#### **Queries and Outputs**

Lab Group 1

Team ID - 110

Topic - Airport Management System

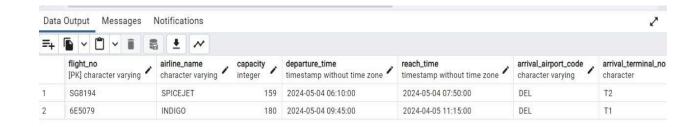
1. Retrieve all employees working in a department with the department code "DEL".

SELECT EmpID, FlightNo, Airline\_Name FROM EmpAssignedTo AS e JOIN Flight AS f ON e.FlightNo = f.Flight\_No WHERE Departure\_Airport\_Code = 'DEL';



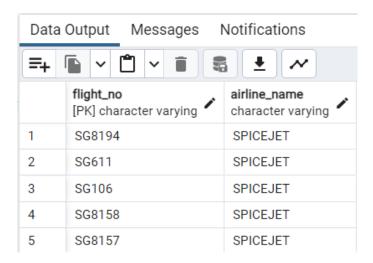
2. Retrieve all the flight information for flights departing from Ahmedabad (AMD) and arriving at Delhi (DEL) on May 4, 2024.

SELECT Flight\_No, Airline\_Name, Departure\_Time, Reach\_Time FROM Flight WHERE arrival\_airport\_Code= 'DEL' AND departure\_airport\_Code = 'AMD' AND Date(Departure\_time) = '2024-05-04';



#### 3. Find all flights operated by a specific airline.

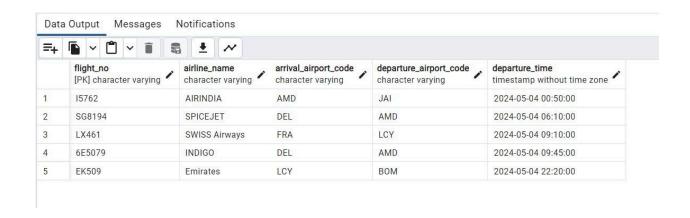
SELECT Flight\_No, Airline\_Name FROM Flight WHERE Airline\_Name = 'SPICEJET';



### 4. Give information for flights departing on 4 May 2024 in ascending order of departure time.

#### **SELECT**

Flight\_No, Airline\_Name, Arrival\_Airport\_Code, Departure\_Airport\_Code, Departure\_Time FROM Flight
WHERE DATE(Departure\_time) = '2024-05-04'
ORDER BY Departure\_time ASC;



#### 5. Get all transactions made using a specific payment method.

SELECT \* FROM Transaction
WHERE PaymentMethod = 'Internet Banking';

Data	Output Messa	ges Notifica	ations	
=+	<u> </u>		~	
	transactionid [PK] character	date /	paymentmethod character varying	amount numeric (6,2)
1	TRX25784	2024-04-06	Internet Banking	9000.00
2	TRX00835	2024-04-08	Internet Banking	6000.00
3	TRX48562	2024-04-09	Internet Banking	8000.00
4	TRX67354	2024-03-21	Internet Banking	6000.00
5	TRX30586	2024-04-07	Internet Banking	6000.00
6	TRX38474	2024-04-10	Internet Banking	8500.00

#### 6. List all employees along with their department name.

SELECT Employee.Emp\_ID, Employee.Name, Employee.DOB, Employee.Salary, Employee.GENDER, Department.Dept\_Name FROM Employee INNER JOIN Department ON Employee.DeptNo = Department.Dept\_No;

	emp_id character varying	name character varying (30)	dob date	salary integer	gender character	dept_name character varying €
1	E101	Ramesh Tiwari	1990-05-02	50000	M	Passenger Handling
2	E102	Raj Patel	1995-07-21	50000	М	Flight Operations
3	E103	Arjun Sharma	1992-10-02	50000	М	Flight Crew
4	E104	Nisha Singh	1990-11-06	50000	F	Air Traffic Control
5	E105	Aarti Kapoor	1991-12-01	50000	F	Finance and Administration
6	E106	Kushank Mandal	1995-08-24	45000	М	Passenger Handling
7	E107	Kishan Patel	1995-08-24	45000	М	Flight Operations
8	E108	Devanshi Verma	1995-08-24	45000	F	Flight Crew
9	E109	Meghpal Jadeja	1995-08-24	45000	М	Air Traffic Control
10	E110	Varun Rana	1995-08-24	45000	М	Finance and Administration
11	E111	Amee Mehta	1995-08-24	45000	F	Passenger Handling
12	E112	Aakash Singh	1991-09-15	65000	М	Air Traffic Control
13	E113	Kushal Makvana	1995-08-24	45000	М	Passenger Handling
14	E114	Lisha Sharma	1991-09-22	45000	F	Flight Operations
15	E115	Prisha Parekh	1993-08-01	45000	М	Flight Crew
16	E116	Gautam Shah	1990-08-14	45000	М	Air Traffic Control
17	E117	Niten Das	1988-04-24	45000	М	Finance and Administration
18	E118	Aditya Banerjee	1988-02-12	45000	М	Passenger Handling
19	E119	Kiran Sharma	1988-07-19	45000	F	Passenger Handling
Tota	al rows: 128 of 128	Query complete 00:00	:00.101			

