

# Aviation Data Insights System



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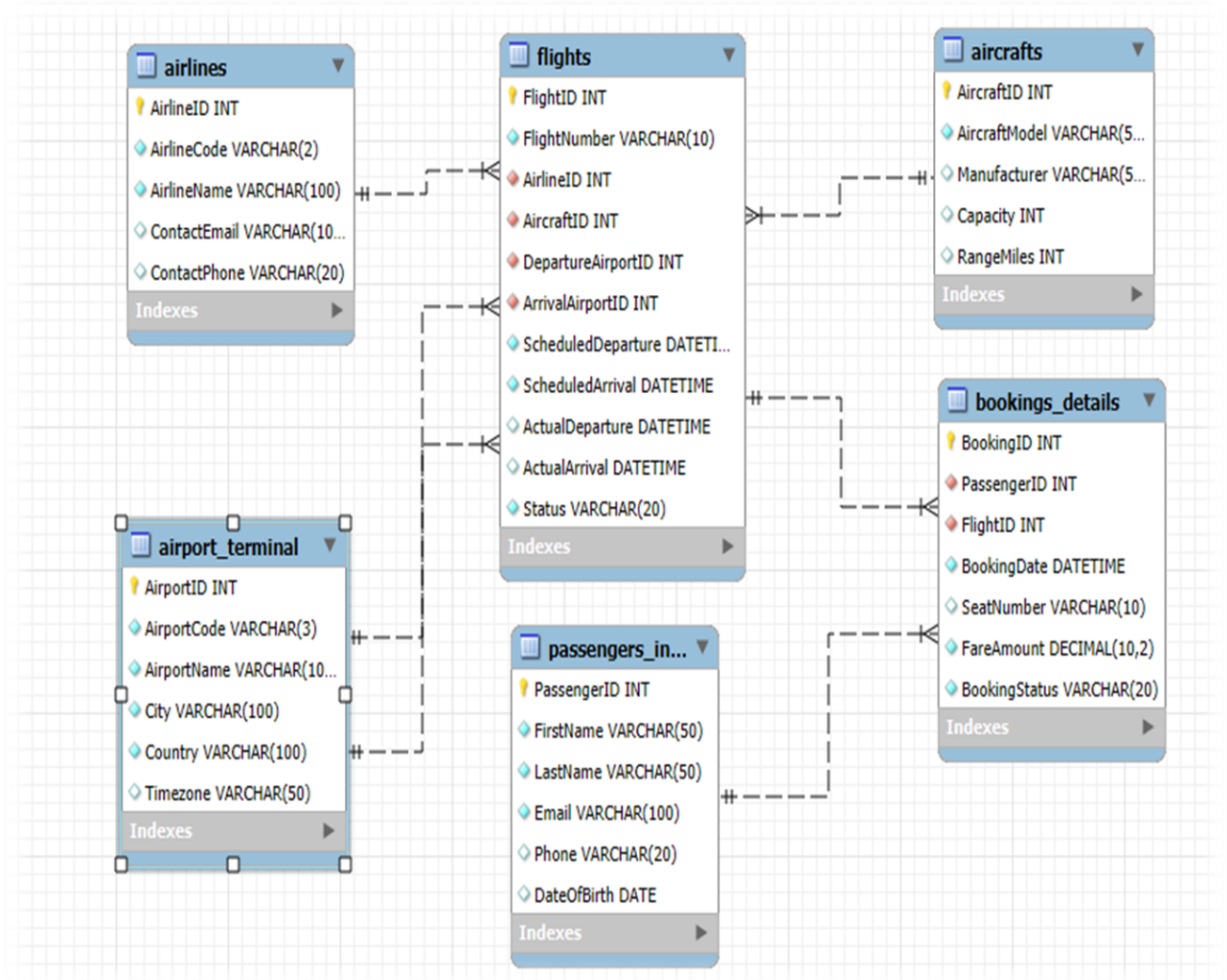
# INTRODUCTION

The **Aviation Data Insights System** represents a powerful SQL-based solution designed to revolutionize how we interact with and comprehend critical flight information. In the rapidly evolving and data-intensive world of aviation, the ability to efficiently store, manage, and analyze vast quantities of operational data is no longer merely advantageous—it's absolutely essential. This project directly addresses this need by establishing a comprehensive and meticulously structured relational database, capable of housing diverse datasets ranging from individual flight records and on-time performance metrics to intricate route efficiency analyses and indicators of potential delays.

Our primary objective with this system is to transform raw, often disparate, flight data into actionable intelligence. By harnessing the full capabilities of SQL, the **Aviation Data Insights System** facilitates sophisticated querying, complex aggregations, and in-depth analytical processing. This empowers users to uncover hidden trends, identify operational inefficiencies, and make more informed, data-driven decisions across various facets of the aviation industry, from strategic planning to day-to-day operations.

