

 welcome to



Created by Anjali Keshri

# HOSPITAL INSIGHTS OVERVIEW



(SQL AND POWER BI)



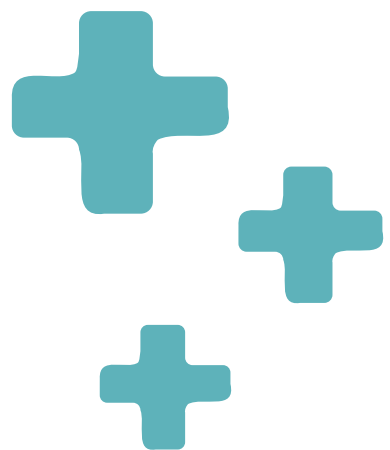


# HOSPITAL INSIGHTS OVERVIEW

Hi , I'm Anjali keshri

"Welcome to the Hospital Insights Overview Dashboard.  
This dashboard provides a comprehensive analysis of key hospital metrics including patient demographics, appointment trends, doctor performance, and revenue insights.  
This project was created using two powerful tools — SQL for data extraction and transformation, and Power BI for interactive visualization.

It marks my first successful integration of both tools into a single project, and I'm excited to present the results of this effort."



# TASK 1: BASED ON DOCTORS



```
select d.doctor_id,concat(d.first_name," ",d.last_name) as Doctor_name,
specialization , years_experience ,
count(a.appointment_id) as Total_appointments,
count(distinct a.patient_id) as Unique_Patients,
round(sum(b.amount),2) as Total_Revenue
from doctors d left join appointments a on d.doctor_id=a.doctor_id
join billing b on a.patient_id=b.patient_id
group by d.doctor_id,Doctor_name,specialization,years_experience;
```

	doctor_id	Doctor_name	specialization	years_experience	Total_appointments	Unique_Patients	Total_Revenue
▶	D001	David Taylor	Dermatology	17	129	20	336851.92
	D002	Jane Davis	Pediatrics	24	88	17	264650.98
	D003	Jane Smith	Pediatrics	19	106	18	279957.14
	D004	David Jones	Pediatrics	28	73	13	191212.99
	D005	Sarah Taylor	Dermatology	26	142	23	394356.89
	D006	Alex Davis	Pediatrics	23	121	19	339280.84
	D007	Robert Davis	Oncology	26	62	12	188582.63
	D008	Linda Brown	Dermatology	5	82	12	234358.03
	D009	Sarah Smith	Pediatrics	26	84	15	214192.66
	D010	Linda Wilson	Oncology	21	115	12	304846.08

