

# PROJECT REPORT



# Dataset

- Appointment
- Billing
- Doctor
- Medical Procedure
- Patient

# -- Total Patients

```
use hospital;  
-- Total Patients  
  
select distinct count(*) as total_patients  
from patient;
```

Result Grid	
	total_patients
▶	1000



# -- Monthly Appointment Count

```
1 • use hospital;
2
3 -- Monthly Appointment Count
4
5 • select month(date) as Monthly ,count(*) as appointment_count
6 from appointment
7 group by Monthly
8 order by Monthly asc;
```

Result Grid			Filter Rows:
	Monthly	appointment_count	
▶	1	97	
	2	78	
	3	77	
	4	96	
	5	77	
	6	87	
	7	80	
	8	80	
	9	81	
	10	78	
	11	82	
	12	87	

# -- Top Performing Doctors by Appointments (Monthly)

```
1 • use hospital;
2   -- Top Performing Doctors by Appointments (Monthly)
3
4 • SELECT
5     d.doctorname,
6     MONTH(a.date) AS appointment_month,
7     COUNT(p.patientid) AS total_patients
8 FROM
9     appointment a
10    JOIN
11    doctor d ON a.doctorid = d.doctorid
12    JOIN
13    patient p ON p.patientid = a.patientid
14 GROUP BY d.doctorname , MONTH(a.date)
15 ORDER BY appointment_month;
```

	doctorname	appointment_month	total_patients
▶	Joeann	6	7
	Karlee	9	5
	Tera	9	5
	Verla	9	5
	Merrie	11	5
	Jinny	8	5
	Shell	3	5
	Aryn	4	5
	Molli	2	5
	Molli	6	5



# -- Revenue by Doctor & Procedure

```
1 • use hospital ;
2   -- Revenue by Doctor & Procedure
3
4 • SELECT
5     d.doctorname, SUM(b.amount) AS revenue, m.procedurename
6 FROM
7     appointment a
8     JOIN
9     doctor d ON a.doctorid = d.doctorid
10    JOIN
11    billing b ON b.patientid = a.patientid
12    JOIN
13    `medical procedure` m ON m.appointmentid = a.appointmentid
14 GROUP BY d.doctorname , m.procedurename
15 -- having d.doctorname= 'Flory';
```

	doctorname	revenue	procedurename
►	Kary	1531215	Kidney transplant
	Tarra	1531215	Kidney transplant
	Dorene	1239542	Kidney transplant
	Jeanna	418597	Allergy testing
	Hyacinthe	366652	Psychotherapy
	Alejandra	366652	Psychotherapy
	Flory	1302840	Hormone replacement therapy
	Tera	347077	Kidney transplant
	Jsandye	347077	Kidney transplant
	Gloria	761099	Tonsillectomy and adenoidectomy

# -- Repeat Visits Analysis

```
1 • use hospital;
2   -- Repeat Visits Analysis
3
4 • SELECT
5     CONCAT(p.firstname, ' ', p.lastname) AS Full_Name,
6     COUNT(*) AS no_of_visits
7 FROM
8     patient p
9     JOIN
10    appointment a ON a.PatientID = p.PatientID
11 WHERE
12     a.Date <= DATE_SUB(STR_TO_DATE('12-31-2023', '%m-%d-%Y'),
13     INTERVAL 30 DAY)
14 GROUP BY Full_Name
15 HAVING no_of_visits > 1
16 ORDER BY no_of_visits DESC;
```

	Full_Name	no_of_visits
►	Brana Redmond	5
	Cristine Aurelio	5
	Tybie Latini	5
	Merry Henebry	4
	Marcy Vacuva	4
	Dari Agle	4
	Mellicent Virgin	4
	Ruthe Garbe	4
	Carolina Carbo	4
	Barhi Lindemann	4



# -- Revenue Breakdown by Department

```
1 • use hospital;
2   -- Revenue Breakdown by Department
3
4 • SELECT
5     d.specialization AS Department, SUM(b.amount) Revenue
6 FROM
7     appointment a
8     JOIN
9     billing b ON a.PatientID = b.PatientID
10    JOIN
11    doctor d ON d.DoctorID = a.DoctorID
12 GROUP BY d.specialization
13 ORDER BY revenue DESC;
14
```

	Department	Revenue
▶	Allergists	41867095
	Otolaryngologists	38170043
	Ophthalmology	35841684
	Radiology	35156337
	Gastroenterology	34415348
	Surgery	31207004
	Anesthesiology	30638467
	Endocrinologist	28045530
	Pulmonologists	26753803
	Infectious disease	26258573



# -- Top 5 Highest-Earning Medical Procedures

```
1 • use hospital;
2   -- Top 5 Highest-Earning Medical Procedures
3
4 • SELECT
5     m.procedurename AS MedicalProcedure,
6     SUM(b.amount) AS revenue
7 FROM
8     appointment a
9     JOIN
10    billing b ON b.PatientID = a.PatientID
11    JOIN
12    `medical procedure` m ON m.AppointmentID = a.AppointmentID
13 GROUP BY m.ProcedureName
14 ORDER BY revenue DESC
15 LIMIT 5;
```