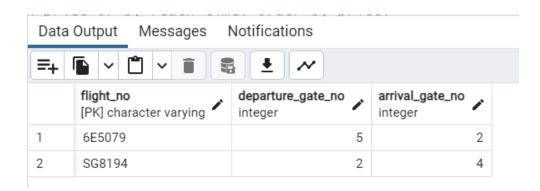
### 7. Retrieve all tickets issued along with the corresponding passenger and flight information.

SELECT Ticket.Ticket\_ID, Ticket.Price, Ticket.Date\_Of\_Issue, Ticket.TransactionID,
Ticket.Flight\_No, Ticket.PID,Passenger.Name AS Passenger\_Name, Flight.Departure\_Time,
Flight.Reach\_Time
FROM Ticket
INNER JOIN Passenger ON Ticket.PID = Passenger.PID
INNER JOIN Flight ON Ticket.Flight\_No = Flight.Flight\_No;

	ticket_id character varying	price numeric (6,2)	date_of_issue timestamp without time zone	transactionid character	flight_no character varying	pid character varying	passenger_name character varying (30)	departure_time timestamp without time zone	reach_time timestamp without
1	TCKT001	2500.00	2024-04-02 00:00:00	TRX14352	6E5079	P001	Sneha Gupta	2024-05-04 09:45:00	2024-04-05 11:15:0
2	TCKT002	2200.00	2024-04-10 00:00:00	TRX22354	SG8194	P002	Vivek Singh	2024-05-04 06:10:00	2024-05-04 07:50:0
3	TCKT003	3000.00	2024-04-04 00:00:00	TRX32114	EK501	P003	Sachin Pawar	2024-06-08 04:30:00	2024-06-05 13:15:0
4	TCKT004	2800.00	2024-04-06 00:00:00	TRX25784	QR4773	P004	Neha Jain	2024-06-08 21:45:00	2024-06-09 06:55:0
5	TCKT005	2700.00	2024-03-31 00:00:00	TRX67227	AI859	P005	Karthik lyer	2024-05-21 01:30:00	2024-05-21 05:55:0
6	TCKT006	2900.00	2024-04-09 00:00:00	TRX85646	QP1486	P006	Vishal Rajput	2024-07-17 13:50:00	2024-07-18 10:46:0
7	TCKT007	2700.00	2024-04-08 00:00:00	TRX00835	6E2282	P007	Rajiv Chauhan	2024-07-17 02:00:00	2024-07-18 20:44:0
8	TCKT008	2500.00	2024-04-13 00:00:00	TRX27567	6E685	P008	Riya Gill	2024-07-17 16:45:00	2024-07-18 14:32:0
9	TCKT009	2200.00	2024-04-09 00:00:00	TRX48562	SG611	P009	Kirthy Thevar	2024-05-01 10:45:00	2024-05-01 13:00:0
10	TCKT010	2800.00	2024-04-17 00:00:00	TRX28472	EK513	P010	Rajesh Kumar	2024-07-17 04:15:00	2024-07-17 17:20:0
11	TCKT011	2600.00	2024-03-29 00:00:00	TRX23407	UA9715	P011	Anshu Grover	2024-07-17 20:30:00	2024-07-18 17:25:0
12	TCKT012	2400.00	2024-03-21 00:00:00	TRX67354	LX461	P012	Anjali Mishra	2024-05-04 09:10:00	2024-05-04 13:55:0
13	TCKT013	2700.00	2024-03-19 00:00:00	TRX68573	15762	P013	Aryan Joshi	2024-05-04 00:50:00	2024-05-04 16:50:0
14	TCKT014	3000.00	2024-03-28 00:00:00	TRX10284	EK509	P014	Rajiv Verma	2024-05-04 22:20:00	2024-05-05 13:15:0
15	TCKT015	2800.00	2024-04-07 00:00:00	TRX04537	QR4771	P015	Nisha Reddy	2024-06-08 04:20:00	2024-06-08 20:55:0
16	TCKT016	2900.00	2024-04-07 00:00:00	TRX30586	QR4791	P016	Mukti Rai	2024-06-08 04:35:00	2024-06-08 20:55:0
17	TCKT017	2700.00	2024-04-08 00:00:00	TRX53967	AI538	P017	Kunti Nair	2024-06-08 20:40:00	2024-06-08 23:25:0
18	TCKT018	2200.00	2024-04-09 00:00:00	TRX23856	SG106	P018	Anjana Sridhar	2024-05-21 20:55:00	2024-05-22 11:00:0
Tota	al rows: 20 of 20	uery complete 0	0:00:00.076						Ln 957, Col