## PATIENTS DISTRIBUTION BASED ON DOCTORS



### Specialization

Dermatology

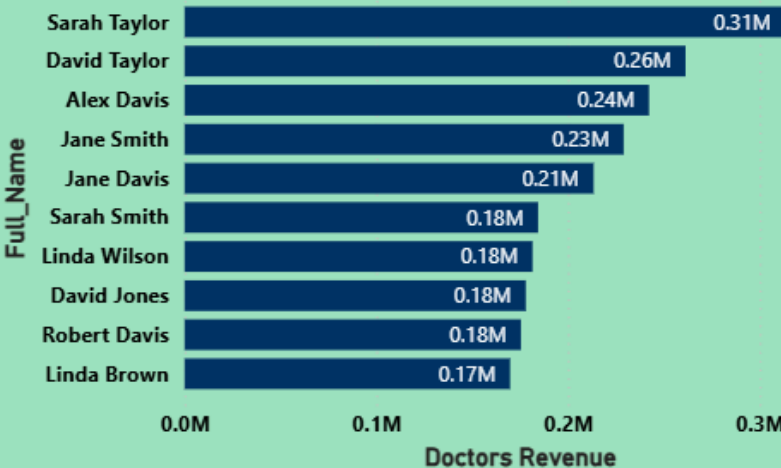
Oncology

Pediatrics

10

Unique\_Doctors

### Total Revenue Per Doctors



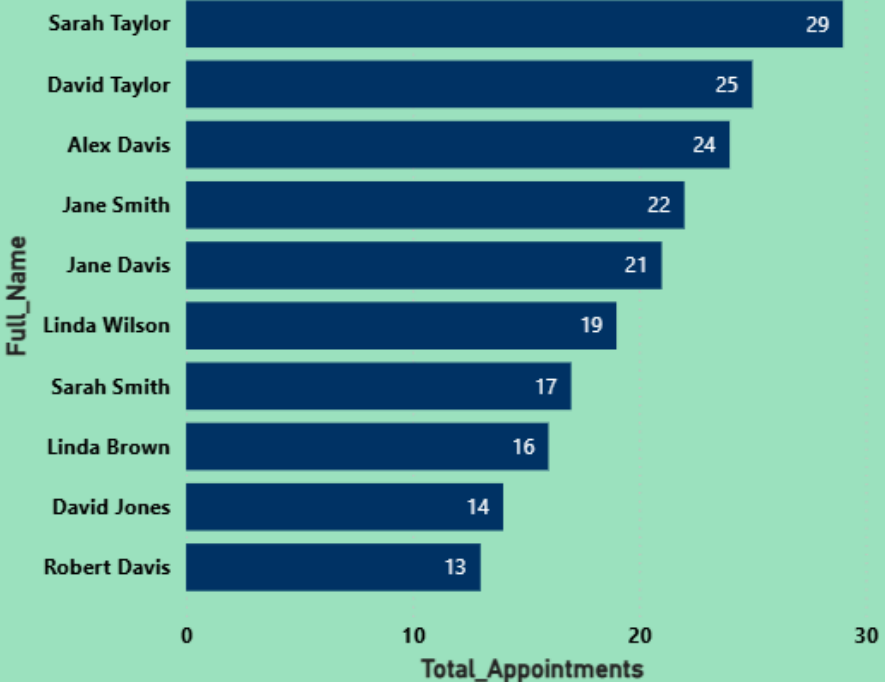
551.25K

Total\_Revenue

11.48K

Avg Revenue per Patient

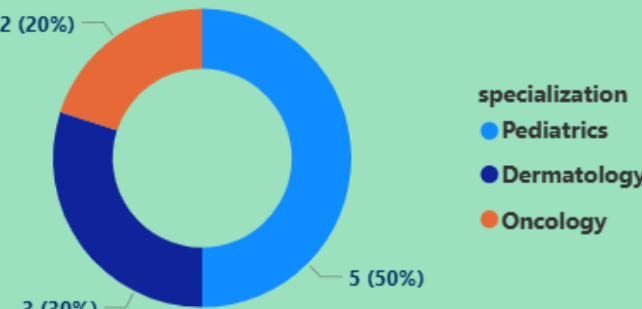
### Total Appointments by Doctors



### Doctor's Specialization and Experiences

Full_Name	specialization	years_experience
Alex Davis	Pediatrics	23
David Jones	Pediatrics	28
Jane Davis	Pediatrics	24
Jane Smith	Pediatrics	19
Sarah Smith	Pediatrics	26
Linda Wilson	Oncology	21
Robert Davis	Oncology	26
David Taylor	Dermatology	17
Linda Brown	Dermatology	5
Sarah Taylor	Dermatology	26

