialist	1	0	1	1	1	780.75	780.75	780.75	780.75
37	Aman Dhillon	Hematology	1	0	0	1	1	NULL	NULL	NULL	NULL
38	Arun Bhatnagar	Rheumatology	1	1	1	0	1	890.99	890.99	890.99	890.99
39	Shruti Jain	Ophthalmology	1	0	0	1	1	NULL	NULL	NULL	NULL
40	Tarun Saxena	Gastroenterology	1	0	1	1	1	1300.25	1300.25	1300.25	1300.25
41	Sneha Joshi	Cardiology	1	0	0	1	1	NULL	NULL	NULL	NULL
42	Yash Bhatnagar	Neurology	1	1	0	1	1	990.5	990.5	990.5	990.5
43	Vikas Saxena	Orthopedics	1	0	0	1	1	NULL	NULL	NULL	NULL
44	Neetu Raj	Dermatology	1	0	1	1	1	1120.75	1120.75	1120.75	1120.75
45	Saket Goel	Oncology	1	0	0	1	1	NULL	NULL	NULL	NULL
46	Deepika Malik	Pediatrics	1	1	0	1	1	920.99	920.99	920.99	920.99
47	Naveen Mehta	General Surgery	1	0	0	1	1	NULL	NULL	NULL	NULL
48	Simran Chandra	Gynecology	1	0	1	1	1	1030.25	1030.25	1030.25	1030.25
49	Umesh Patel	Endocrinology	1	0	0	1	1	NULL	NULL	NULL	NULL
50	Rahul Kumar	Psychiatry	1	1	0	1	1	1200.5	1200.5	1200.5	1200.5
51	Monica Kaur	Urology	1	0	0	1	1	NULL	NULL	NULL	NULL
52	Rajat Mehta	Nephrology	1	0	1	1	1	990.75	990.75	990.75	990.75
53	Shivani Tyagi	Pulmonology	1	0	0	1	1	NULL	NULL	NULL	NULL
54	Karan Sethi	Radiology	1	1	0	1	1	800.25	800.25	800.25	800.25
55	Alok Chatterjee	Anesthesiology	1	0	0	1	1	NULL	NULL	NULL	NULL
56	Tanisha Rastogi	ENT Specialist	1	0	1	1	1	680.99	680.99	680.99	680.99
57	Ishan Saxena	Hematology	1	0	0	1	1	NULL	NULL	NULL	NULL
58	Rohit Bhatnagar	Rheumatology	1	1	0	1	1	790.75	790.75	790.75	790.75
59	Sanya Dhillon	Ophthalmology	1	0	0	1	1	NULL	NULL	NULL	NULL
60	Kunal Joshi	Gastroenterology	1	0	1	1	1	1280.25	1280.25	1280.25	1280.25
61	Arvind Tripathi	Cardiology	1	0	0	1	1	NULL	NULL	NULL	NULL
62	Komal Arora	Neurology	1	1	0	1	1	970.5	970.5	970.5	970.5
63	Prakash Malik	Orthopedics	1	0	0	1	1	NULL	NULL	NULL	NULL
64	Anusha Dhillon	Dermatology	1	0	1	1	1	1050.99	1050.99	1050.99	1050.99
65	Bhavesh Kumar	Oncology	1	0	0	1	1	NULL	NULL	NULL	NULL
66	Chetan Patel	Pediatrics	1	1	0	1	1	1250	1250	1250	1250
67	Divya Bhatnagar	General Surgery	1	0	0	1	1	NULL	NULL	NULL	NULL
68	Esha Joshi	Gynecology	1	0	1	1	1	910.25	910.25	910.25	910.25
69	Farhan Singh	Endocrinology	1	0	0	1	1	NULL	NULL	NULL	NULL
70	Gaurav Singh	Psychiatry	1	1	0	1	1	970.99	970.99	970.99	970.99
71	Himani Kaur	Urology	1	0	0	1	1	NULL	NULL	NULL	NULL
72	Ishaan Malik	Nephrology	1	0	1	1	1	1320.5	1320.5	1320.5	1320.5
73	Jaya Ahuja	Pulmonology	1	0	0	1	1	NULL	NULL	NULL	NULL
74	Kartik Malik	Radiology	1	1	0	1	1	1130.25	1130.25	1130.25	1130.25
75	Lavanya Kulkarni	Anesthesiology	1	0	0	1	1	NULL	NULL	NULL	NULL

76	Manav Sh	ENT Specia	1	0	1	1	1	1090.75	1090.75	1090.75	1090.75
77	Nisha Bar	Hematolo	1	0	0	1	1	NULL	NULL	NULL	NULL
78	Omkar Re	Rheumato	1	1	0	1	1	900.25	900.25	900.25	900.25
79	Puneet Mi	Ophthalm	1	0	0	1	1	NULL	NULL	NULL	NULL
80	Quresh Al	Gastroent	1	0	1	1	1	960.75	960.75	960.75	960.75