8. What are the flight numbers along with their departure gate numbers and arrival gate numbers for flights departing from the 'AMD' airport on May 4, 2024?

SELECT Flight\_No, Departure\_Gate\_No, Arrival\_Gate\_No FROM Flight WHERE Departure\_Airport\_Code = 'AMD' AND DATE(Departure\_Time) = '2024-05-04';



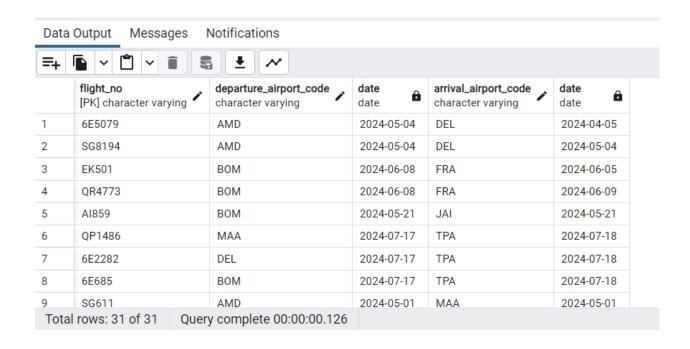
9. List the passengers' IDs and names along with the total weight of their luggage, where the total weight of luggage for each passenger exceeds or equals 32 kilograms.

SELECT Passenger.PID, Passenger.Name, SUM(Luggage.Weight) AS Total\_Weight FROM Passenger
LEFT JOIN Luggage ON Passenger.PID = Luggage.PID
GROUP BY Passenger.PID, Passenger.Name
HAVING SUM(Luggage.Weight) >= 32;



10. List all flights along with their departure and arrival airports' information.

SELECT Flight\_No, Departure\_Airport\_Code, DATE(Departure\_Time), Arrival\_Airport\_Code, DATE(Reach\_Time) FROM Flight;



#### 11. Retrieve the average salary of employees in each department.

SELECT Department.Dept\_Name, CAST(AVG(Employee.Salary) AS INT) AS Avg\_Salary FROM Department

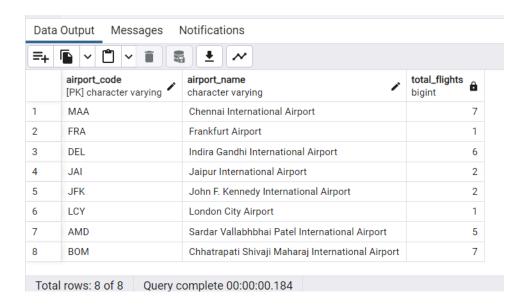
LEFT JOIN Employee ON Department.Dept\_No = Employee.DeptNo GROUP BY Department.Dept\_Name;

	dept_name character varying €	avg_salary integer
1	Sales and Marketing	70333
2	Air Traffic Control	56682
3	Finance and Administration	56900
4	Flight Crew	58241
5	Passenger Handling	55800
6	Flight Operations	58696

#### 12. Find the total number of flights departing from each airport.

SELECT Airport\_Code, A.Airport\_Name, COUNT(Flight.Flight\_No) AS Total\_Flights FROM Flight

INNER JOIN Airport AS A ON Flight.Departure\_Airport\_Code = A.Airport\_Code GROUP BY A.Airport\_Code, A.Airport\_Name;



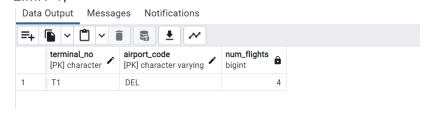
# 13. Find the number of tickets issued for each flight along with the total revenue generated.