### Doctor Specialty Distribution



# TASK 2: BASED ON GENDER



```
SELECT p.gender,  
COUNT(DISTINCT p.patient_id) AS Total_patients,  
COUNT(DISTINCT a.appointment_id) AS Total_appointments,  
COUNT(DISTINCT a.doctor_id) AS Unique_doctors  
FROM patients p LEFT JOIN appointments a  
ON p.patient_id = a.patient_id  
GROUP BY p.gender;
```

	gender	Total_patients	Total_appointments	Unique_doctors
▶	F	19	70	10
	M	31	130	10

```
SELECT p.gender,round(SUM(b.amount),2) AS Total_Revenue,  
round(avg(b.amount),2) AS Average_Billing  
FROM patients p JOIN billing b  
ON p.patient_id = b.patient_id  
GROUP BY p.gender;
```

	gender	Total_Revenue	Average_Billing
▶	F	190049.93	2715
	M	361199.92	2778.46

## PATIENTS DISTRIBUTION BASED ON GENDER ♂♀

50

Total Patients

Total Appointments by gender

gender	Total_Appointments
Female	70
Male	130
Total	200

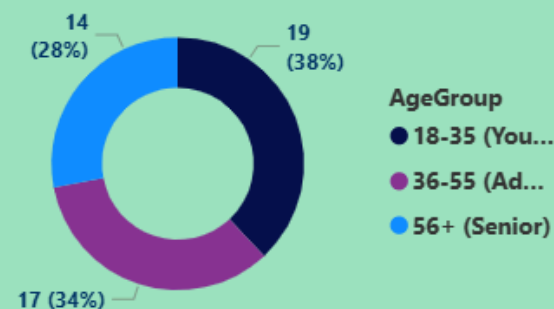
No of patients based on Treatment Type

gender	Chemotherapy	ECG	MRI	Physiotherapy	X-Ray	Total
Female	19	19	19	19	19	19
Male	31	31	31	31	31	31
Total	50	50	50	50	50	50

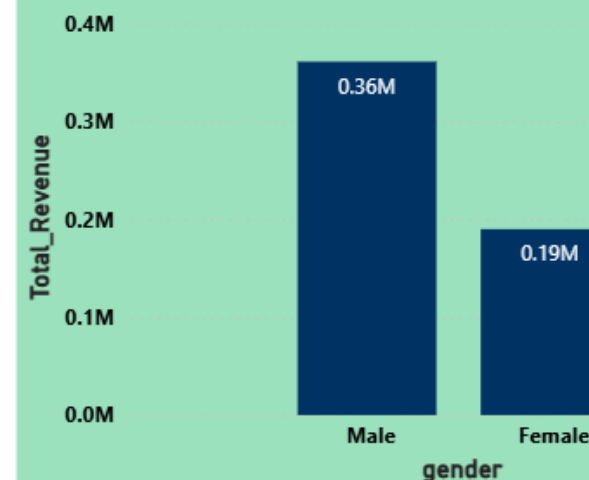
2.76K

Average Bill Amount

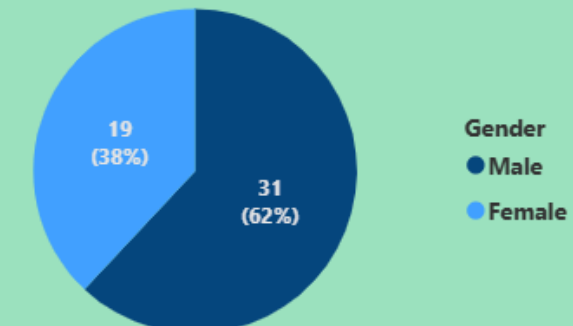
Number of patients by AgeGroup



Total Revenue by gender



No of patient by Gender



# TASK3: BASED ON BRANCH



```
select d.hospital_branch,  
count(distinct a.patient_id) as unique_patients,  
count(distinct a.appointment_id) as Total_Appointments,  
count(distinct a.doctor_id) as active_doctors,  
Round(sum(b.amount),2) as Total_Revenue,  
Round(Avg(b.amount),2) as Avg_bill_amount  
from appointments a left join  
billing b on a.patient_id=b.patient_id  
left join doctors d on a.doctor_id=d.doctor_id  
group by d.hospital_branch;
```

	hospital_branch	unique_patients	Total_Appointments	active_doctors	Total_Revenue	Avg_bill_amount
▶	Central Hospital	39	84	4	1139043.38	2712.01
	Eastside Clinic	34	62	3	849454.2	2749.04
	Westside Clinic	36	54	3	759792.58	2783.12

