Flights Analysis – SQL Queries

Tool Used – PostgreSQL

Chirag Sharma

Data Analyst

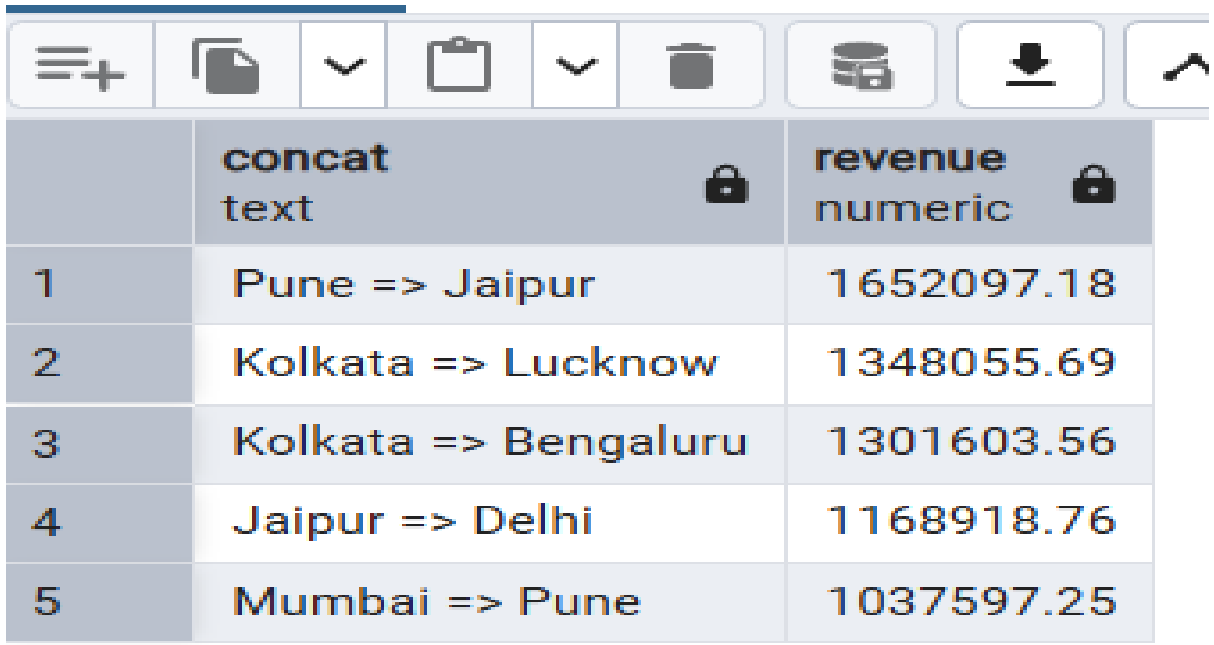
Query | Query History

```sql
--- 1.  Find the total gross revenue generated per airline.

select f.airline, sum(round((finalfare/( 1 - discountused))::numeric, 2)) as GrossRevenue
from flights as f
join bookings as b
ON f.flightid = b.flightid
group by 1
```

	airline text	grossrevenue numeric
1	GoAir	7648028.93
2	Air India	6897959.14
3	SpiceJet	6287010.95
4	Vistara	6518924.52
5	IndiGo	5655943.78
6	AirAsia India	7315915.01

Query | Query History

```sql
--- 2.  Identify the top 5 routes (Source-Destination) by total booking revenue.

select concat(f.sourcecity, ' => ', f.destinationcity), round(sum(b.finalfare)::numeric, 2) as Revenue
from flights as f
join bookings as b
ON f.flightid = b.flightid
group by 1
order by 2 desc
limit 5
```



	concat text	revenue numeric
1	Pune => Jaipur	1652097.18
2	Kolkata => Lucknow	1348055.69
3	Kolkata => Bengaluru	1301603.56
4	Jaipur => Delhi	1168918.76
5	Mumbai => Pune	1037597.25

Query | Query History

```sql
--- 3.  Calculate the average discount percentage given for each payment method.

select paymentmethod, round((avg(discountused) * 100)::numeric, 2) || '%' as Avgdiscount
from bookings
group by 1
```

	paymentmethod text	avgdiscount text
1	Net Banking	14.91%
2	Debit Card	15.44%
3	UPI	15.04%
4	Credit Card	14.34%

Query | Query History

```sql
--- 4.  Find the percentage of flights that were canceled vs. completed for each airline.

select airline, concat('Booked - ', Booked_percn, ' vs Cancelled - ', Cancelled_percn) as Status from
(select airline,
round(sum(case when bookingstatus = 'Canceled' then 1 else 0 end)* 100.0/count(*),0) || '%' as Cancelled_percn,
round(sum(case when bookingstatus = 'Booked' then 1 else 0 end)* 100.0/count(*),0) || '%' as Booked_percn
from flights
group by 1)