SELECT Ticket.Flight\_No, COUNT(Ticket.Ticket\_ID) AS Num\_Tickets, SUM(Ticket.Price) AS Total\_Revenue FROM Ticket
GROUP BY Ticket.Flight\_No;

	flight_no character varying	num_tickets bigint	total_revenue numeric
1	SG106	5	11000.00
2	QR4791	1	2900.00
3	EK513	1	2800.00
4	SG8194	1	2200.00
5	AI538	1	2700.00
6	6E2282	1	2700.00
7	6E685	1	2500.00
8	QP1346	1	2700.00
9	UA9715	1	2600.00
10	6E1431	1	2800.00
11	SG611	1	2200.00
12	15762	1	2700.00
13	QP1486	1	2900.00
14	AI859	1	2700.00
15	LX461	1	2400.00
16	QR4773	3	8400.00
17	QR4771	1	2800.00
18	6E5079	4	10000.00
19	EK509	1	3000.00
Tota	l rows: 20 of 20	Query complete	00:00:00.105

#### 14. Find the busiest terminal in terms of the number of flights.

SELECT Terminal.Terminal\_No, Terminal.Airport\_Code,
COUNT(Flight.Flight\_No) AS Num\_Flights
FROM Terminal
INNER JOIN Flight ON Terminal.Terminal\_No = Flight.Departure\_Terminal\_No AND
Terminal.Airport\_Code = Flight.Departure\_Airport\_Code
GROUP BY Terminal.Terminal\_No, Terminal.Airport\_Code
ORDER BY Num\_Flights DESC
LIMIT 1;



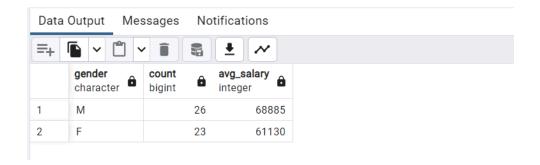
### 15. List the employees who are assigned to operate flights for a specific airline(Qatar Airways).

SELECT E.Name, D.DEPT\_NO, D.Dept\_Name, A.Airline\_Name FROM Employee AS E INNER JOIN EmpAssignedTo AS ET ON E.Emp\_ID = ET.EmpID INNER JOIN Department AS D ON D.Dept\_No=E.DeptNo INNER JOIN Airlines AS A ON E.Airline\_Name = A.Airline\_Name WHERE A.Airline\_Name = 'Qatar Airways';

Data	Output Messages I	Notifications		
=+		<u>*</u> *		
	name character varying (30)	dept_no character varying (5)	dept_name character varying	airline_name character varying
1	Jainish Sharma	DEP03	Flight Crew	Qatar Airways
2	Rohan Verma	DEP03	Flight Crew	Qatar Airways

# 16. Find the average salary of male and female employees separately for a particular airport('DEL').

SELECT Gender, COUNT(Gender), CAST(AVG(Salary) AS INT) AS Avg\_Salary FROM Employee WHERE Airport\_Code = 'DEL' GROUP BY Gender;



#### 17. List all flight numbers along with the total luggage weight on each flight.

SELECT DISTINCT flight.Flight\_No, SUM(Luggage.Weight) AS Total\_Luggage\_Weight FROM Flight

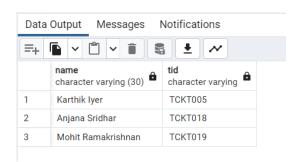
LEFT JOIN Ticket ON Flight.Flight\_No = Ticket.Flight\_No LEFT JOIN Passenger ON Ticket.PID = Passenger.PID

LEFT JOIN Luggage ON Passenger.PID = Luggage.PID GROUP BY flight.Flight\_No ,Luggage.Weight HAVING Luggage.Weight IS NOT NULL ORDER BY Total\_Luggage\_Weight DESC;

	flight_no [PK] character varying	total_luggage_weight numeric
1	SG106	110.750
2	6E5079	61.000
3	AI538	35.000
4	QR4773	34.000
5	6E2282	33.500
6	QR4773	30.250
7	QP1486	28.500
8	15762	27.250
9	UA9715	26.800
10	SG8194	24.300
11	LX461	21.500
12	SG611	18.000
13	QP1346	17.000
14	6E685	15.500
15	QR4791	15.500
16	6E1431	13.500
17	AI859	12.750
18	EK513	12.600
19	EK501	10.000
Tota	al rows: 21 of 21 Que	y complete 00:00:00.135

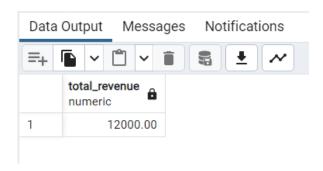
### 18. Display passengers have boarding passes for flights on May 21, 2024, along with the corresponding ticket IDs.