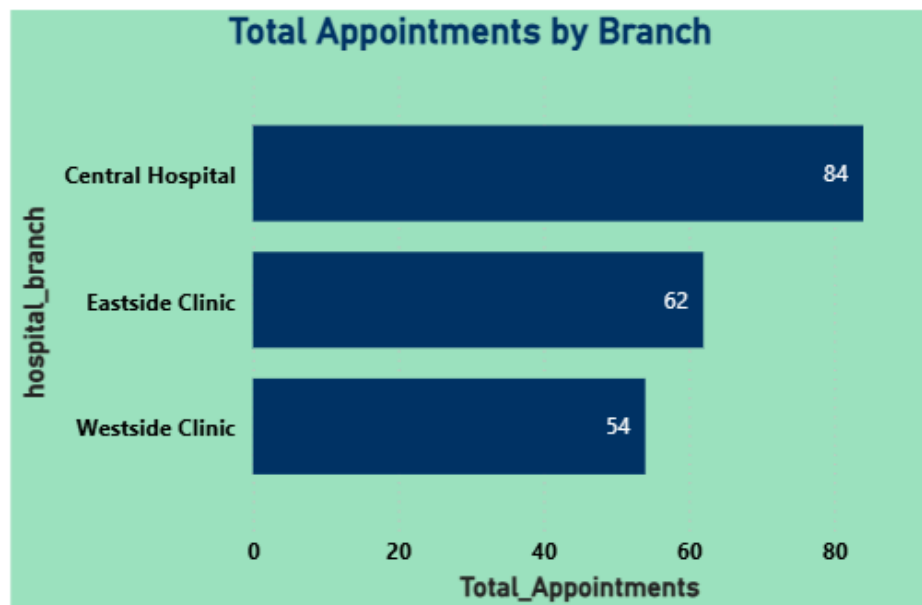
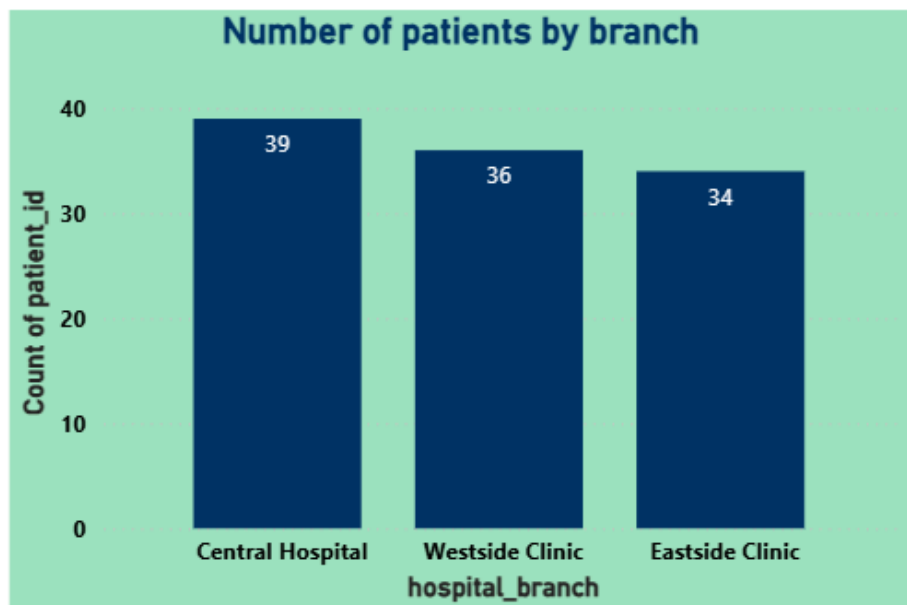
## PATIENTS AND DOCTORS DISTRIBUTION BASED ON BRANCH