```

	airline text	status text
1	GoAir	Booked - 49% vs Cancelled - 51%
2	Air India	Booked - 45% vs Cancelled - 55%
3	SpiceJet	Booked - 48% vs Cancelled - 52%
4	Vistara	Booked - 55% vs Cancelled - 45%
5	IndiGo	Booked - 28% vs Cancelled - 72%
6	AirAsia India	Booked - 63% vs Cancelled - 37%

Query | Query History

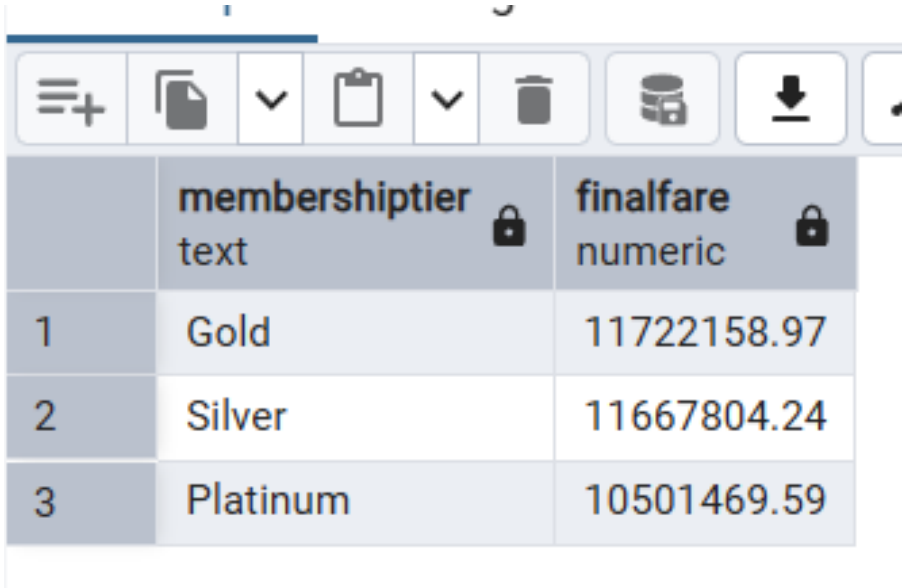
```sql
--- 5.  Determine which city has the highest number of bookings as a source city.

select f.sourcecity, count(b.*) from flights as f
join bookings as b
ON f.flightid = b.flightid
group by 1
order by 2 desc
limit 1
```

Data Output | Messages | Noti

	sourcecity text	count bigint
1	Kolkata	692

Query | Query History

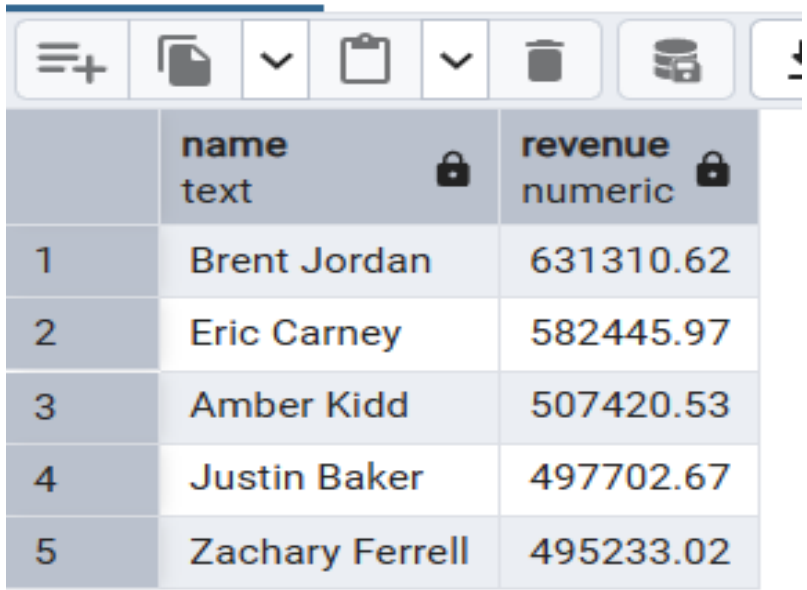
```sql
--- 6.  Find the customer segment (Membership Tier) that spends the most on bookings.

select c.membershiptier, round(sum(b.finalfare)::numeric,2) as FinalFare
from customers as c
join bookings as b
ON c.customerid = b.customerid
group by 1
order by 2 desc

```



	membershiptier text	finalfare numeric
1	Gold	11722158.97
2	Silver	11667804.24
3	Platinum	10501469.59