SELECT P.Name, B.TID FROM Passenger AS P INNER JOIN Boarding\_Pass AS B ON P.PID = B.PID WHERE DATE(B.BoardingTime)='2024-05-21';



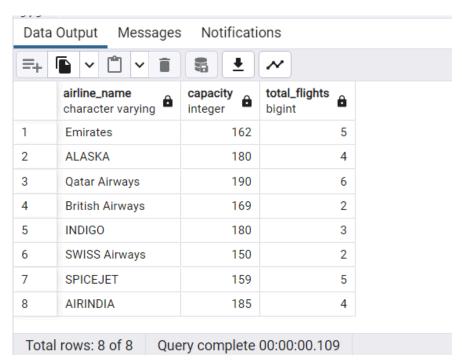
# 19. Find the total revenue earned from ticket sales on a specific date: What is the total revenue generated from transactions made on April 7, 2024, considering the amounts recorded in the TRANSACTION table?

SELECT SUM(TR.Amount) AS Total\_Revenue FROM TRANSACTION AS TR WHERE TR.Date = '2024-04-07';



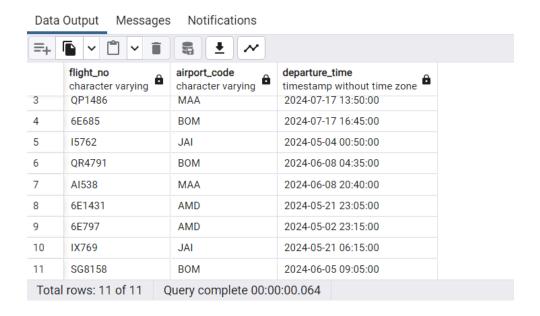
### 20. Retrieve the names and capacities of airlines along with the total number of flights operated by each airline.

SELECT A.Airline\_Name, F.Capacity, COUNT(F.Flight\_No) AS Total\_Flights FROM Airlines AS A
LEFT JOIN Flight AS F ON A.Airline\_Name = F.Airline\_Name
GROUP BY A.Airline\_Name, F.Capacity;



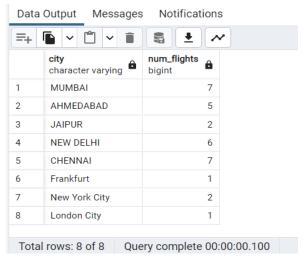
### 21. List the flight numbers, airport code and departure times for flights departing from terminals of a specific type.

SELECT F.Flight\_No, T.Airport\_Code, F.Departure\_Time FROM Flight AS F INNER JOIN Terminal AS T ON F.Departure\_Terminal\_No = T.Terminal\_No AND F.Departure\_Airport\_Code = T.Airport\_Code WHERE T.Terminal\_Type = 'International';



#### 22. Find the number of flights departing from each city.

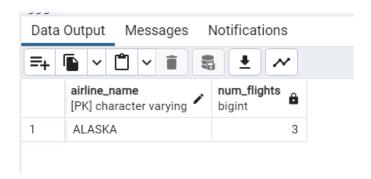
SELECT A.CITY, COUNT(F.Flight\_No) AS Num\_Flights FROM Flight AS F INNER JOIN Airport AS A ON F.Departure\_Airport\_Code = A.Airport\_Code GROUP BY A.CITY;



#### 23. Find the airlines with the highest number of flights operated from a specific airport.

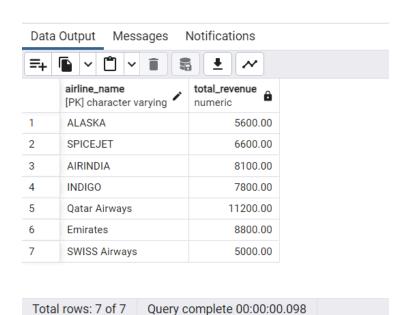
SELECT A.Airline\_Name, COUNT(F.Flight\_No) AS Num\_Flights FROM Airlines AS A INNER JOIN Flight AS F ON A.Airline\_Name = F.Airline\_Name WHERE F.Departure\_Airport\_Code = 'MAA' GROUP BY A.Airline\_Name ORDER BY Num\_Flights DESC