No of Doctors per Branch	
hospital_branch	Count of Doctors
Central Hospital	4
Eastside Clinic	3
Westside Clinic	3
<b>Total</b>	<b>10</b>



**2.76K**  
Average bill per Branch





# TASK 4: BASED ON PAYMENT METHOD AND STATUS

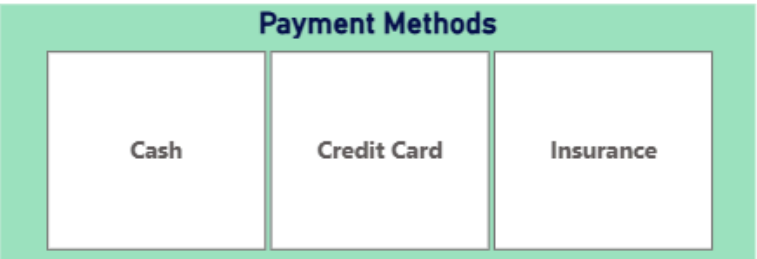
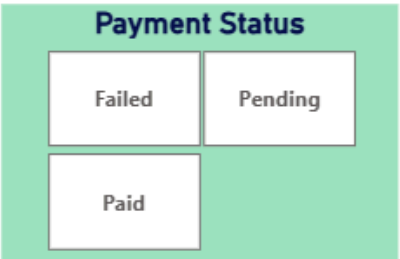
```
SELECT b.payment_method,SUM(CASE WHEN p.gender = 'M' THEN 1 ELSE 0 END) AS Male,
SUM(CASE WHEN p.gender = 'F' THEN 1 ELSE 0 END) AS Female,
COUNT(p.patient_id) AS Total_Transactions,
ROUND(SUM(amount), 2) AS Total_Revenue,ROUND(AVG(amount), 2) AS Avg_bill
FROM patients p JOIN billing b ON p.patient_id = b.patient_id
GROUP BY b.payment_method;
```

	payment_method	Male	Female	Total_Transactions	Total_Revenue	Avg_bill
►	Insurance	42	22	64	182160.28	2846.25
	Credit Card	51	24	75	201382.43	2685.1
	Cash	37	24	61	167707.14	2749.3

```
SELECT distinct payment_method,
SUM(CASE WHEN payment_status = 'Pending' THEN 1 ELSE 0 END) AS Pending_amount,
SUM(CASE WHEN payment_status = 'Failed' THEN 1 ELSE 0 END) AS Failed_amount,
SUM(CASE WHEN payment_status = 'Paid' THEN 1 ELSE 0 END) AS Paid_amount
FROM billing group by payment_method;
```