Query | Query History

```sql
--- 7.  List the top 5 customers who generated the highest total revenue.

select c.name, round(sum(b.finalfare)::numeric,2) as Revenue
from customers as c
join bookings as b
ON c.customerid = b.customerid
group by 1
order by 2 desc
limit 5
```



	name text	revenue numeric
1	Brent Jordan	631310.62
2	Eric Carney	582445.97
3	Amber Kidd	507420.53
4	Justin Baker	497702.67
5	Zachary Ferrell	495233.02

Query | Query History

```sql
--- 8.  Find the highest total Sacrifice after deducting discount amount by routes.

select concat as Route, sum(beforediscount) as BeforeDiscount,
round(sum(finalfare)::numeric, 2) as AfterDiscount, sum(Sacrificeamount) as TotalSacrifice from
(select *, round((beforediscount - finalfare)::numeric, 2) as SacrificeAmount from
(select *, round((finalfare/(1 - discountused))::numeric, 2) as BeforeDiscount from
(select concat(f.sourcecity, ' => ', f.destinationcity), b.discountused, b.finalfare
from flights as f
join bookings as b
ON f.flightid = b.flightid) as i
)as e
)
group by 1
order by 4 desc
limit 3
```

Data Output | Messages | Notifications

	route text	beforediscount numeric	afterdiscount numeric	totalsacrifice numeric
1	Pune => Jaipur	1968365.25	1652097.18	316268.07
2	Kolkata => Bengaluru	1564655.50	1301603.56	263051.94
3	Kolkata => Lucknow	1591089.80	1348055.69	243034.11

Query | Query History

```sql
--- 9.  Calculate the average on-time performance rate per airline.

select airline, round(avg(durationhrs)::numeric,1) as AvgTime
from flights
group by 1
order by 2
```

	airline text	avgtime numeric
1	Vistara	2.9
2	AirAsia India	3.2
3	Air India	3.3
4	GoAir	3.5
5	SpiceJet	3.5
6	IndiGo	3.7

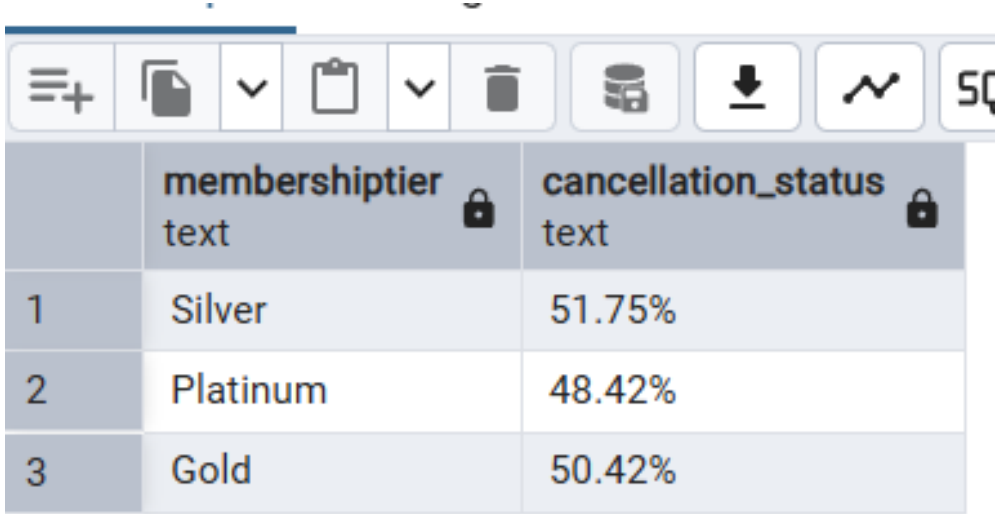
Query | Query History

```sql
--- 10. Determine which booking channel brings the highest revenue contribution.

select bookingchannel,
round(round(sum(finalfare)::numeric,2) * 100.0/(select sum(finalfare) from bookings)::numeric,2) || '%' as Contribution
from bookings
group by 1
```

	bookingchannel text	contribution text
1	Call Centre	24.72%
2	Website	24.63%
3	Travel Agent	25.04%
4	Mobile App	25.61%

Query | Query History

```sql
--- 11. Compare the Total Cancelled booking by Platinum vs. Gold vs. Silver customers.

--- Cancelled Booking
with Cancelled as (
select b.*, f.bookingstatus from bookings as b
join flights as f
ON b.flightid = f.flightid
)

--- Cancelled Status by Customers

select c.membershiptier,
round((sum(case when cn.bookingstatus = 'Canceled' then 1 else 0 end) * 100.0/count(*))::numeric, 2) || '%' as Cancellation_Status
from customers as c
join Cancelled as cn
ON c.customerid = cn.customerid
group by 1
```



	membershiptier text	cancellation_status text
1	Silver	51.75%
2	Platinum	48.42%
3	Gold	50.42%