-- 3) Categorizing Patients Based on Age Groups

```

SELECT
CASE
    WHEN age BETWEEN 0 AND 12 THEN 'Child'
    WHEN age BETWEEN 13 AND 19 THEN 'Teenager'
    WHEN age BETWEEN 20 AND 35 THEN 'Young Adult'
    WHEN age BETWEEN 36 AND 60 THEN 'Middle-Aged Adult'
    ELSE 'Senior Citizen'
END AS ageCategory,
gender,
bloodGroup,
COUNT(*) AS patientCount
FROM Patient
GROUP BY ageCategory, gender, bloodGroup
ORDER BY patientCount DESC;

```

ageCategory	gender	bloodGrou	patientCount
Middle-Aged Adult	M	O-	6
Middle-Aged Adult	M	O+	6
Middle-Aged Adult	M	B-	5
Middle-Aged Adult	M	B+	4
Young Adult	F	AB+	4
Young Adult	F	A-	4
Young Adult	F	AB-	4
Young Adult	F	B+	4
Middle-Aged Adult	M	AB+	4
Middle-Aged Adult	M	AB-	4
Young Adult	M	O+	3
Young Adult	F	A+	3
Young Adult	M	O-	3
Middle-Aged Adult	M	A+	3
Young Adult	F	B-	3
Middle-Aged Adult	F	A+	2
Young Adult	M	A+	2
Middle-Aged Adult	M	A-	2
Young Adult	F	O+	2
Young Adult	M	B+	2
Young Adult	M	A-	2
Middle-Aged Adult	F	A-	2
Young Adult	M	B-	1
Middle-Aged Adult	F	AB-	1
Middle-Aged Adult	F	B+	1
Young Adult	F	O-	1
Senior Citizen	M	AB-	1
Middle-Aged Adult	F	AB+	1

-- 4) Top 3 Highest-Earning Doctors Based on Patient Transactions

```
SELECT
    d.doctorID,
    CONCAT(d.firstName, ' ', d.lastName) AS doctorName,
    d.specialization,
    d.experience,
    totalRevenue
FROM Doctor d
JOIN (
    SELECT
        r.doctorID,
        SUM(t.amount) AS totalRevenue
    FROM Records r
    JOIN Transaction t ON r.recordID = t.recordID
    GROUP BY r.doctorID
    ORDER BY totalRevenue DESC
    LIMIT 0, 3 -- Retrieves top 3 highest-earning doctors
) AS revenueSubquery ON d.doctorID = revenueSubquery.doctorID;
```

	doctorID	doctorName	specialization	experience	totalRevenue
▶	12	Kavita Agarwal	Nephrologist	10	1450.75
	72	Ishaan Mehta	Nephrologist	12	1320.50
	40	Tarun Saxena	Gastroenterologist	21	1300.25

-- 5) Department-Wise Revenue and Patient Flow Analysis

```
SELECT
    dep.departmentID,
    dep.name AS departmentName,
    COUNT(DISTINCT a.appointmentID) AS totalAppointments,
    COUNT(DISTINCT r.recordID) AS totalMedicalRecords,
    (SELECT COUNT(*) FROM LabTest lt
     JOIN Records r2 ON lt.recordID = r2.recordID
     JOIN Doctor d2 ON r2.doctorID = d2.doctorID
     WHERE d2.departmentID = dep.departmentID) AS totalLabTests,
    (SELECT SUM(t.amount) FROM Transaction t
     JOIN Appointment a2 ON t.patientID = a2.patientID
     JOIN Doctor d3 ON a2.doctorID = d3.doctorID
     WHERE d3.departmentID = dep.departmentID) AS totalRevenue
FROM Department dep
LEFT JOIN Doctor d ON dep.departmentID = d.departmentID
LEFT JOIN Appointment a ON d.doctorID = a.doctorID
LEFT JOIN Records r ON d.doctorID = r.doctorID
GROUP BY dep.departmentID, dep.name
ORDER BY totalRevenue DESC;
```