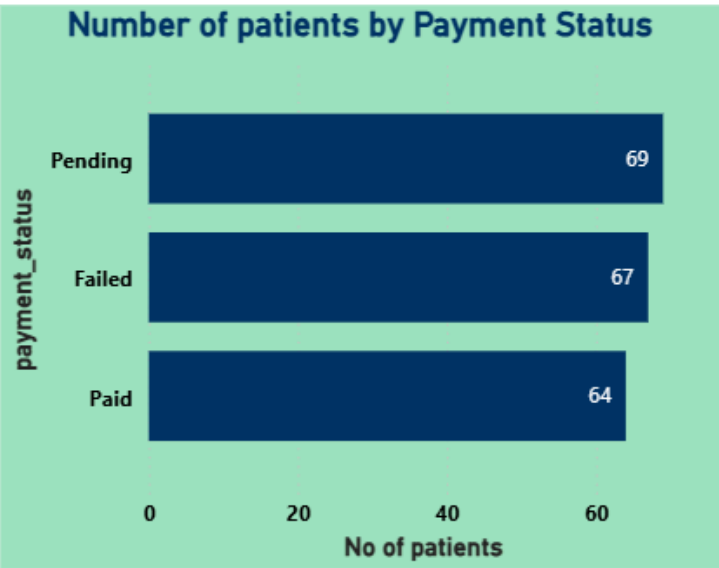
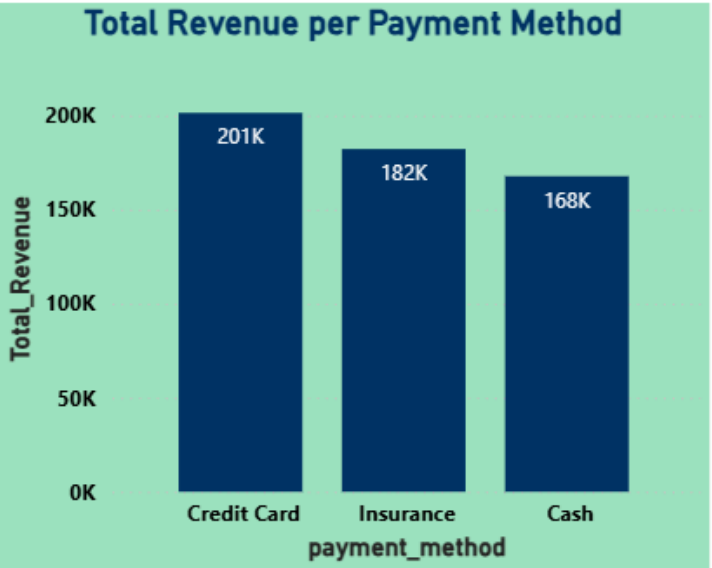
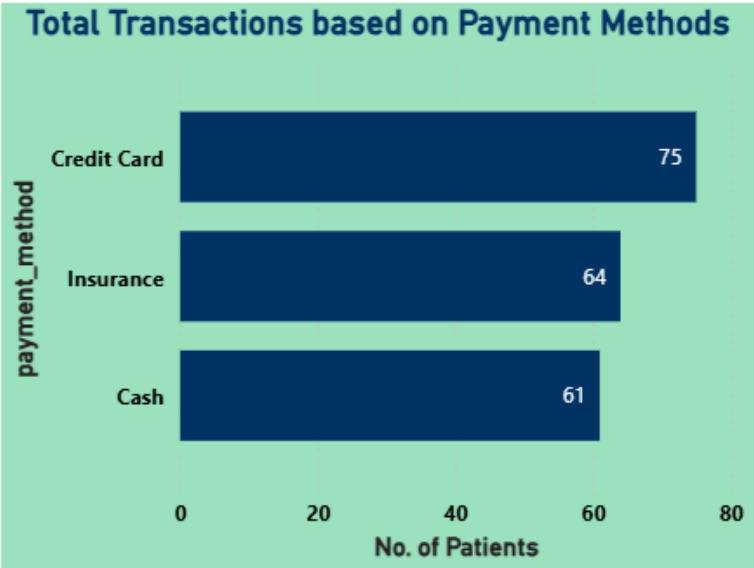
	payment_method	Pending_amount	Failed_amount	Paid_amount
►	Insurance	23	21	20
	Credit Card	28	23	24
	Cash	18	23	20

## PAYMENT METHOD AND STATUS



Payment Method by Payment Status

payment_method	Failed	Paid	Pending	Total
Cash	65,649.75	52,691.30	49,366.09	1,67,707.14
Insurance	62,597.32	60,356.49	59,206.47	1,82,160.28
Credit Card	64,965.87	60,377.11	76,039.45	2,01,382.43
Total	1,93,212.94	1,73,424.90	1,84,612.01	5,51,249.85



# SOME QUERIES FOR DASHBOARD

```
SELECT monthname(appointment_date) AS Months,  
COUNT(*) AS total_appointments  
FROM appointments  
GROUP BY Months;
```