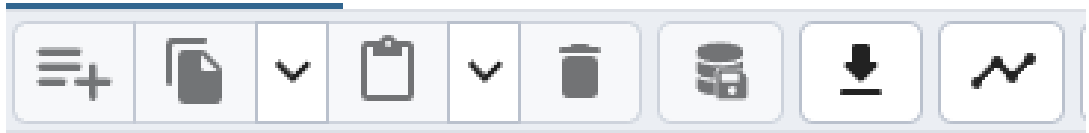
Query | Query History

```sql
--- 12. Find the busiest flight route (most bookings).

select concat(f.sourcecity, ' => ', f.destinationcity) as Routes,
count(b.*) as Bookings
from flights as f
join bookings as b
ON f.flightid = b.flightid
group by 1
order by 2 desc
limit 6
```

	routes text	bookings bigint
1	Pune => Jaipur	216
2	Kolkata => Lucknow	192
3	Kolkata => Bengaluru	176
4	Jaipur => Delhi	159
5	Mumbai => Pune	132
6	Bengaluru => Jaipur	117

Query | Query History

```sql
--- 13. Calculate the cancellation rate by booking channel.

select b.bookingchannel,
round((sum(case when f.bookingstatus = 'Canceled' then 1 else 0 end) * 100.0/count(*))::numeric, 2) || '%' as CancellationRate
from bookings as b
join flights as f
ON b.flightid = f.flightid
group by 1
```



	bookingchannel text	cancellationrate text
1	Call Centre	49.54%
2	Website	50.87%
3	Travel Agent	49.78%
4	Mobile App	50.92%

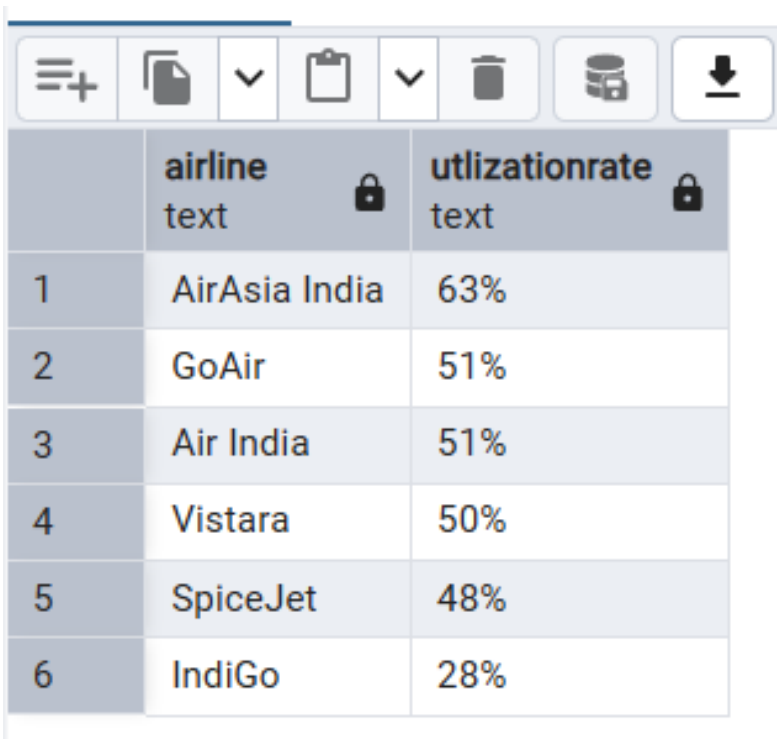
Query | Query History

```sql
--- 14. Identify the average revenue per booking per city (customer's city).

select c.city, round(avg(finalfare)::numeric, 2) as avgRevenue
from customers as c
join bookings as b
ON c.customerid = b.customerid
group by 1
```

	city text	avgrevenue numeric
1	Jaipur	7469.40
2	Bengaluru	7436.64
3	Lucknow	7321.86
4	Mumbai	7618.25
5	Kolkata	7763.52
6	Chennai	7368.06
7	Delhi	7746.23
8	Pune	7111.59
9	Ahmedabad	7364.52
10	Hyderabad	7430.80

Query | Query History

```sql
--- 15. Calculate the utilization rate of each airline.

select f.airline,
round((sum(case when f.bookingstatus = 'Booked' then 1 else 0 end) * 100/count(*))::numeric, 0) || '%' as UtlizationRate
from bookings as b
join flights as f
ON b.flightid = f.flightid
group by 1
order by 2 desc
```



	airline text	utlizationrate text
1	AirAsia India	63%
2	GoAir	51%
3	Air India	51%
4	Vistara	50%
5	SpiceJet	48%
6	IndiGo	28%