departmer	departmentName	totalAppoi	totalMedic	totalLabTe	totalRevenue
10	Nephrology	8	8	8	9503.49
2	Neurology	8	8	8	8824.99
5	Dermatology	8	8	8	7402.25
8	Ophthalmology	8	8	8	7253.74
6	Gastroenterology	8	8	8	6684.97
4	Pediatrics	8	8	8	6324.24
7	Oncology	8	8	8	6035.21
3	Orthopedics	8	8	8	5062.98
9	Pulmonology	8	8	8	4802.99
1	Cardiology	8	8	8	4203.72
11	Urology	0	0	0	NULL
12	Endocrinology	0	0	0	NULL
13	Hematology	0	0	0	NULL
14	Psychiatry	0	0	0	NULL
15	Rheumatology	0	0	0	NULL
16	Infectious Diseases	0	0	0	NULL
17	Allergy & Immunology	0	0	0	NULL
18	General Surgery	0	0	0	NULL
19	Plastic Surgery	0	0	0	NULL
20	Neonatology	0	0	0	NULL
21	Pain Management	0	0	0	NULL
22	Sports Medicine	0	0	0	NULL
23	Geriatrics	0	0	0	NULL
24	Anesthesiology	0	0	0	NULL
25	Emergency Medicine	0	0	0	NULL
26	Medical Genetics	0	0	0	NULL
27	Radiology	0	0	0	NULL
28	Otolaryngology	0	0	0	NULL
29	Family Medicine	0	0	0	NULL
30	Obstetrics & Gynecology	0	0	0	NULL
31	Vascular Surgery	0	0	0	NULL
32	Thoracic Surgery	0	0	0	NULL
33	Colon & Rectal Surgery	0	0	0	NULL
34	Rehabilitation Medicine	0	0	0	NULL
35	Nuclear Medicine	0	0	0	NULL
36	Hyperbaric Medicine	0	0	0	NULL
37	Toxicology	0	0	0	NULL
38	Sleep Medicine	0	0	0	NULL
39	Hospice & Palliative Medicine	0	0	0	NULL
40	Clinical Pharmacology	0	0	0	NULL
41	Adolescent Medicine	0	0	0	NULL
42	Critical Care Medicine	0	0	0	NULL
43	Gastrointestinal Surgery	0	0	0	NULL
44	Hand Surgery	0	0	0	NULL
45	Limb Lengthening & Reconstructive Surgery	0	0	0	NULL
46	Burn Care	0	0	0	NULL
47	Spinal Surgery	0	0	0	NULL
48	Trauma Surgery	0	0	0	NULL
49	Head & Neck Surgery	0	0	0	NULL
50	Endoscopic Surgery	0	0	0	NULL
51	Pediatric Surgery	0	0	0	NULL
52	Laparoscopic Surgery	0	0	0	NULL
53	Neurosurgery	0	0	0	NULL
54	Cardiothoracic Surgery	0	0	0	NULL
55	Hepato-Pancreato-Biliary Surgery	0	0	0	NULL
56	Minimally Invasive Surgery	0	0	0	NULL
57	Gastrointestinal Oncology	0	0	0	NULL
58	Lung Transplant Surgery	0	0	0	NULL
59	Kidney Transplant Surgery	0	0	0	NULL
60	Liver Transplant Surgery	0	0	0	NULL
61	Pancreas Transplant Surgery	0	0	0	NULL

62	Heart Transplant Surgery	0	0	0	NULL
63	Plastic & Reconstructive Surger	0	0	0	NULL
64	Microvascular Surgery	0	0	0	NULL
65	Pediatric Cardiac Surgery	0	0	0	NULL
66	Cardiovascular Medicine	0	0	0	NULL
67	Interventional Radiology	0	0	0	NULL
68	Musculoskeletal Radiology	0	0	0	NULL
69	Gastrointestinal Radiology	0	0	0	NULL
70	Neuroradiology	0	0	0	NULL
71	Emergency Radiology	0	0	0	NULL
72	Pediatric Radiology	0	0	0	NULL
73	Chest Radiology	0	0	0	NULL
74	Breast Imaging	0	0	0	NULL
75	Ultrasound Imaging	0	0	0	NULL
76	X-ray Imaging	0	0	0	NULL
77	Magnetic Resonance Imaging (I	0	0	0	NULL
78	Computed Tomography (CT) Sca	0	0	0	NULL
79	Positron Emission Tomography	0	0	0	NULL
80	Interventional Pulmonology	0	0	0	NULL

-- 6) Patients Who Have Had the Most Lab Tests

```
SELECT
    p.patientID,
    CONCAT(p.firstName, ' ', p.lastName) AS PatientName,
    COUNT(lt.recordID) AS TotalLabTests
FROM Patient p
JOIN Records r ON p.patientID = r.patientID
JOIN LabTest lt ON r.recordID = lt.recordID
GROUP BY p.patientID, p.firstName, p.lastName
ORDER BY TotalLabTests DESC
LIMIT 5;
```

	patientID	PatientName	TotalLabTests
▶	1	Amit Sharma	1
	2	Neha Verma	1
	3	Ravi Gupta	1
	4	Priya Singh	1
	5	Vikram Mishra	1