	MedicalProcedure	revenue
▶	General surgery	23270264
	Electroconvulsive therapy (ECT)	21249022
	Liver biopsy	20611668
	Advanced cardiac life support	19655329
	Cataract surgery	18907023

# -- Patient Journey Mapping

```
1 • use hospital ;
2   -- Patient Journey Mapping
3
4   with cte as (
5     select concat(p.firstname,' ',p.lastname) as `Full Name` ,m.procedurename as Medical_Procedure,
6     row_number() over (partition by p.patientid order by a.date,a.appointmentid) as rn
7     from appointment a
8     join patient p on p.PatientID= a.PatientID
9     join `medical procedure` m on m.AppointmentID= a.AppointmentID
10
11  )
12  select `Full Name` , Medical_Procedure,rn
13  from cte
14  order by `Full Name` , rn asc;
15
```

	Full Name	Medical_Procedure	rn
▶	Agathe Eldrid	Chronic disease management	2
	Agathe Shaddock	Emotional and spiritual support	2
	Aili Ventre	General anesthesia for surgeries	4
	Aimil Ovid	EEG (Electroencephalogram)	11
	Aimil Ovid	Surgical oncology	12
	Aimil Ovid	Thyroid biopsy	13
	Aimil Ovid	Surgical oncology	14
	Aimil Ovid	Dementia care	17
	Aimil Suzetta	Retinal surgery	1
	Aimil Suzetta	LASTK eve surgery	2



# -- Doctor-wise Unique Patient Count (Last 3 Months)

```
1 • use hospital;
2   -- Doctor-wise Unique Patient Count (Last 3 Months)
3
4 • SELECT
5     d.doctorname AS D_name,
6     COUNT(DISTINCT (p.patientid)) AS no_of_patients
7 FROM
8     appointment a
9     JOIN
10    patient p ON p.PatientID = a.PatientID
11    JOIN
12    doctor d ON d.DoctorID = a.DoctorID
13 WHERE
14     a.Date >= DATE_SUB(STR_TO_DATE('12-31-2023', '%m-%d-%y'),
15     INTERVAL 90 DAY)
16 GROUP BY D_name
17 ORDER BY no_of_patients DESC;
```

	D_name	no_of_patients
►	Moyna	8
	Cyndie	7
	Tera	7
	Corina	6
	Frank	6
	Aeriela	5
	Addia	4
	Alex	4
	Andeee	4
	Aurelie	4

# -- Patient Lifetime Value (PLTV)

```
1 • use hospital;
2   -- Patient Lifetime Value (PLTV)
3
4 • SELECT
5     p.patientid AS ID,
6     CONCAT(p.firstname, ' ', p.lastname) AS Full_Name,
7     SUM(b.amount) AS revenue
8 FROM
9     billing b
10    JOIN
11    patient p ON p.PatientID = b.PatientID
12 GROUP BY ID , Full_Name
13 ORDER BY revenue DESC;
```

	ID	Full_Name	revenue
▶	733	Lesly Arquit	4035149
	733	Glenda LaRue	4035149
	368	Stephanie Agle	3436703
	368	Robinia Cecile	3436703
	779	Candi Shaver	3283643
	240	Margette Belldas	2800003
	242	Frieda Bonilla	2286000
	879	Mildrid Bakerman	2285920
	879	Kylynn Thomasina	2285920
	373	Asia Rendick	2281671



# -- Inactive Patients in Last 6 Months

```
1 • use hospital;
2   -- Inactive Patients in Last 6 Months
3
4 • SELECT
5     PatientID AS ID,
6     CONCAT(firstname, ' ', lastname) AS Full_Name
7 FROM
8   patient
9 WHERE
10  PatientID NOT IN (SELECT
11                      p.PatientID
12                    FROM
13                      patient p
14                      JOIN
15                      appointment a ON a.PatientID = p.PatientID
16                    WHERE
17                      a.date >= DATE_SUB(STR_TO_DATE('12-31-2023', '%m-%d-%Y'),
18                      INTERVAL 6 MONTH))
```

	ID	Full_Name
▶	919	Anallese Halla
	535	Shel Dearborn
	830	Mara Shuler
	398	Dale Lewes
	375	Sharlene Luhe
	566	Rebeca Winnick
	404	Merry Henebry
	922	Orsola Torray
	603	Dolli Anderea
	939	Mellicent Shama

# -- Procedure Cost Outlier Detection

```
1 • use hospital ;
2   -- Procedure Cost Outlier Detection
3
4 • SELECT
5     m.procedurename AS P_Name, b.amount AS cost
6 FROM
7     appointment a
8     JOIN
9     billing b ON a.PatientID = b.PatientID
10    JOIN
11    `medical procedure` m ON m.AppointmentID = a.AppointmentID
12 WHERE
13     b.amount > (SELECT
14                 AVG(amount) + 2 * STDDEV(amount) AS revenue
15                 FROM
16                     billing);
```

	P_Name	cost
►	Kidney transplant	985602
	Kidney transplant	891275
	Hormone replacement therapy	944293
	Sedation for minor procedures	925988
	Cataract surgery	989313
	Cataract surgery	835276
	Immunizations	977858
	Laser therapy for skin conditions	828872
	General surgery	951259
	General surgery	867765