	Months	total_appointments
▶	August	15
	June	18
	September	11
	July	16
	April	25
	May	19
	March	19
	January	20
	November	17
	February	14
	December	12
	October	14

```
select treatment_type,round(sum(cost),2) as Cost  
from treatments group by treatment_type;
```

	treatment_type	Cost
▶	Chemotherapy	128855.68
	MRI	116098.16
	ECG	96224.24
	Physiotherapy	99418.1
	X-Ray	110653.67

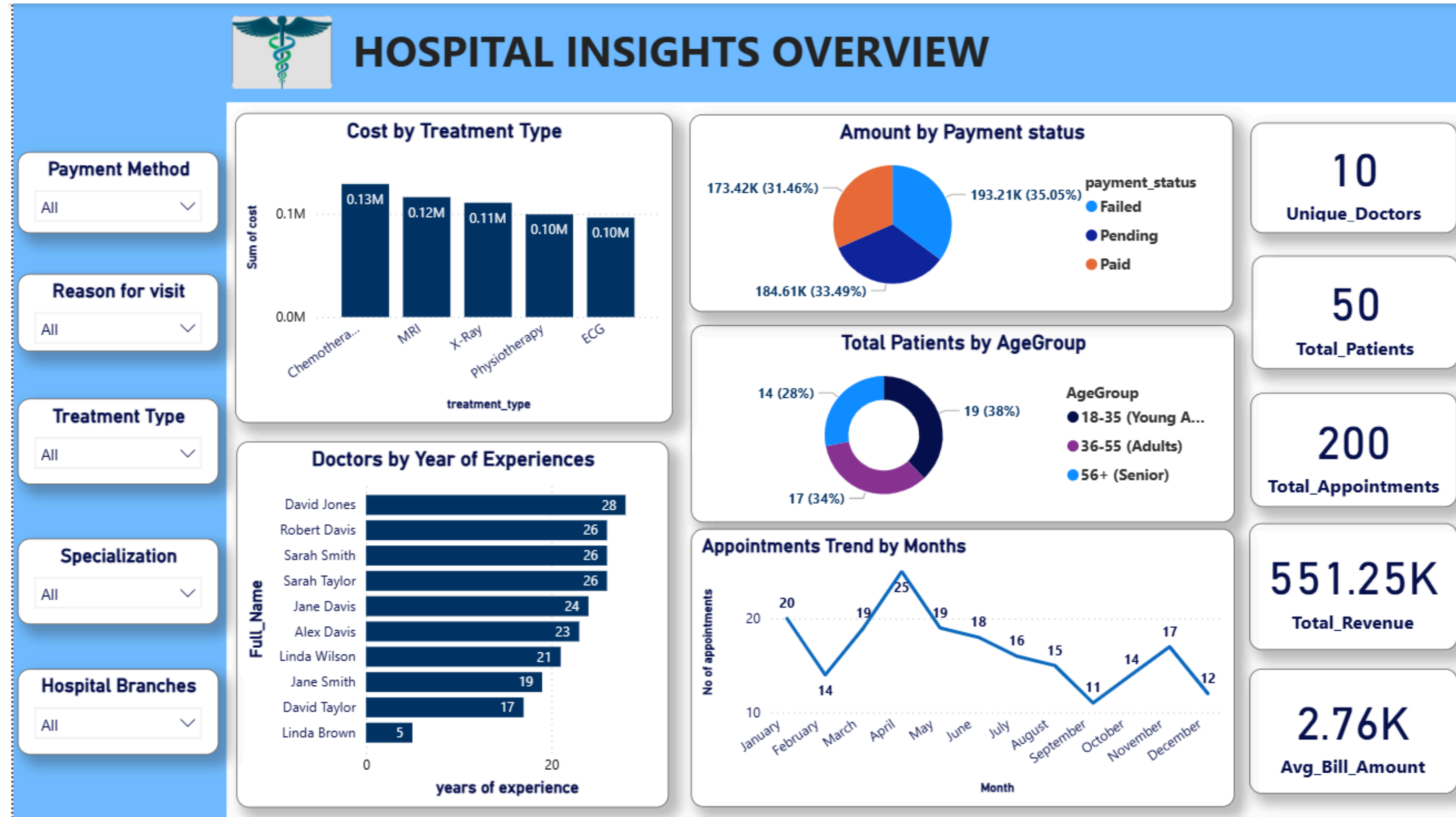
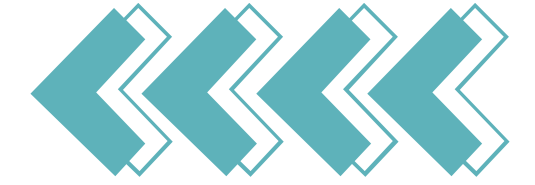
```
SELECT SUM(CASE WHEN p.gender = 'M' THEN 1 ELSE 0 END) AS Male,  
SUM(CASE WHEN p.gender = 'F' THEN 1 ELSE 0 END) AS Female,  
CASE WHEN TIMESTAMPDIFF(YEAR,p.date_of_birth,CURDATE()) BETWEEN 0 AND 17 THEN '0-17 (children)'  
WHEN TIMESTAMPDIFF(YEAR,p.date_of_birth,CURDATE()) BETWEEN 18 AND 35 THEN '18-35 (young Adults)'  
WHEN TIMESTAMPDIFF(YEAR,p.date_of_birth,CURDATE()) BETWEEN 36 AND 55 THEN '36-55 (Adults)'  
ELSE '56+ (Seniors)' END AS Age_group,COUNT(*) AS Total_patients,SUM(b.amount) AS Total_Revenue  
FROM patients p JOIN billing b ON p.patient_id = b.patient_id GROUP BY Age_group  
ORDER BY Age_group;
```