#### LIMIT 1;



#### 24. Find the total revenue generated from ticket sales for flights operated by each airline.

SELECT A.Airline\_Name, SUM(T.Price) AS Total\_Revenue FROM Airlines AS A INNER JOIN Flight AS F ON A.Airline\_Name = F.Airline\_Name INNER JOIN Ticket AS T ON F.Flight\_No = T.Flight\_No GROUP BY A.Airline\_Name;



25. Find the number of flights departing from each airport along with the average capacity of those flights.

SELECT F.Departure\_Airport\_Code, COUNT(F.Flight\_No) AS Num\_Flights, CAST(AVG(F.Capacity) AS INT) AS Avg\_Capacity FROM Flight AS F

#### GROUP BY F.Departure\_Airport\_Code;

Data	Output Messages N	otifications	
=+		<u>*</u> ~	
	departure_airport_code character varying	num_flights bigint	avg_capacity integer
1	JAI	2	185
2	MAA	7	173
3	JFK	2	160
4	LCY	1	150
5	FRA	1	190
6	DEL	6	177
7	AMD	5	172
8	ВОМ	7	175
Tota	I rows: 8 of 8 Query co	mplete 00:00:00	0.089

#### 26. List all flights where the departure gate is the same as the arrival gate.

SELECT f.Flight\_No, f.Departure\_Gate\_No, f.Arrival\_Gate\_No FROM Flight f
WHERE f.Departure\_Gate\_No = f.Arrival\_Gate\_No;

	flight_no [PK] character varying	departure_gate_no integer	arrival_gate_no integer
1	AI538	4	4
2	QP1346	2	2
3	SG8158	1	1
4	BR123	1	1

#### 27. Retrieve the names of passengers who have not checked in for their flights.

SELECT P.Name,P.pid FROM Passenger P LEFT JOIN Boarding\_Pass B ON P.PID = B.PID WHERE B.ID IS NULL;

	name character varying (30)	pid [PK] character varying
1	Bansi Patel	P024
2	Sania Patel	P023
3	Meghavi Gohil	P022
4	Nipurna Patel	P021

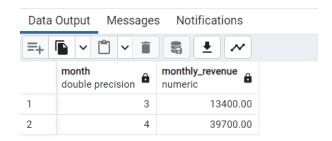
#### 28. Find the busiest days for flight departures from each airport.

SELECT F.Departure\_Airport\_Code, DATE(F.Departure\_Time) AS Departure\_Date, COUNT(F.Flight\_No) AS Num\_Flights FROM Flight AS F GROUP BY F.Departure\_Airport\_Code, Departure\_Date ORDER BY Num\_Flights DESC;

Data	Output Messages N	otifications		
	departure_airport_code character varying	departure_date date	num_flights bigint	3
1	BOM	2024-06-08	;	3
2	AMD	2024-05-04	:	2
3	MAA	2024-05-01		2
4	DEL	2024-07-17	:	2
5	MAA	2024-07-17		1
6	ВОМ	2024-06-05		1
7	MAA	2024-07-03		1
8	JFK	2024-06-15		1
9	FRA	2024-06-13		1
Tota	l rows: 26 of 26 Query	complete 00:00:00	0.086	

#### 29. Retrieve the total revenue generated from ticket sales for each month of the year.

SELECT EXTRACT(MONTH FROM T.Date\_Of\_Issue) AS Month, SUM(T.Price) AS Monthly\_Revenue FROM Ticket AS T INNER JOIN Transaction AS Tr ON T.TransactionID = Tr.TransactionID GROUP BY EXTRACT(MONTH FROM T.Date\_Of\_Issue);



### 30. Retrieve the name, department, airline name of the employee with the highest salary.

SELECT Name, DeptNo, Airline\_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 1;



#### 31. Display the oldest employee.

SELECT \*,

DATE\_PART('year', AGE(CURRENT\_DATE, DOB)) AS Age
FROM Employee

ORDER BY AGE(CURRENT\_DATE, DOB) DESC

LIMIT 1;