Ultimately, this project showcases more than just efficient data storage; it demonstrates the strategic application of SQL to unlock profound insights that can significantly enhance safety protocols, optimize operational workflows, and contribute to the overall advancement and efficiency of the aviation sector. The **Aviation Data Insights System** serves as a foundational tool for anyone seeking to leverage the immense value locked within aviation data.

# ER DIAGRAM



## Databases :

Create database flights\_data;

Use flights\_data;

Show databases;

	Database
▶	flights_data
	information_schema
	mysql
	performance_schema
	sys

## Tables In Flights Data Database :

Show tables:

	Tables_in_flights_data
▶	aircrafts
	airlines
	airport_terminal
	bookings_details
	flights
	passengers_info

## 1. DATA DEFINATION LANGUAGE (DDL)

### I. Creating Tables

#### A) Airport Terminal

```
CREATE TABLE Airport_Terminal AirportID INT PRIMARY KEY,  
AirportCode VARCHAR(3) UNIQUE NOT NULL,  
AirportName VARCHAR(100) NOT NULL,  
City VARCHAR(100) NOT NULL,  
Country VARCHAR(100) NOT NULL,  
Timezone VARCHAR(50));
```

Desc Airport\_Terminal;

	Field	Type	Null	Key	Default	Extra
►	AirportID	int	NO	PRI	NULL	
	AirportCode	varchar(3)	NO	UNI	NULL	
	AirportName	varchar(100)	NO		NULL	
	City	varchar(100)	NO		NULL	
	Country	varchar(100)	NO		NULL	
	Timezone	varchar(50)	YES		NULL	

#### B) Airlines

```
CREATE TABLE Airlines (AirlineID INT PRIMARY KEY,  
AirlineCode VARCHAR(2) UNIQUE NOT NULL,  
AirlineName VARCHAR(100) NOT NULL,  
ContactEmail VARCHAR(100),  
ContactPhone VARCHAR(20));
```

Desc Airlines;

	Field	Type	Null	Key	Default	Extra
►	AirlineID	int	NO	PRI	NULL	
	AirlineCode	varchar(2)	NO	UNI	NULL	
	AirlineName	varchar(100)	NO		NULL	
	ContactEmail	varchar(100)	YES		NULL	
	ContactPhone	varchar(20)	YES		NULL	

### C) Aircraft

```
CREATE TABLE Aircrafts (AircraftID INT PRIMARY KEY,  
AircraftModel VARCHAR(50) NOT NULL,  
Manufacturer VARCHAR(50),  
Capacity INT,  
RangeMiles INT);
```

Desc Aircraft;

	Field	Type	Null	Key	Default	Extra
►	AircraftID	int	NO	PRI	NULL	
	AircraftModel	varchar(50)	NO		NULL	
	Manufacturer	varchar(50)	YES		NULL	
	Capacity	int	YES		NULL	
	RangeMiles	int	YES		NULL	

### D) Flights

```
CREATE TABLE Flights ( FlightID INT PRIMARY KEY,  
FlightNumber VARCHAR(10) NOT NULL,  
AirlineID INT NOT NULL,  
AircraftID INT NOT NULL,  
DepartureAirportID INT NOT NULL,  
ArrivalAirportID INT NOT NULL,  
ScheduledDeparture DATETIME NOT NULL,  
ScheduledArrival DATETIME NOT NULL,  
ActualDeparture DATETIME,  
ActualArrival DATETIME,  
Status VARCHAR(20) NOT NULL,  
FOREIGN KEY (AirlineID) REFERENCES Airlines(AirlineID),  
FOREIGN KEY (AircraftID) REFERENCES Aircrafts(AircraftID),  
FOREIGN KEY (DepartureAirportID) REFERENCES Airport_Terminal(AirportID),  
FOREIGN KEY (ArrivalAirportID) REFERENCES Airport_Terminal(AirportID)
```

Desc Flights;

	Field	Type	Null	Key	Default	Extra
►	FlightID	int	NO	PRI	NULL	
	FlightNumber	varchar(10)	NO		NULL	
	AirlineID	int	NO	MUL	NULL	
	AircraftID	int	NO	MUL	NULL	
	DepartureAirportID	int	NO	MUL	NULL	
	ArrivalAirportID	int	NO	MUL	NULL	
	ScheduledDeparture	datetime	NO		NULL	
	ScheduledArrival	datetime	NO		NULL	
	ActualDeparture	datetime	YES		NULL	
	ActualArrival	datetime	YES		NULL	
	Status	varchar(20)	NO		NULL	

#### E) Passengers Info

CREATE TABLE Passengers\_Info (PassengerID INT PRIMARY KEY,  
FirstName VARCHAR(50) NOT NULL,  
LastName VARCHAR(50) NOT NULL,  
Email VARCHAR(100) UNIQUE NOT NULL,  
Phone VARCHAR(20),  
DateOfBirth DATE);

Desc Passengers\_Info;