	Male	Female	Age_group	Total_patients	Total_Revenue
▶	64	29	18-35 (young Adults)	93	247256.44
	40	20	36-55 (Adults)	60	169858.32
	26	21	56+ (Seniors)	47	134135.08999999997

```
select concat(first_name," ",last_name) as  
Doctor_name, years_experience  
from doctors order by years_experience desc;
```

	Doctor_name	years_experience
▶	David Jones	28
	Sarah Taylor	26
	Robert Davis	26
	Sarah Smith	26
	Jane Davis	24
	Alex Davis	23
	Linda Wilson	21
	Jane Smith	19
	David Taylor	17
	Linda Brown	5

# DASHBOARD

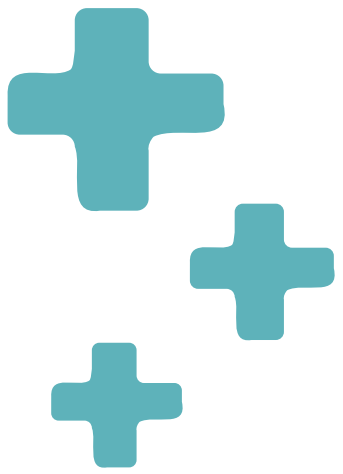




# INSIGHTS

- 1.The hospital employs 10 unique doctors, each contributing to patient care across various specialization.
- 2.The majority of patients fall in the 18-35 age group(38%).
- 3.Chemotherapy (0.13M) are the most costly treatment types.
- 4.April saw the highest number of appointments(25) and september had the lowest(11) indicating seasonal dip.
- 5.The most experience doctor is David Jones(28 years).
- 6.The highest revenue of doctor Sarah Taylor who is dermatologist.
- 7.The highest appointments and revenue from male patients.
- 8.Central Hospital has the most patients and appointments.
- 9.Most of the patients prefer credit card for payments.
- 10.The hospital has generated approximately (551.25 K) in total revenue and the average billing amount per patient is around (2.76K).





**THANK YOU FOR YOUR  
ATTENTION**