#### 32. What is the highest priced ticket sold?

SELECT flight\_no,airline\_name, max(Price) AS Sales FROM Ticket natural join flight GROUP BY Flight\_No,ticket.price,airline\_name ORDER BY ticket.price DESC LIMIT 1;

	flight_no character varying	airline_name character varying	sales numeric
1	EK509	Emirates	3000.00

#### 33. List of all employees of a given airline name.

SELECT \* FROM Employee WHERE Airline\_Name= 'Emirates';

=+		<u>*</u> ~						
	emp_id [PK] character varying	name character varying (30)	dob date	salary integer	gender character	airline_name character varying	deptno character varying (5)	airport_code character varying
1	E130	Amey lyer	1995-09-25	45000	M	Emirates	DEP01	MAA
2	E131	Shubham Sheth	1993-08-24	45000	М	Emirates	DEP02	MAA
3	E132	Tanmay Sharma	1995-02-11	45000	М	Emirates	DEP03	MAA
4	E133	Dhairy Jha	1995-04-12	45000	М	Emirates	DEP04	MAA
5	E134	Jinal Joshi	1996-07-14	45000	F	Emirates	DEP05	MAA
6	E165	Vatsal Thakkar	1993-12-24	70000	М	Emirates	DEP03	LCY
7	E171	Anushka Patel	1993-11-25	55000	F	Emirates	DEP03	JFK
8	E172	Punam Kumar	1992-06-29	70000	М	Emirates	DEP02	JFK
9	E182	Aryan Singh	1998-09-03	58000	М	Emirates	DEP02	DEL

# 34. What are the top three airlines based on the total revenue generated from ticket sales across all flights?

SELECT a.Airline\_Name, SUM(t.Price) AS Total\_Revenue FROM Airlines a
JOIN Flight f ON a.Airline\_Name = f.Airline\_Name
JOIN Ticket t ON f.Flight\_No = t.Flight\_No
GROUP BY a.Airline\_Name
ORDER BY Total\_Revenue DESC
LIMIT 3;

1 Qatar Airways 16800.00 2 SPICEJET 15400.00 3 INDIGO 15300.00		airline_name [PK] character varying	total_revenue numeric
	1	Qatar Airways	16800.00
3 INDIGO 15300.00	2	SPICEJET	15400.00
	3	INDIGO	15300.00

### 35. What is the distribution of employees across departments at the airport with the airport code 'MAA'?

SELECT d.Dept\_Name, COUNT(e.Emp\_ID) AS Total\_Employees FROM Department d
LEFT JOIN Employee e ON d.Dept\_No = e.DeptNo
WHERE AIRPORT\_CODE = 'MAA'
GROUP BY d.Dept\_Name
ORDER BY Total\_Employees DESC;

	dept_name character varying	total_employees bigint
1	Passenger Handling	12
2	Air Traffic Control	10
3	Flight Crew	9
4	Flight Operations	9
5	Finance and Administration	9

#### 36. List average ticket prices for flights operated by each airline.

SELECT a.Airline\_Name, CAST(AVG(t.Price) AS INT) AS Avg\_Ticket\_Price FROM Airlines a
JOIN Flight f ON a.Airline\_Name = f.Airline\_Name
JOIN Ticket t ON f.Flight\_No = t.Flight\_No
GROUP BY a.Airline\_Name
ORDER BY Avg\_Ticket\_Price DESC;

	airline_name [PK] character varying	avg_ticket_price integer
1	Emirates	2933
2	Qatar Airways	2800
3	ALASKA	2800
4	AIRINDIA	2700
5	INDIGO	2550
6	SWISS Airways	2500
7	SPICEJET	2200

### 37. What is the total revenue generated from ticket sales for each airline operating at the airport with the airport code 'MAA'?

SELECT a.Airline\_Name, SUM(t.Price) AS Total\_Revenue

FROM Airlines a
JOIN Flight f ON a.Airline\_Name = f.Airline\_Name
JOIN Ticket t ON f.Flight\_No = t.Flight\_No
JOIN Airport ar ON f.Departure\_Airport\_Code = ar.Airport\_Code
WHERE ar.Airport\_Code = 'MAA'
GROUP BY a.Airline\_Name
ORDER BY Total\_Revenue DESC;

airline_name [PK] character varying	total_revenue numeric
SPICEJET	11000.00
ALASKA	5600.00
AIRINDIA	2700.00