-- 7) Departments with the Most Doctors

```
SELECT
    d.departmentID,
    d.name AS DepartmentName,
    COUNT(doc.doctorID) AS TotalDoctors
FROM Department d
JOIN Doctor doc ON d.departmentID = doc.departmentID
GROUP BY d.departmentID, d.name
ORDER BY TotalDoctors DESC;
```

	departmentID	DepartmentName	TotalDoctors
▶	1	Cardiology	8
	2	Neurology	8
	3	Orthopedics	8
	4	Pediatrics	8
	5	Dermatology	8
	6	Gastroenterology	8
	7	Oncology	8
	8	Ophthalmology	8
	9	Pulmonology	8
	10	Nephrology	8

-- 8) List of Beds That Are Currently Occupied

SELECT

```

b.bedNumber,
b.bedType,
b.wardNumber,
p.patientID,
CONCAT(p.firstName, ' ', p.lastName) AS PatientName

```

FROM Bed b

JOIN Patient p ON b.patientID = p.patientID

WHERE b.availabilityStatus = FALSE;

bedNum	bedType	wardNum	patientID	PatientName
2	Double	1	1	Amit Sharma
5	Single	2	2	Neha Verma
7	Single	3	3	Ravi Gupta
10	Double	5	4	Priya Singh
13	Double	6	5	Vikram Mishra
16	Single	8	6	Radhika Bansal
19	Double	9	7	Manish Jain
22	Double	11	8	Sonia Kapoor
26	Single	13	9	Anil Yadav
29	Double	14	10	Meena Rao
32	Single	16	11	Suresh Joshi
35	Double	17	12	Kavita Agarwal
39	Double	19	13	Harish Patel
43	Single	22	14	Divya Malhotra
46	Double	23	15	Ravi Saxena
50	Double	25	16	Pooja Chauhan
53	Single	27	17	Abhishek Dutta
57	Single	29	18	Sanjay Mehta
61	Single	31	19	Swati Garg
66	Double	33	20	Deepak Bhatt
70	Double	35	21	Arvind Trivedi
73	Single	37	22	Komal Arora
77	Single	39	23	Prakash Naidu

-- 9) Average Experience of Doctors in Each Department

```
SELECT
    d.departmentID,
    d.name AS DepartmentName,
    ROUND(AVG(doc.experience), 2) AS AvgExperienceYears
FROM Department d
JOIN Doctor doc ON d.departmentID = doc.departmentID
GROUP BY d.departmentID, d.name
ORDER BY AvgExperienceYears DESC;
```

	departmentID	DepartmentName	AvgExperienceYears
▶	3	Orthopedics	18.50
	10	Nephrology	17.75
	5	Dermatology	16.25
	8	Ophthalmology	15.00
	1	Cardiology	14.13
	7	Oncology	14.00
	2	Neurology	12.13
	6	Gastroenterology	11.00
	9	Pulmonology	9.00
	4	Pediatrics	8.75

-- 10) Patients Who Have Used Insurance for Payment

```
SELECT DISTINCT
    p.patientID,
    CONCAT(p.firstName, ' ', p.lastName) AS PatientName,
    p.insuranceNumber
FROM Patient p
JOIN Transaction t ON p.patientID = t.patientID
WHERE t.paymentMode = 'Insurance';
```

patientID	PatientName	insuranceNumber	
3	Ravi Gupta	INS1003	
7	Manish Jain	INS1007	
11	Suresh Joshi	INS1011	
15	Ravi Saxena	INS1015	
19	Swati Gargi	INS1019	
23	Prakash Nair	INS1023	
27	Divya Bhasin	INS1027	
31	Himani Kaur	INS1031	
35	Lavanya Kulkarni	INS1035	
39	Puneet Mishra	INS1039	
43	Tushar Koli	INS1043	
47	Brijesh Kaur	INS1047	
51	Farah Pate	INS1051	
55	Jayant Bhat	INS1055	
59	Nitin Desai	INS1059	
63	Seema Kapoor	INS1063	
67	Waseem Khan	INS1067	
71	Asha Yadav	INS1071	
75	Eshwar Bhargava	INS1075	
79	Ira Chopra	INS1079	

-- 11) Most Common Allergies Among Patients

```

SELECT
    p.allergies,
    COUNT(*) AS TotalPatients
FROM Patient p
WHERE p.allergies IS NOT NULL AND p.allergies <> ''
GROUP BY p.allergies
ORDER BY TotalPatients DESC
LIMIT 5;

```

	allergies	TotalPatients
▶	None	27
	Dust	9
	Pollen	8
	Peanuts	6
	Milk	6