	Field	Type	Null	Key	Default	Extra
►	PassengerID	int	NO	PRI	NULL	
	FirstName	varchar(50)	NO		NULL	
	LastName	varchar(50)	NO		NULL	
	Email	varchar(100)	NO	UNI	NULL	
	Phone	varchar(20)	YES		NULL	
	DateOfBirth	date	YES		NULL	

#### F) Bookings Details

CREATE TABLE Bookings\_Details (BookingID INT PRIMARY KEY,  
PassengerID INT NOT NULL,  
FlightID INT NOT NULL,  
BookingDate DATETIME NOT NULL,

SeatNumber VARCHAR(10),  
 FareAmount DECIMAL(10, 2) NOT NULL,  
 BookingStatus VARCHAR(20) NOT NULL,  
 FOREIGN KEY (PassengerID) REFERENCES Passengers\_info(PassengerID),  
 FOREIGN KEY (FlightID) REFERENCES Flights(FlightID),  
 UNIQUE (FlightID, SeatNumber) );

Desc Bookings\_Details;

	Field	Type	Null	Key	Default	Extra
►	BookingID	int	NO	PRI	NULL	
	PassengerID	int	NO	MUL	NULL	
	FlightID	int	NO	MUL	NULL	
	BookingDate	datetime	NO		NULL	
	SeatNumber	varchar(10)	YES		NULL	
	FareAmount	decimal(10,2)	NO		NULL	
	BookingStatus	varchar(20)	NO		NULL	

## II. Alter Table

### A) Alter Table – Add Column

Alter table airport\_terminal add column PassportIndexNo int not null;

	Field	Type	Null	Key	Default	Extra
►	AirportCode	varchar(3)	NO	UNI	NULL	
	AirportID	int	NO	PRI	NULL	
	AirportName	varchar(100)	NO		NULL	
	City	varchar(100)	NO		NULL	
	Country	varchar(100)	NO		NULL	
	PassportIndexNo	int	NO		NULL	
	Timezone	varchar(50)	YES		NULL	



## B) Alter Table – Modify Column

Alter table aircrafts [modify](#) Manufacturer Varchar(60);

	Field	Type	Null	Key	Default	Extra
▶	AircraftID	int	NO	PRI	NULL	
	AircraftModel	varchar(50)	NO		NULL	
	Manufacturer	varchar(60)	YES		NULL	
	Capacity	int	YES		NULL	
	RangeMiles	int	YES		NULL	

## C) Alter Table – Rename Column

Alter table passengers\_details [rename column](#) email to EmailId;

	Field	Type	Null	Key	Default	Extra
▶	PassengerID	int	NO	PRI	NULL	
	FirstName	varchar(50)	NO		NULL	
	LastName	varchar(50)	NO		NULL	
	EmailId	varchar(100)	NO	UNI	NULL	
	Phone	varchar(20)	YES		NULL	
	DateOfBirth	date	YES		NULL	

## D) Alter Table – Rename Table

Alter table Passengers\_Info [rename to](#) Passengers\_Details;

	Field	Type	Null	Key	Default	Extra
▶	PassengerID	int	NO	PRI	NULL	
	FirstName	varchar(50)	NO		NULL	
	LastName	varchar(50)	NO		NULL	
	EmailId	varchar(100)	NO	UNI	NULL	
	Phone	varchar(20)	YES		NULL	
	DateOfBirth	date	YES		NULL	

## E) Alter Table – Drop Column

Alter table passengers\_details drop column DateOfBirth;

	Field	Type	Null	Key	Default	Extra
▶	PassengerID	int	NO	PRI	NULL	
	FirstName	varchar(50)	NO		NULL	
	LastName	varchar(50)	NO		NULL	
	EmailId	varchar(100)	NO	UNI	NULL	
	Phone	varchar(20)	YES		NULL	

## III. Truncate Table

Truncate Passengers\_Details;

## IV. Drop Table

Drop table Passengers\_Details;

# 2. DATA MANIPULATION LANGUAGE (DML)

## I. Insert Into Tables

INSERT INTO Airport\_Terminal (AirportId,AirportCode, AirportName, City, Country, Timezone) VALUES  
(1,'BOM', 'Chhatrapati Shivaji Maharaj International Airport', 'Mumbai', 'India', 'Asia/Kolkata');  
Select \* from Airport\_Terminal;

	AirportID	AirportCode	AirportName	City	Country	Timezone
▶	1	BOM	Chhatrapati Shivaji Maharaj International Airport	Mumbai	India	Asia/Kolkata
	2	DEL	Indira Gandhi International Airport	Delhi	India	Asia/Kolkata
	3	JFK	John F. Kennedy International Airport	New York	USA	America/New_York
	4	LHR	Heathrow Airport	London	UK	Europe/London
	5	DXB	Dubai International Airport	Dubai	UAE	Asia/Dubai
*	NULL	NULL	NULL	NULL	NULL	NULL

## II. Update Into Tables

Update First Name & Last Name where Passenger Id = 211

```
UPDATE passengers_details SET firstname="Jonathan",lastname="Trott"  
WHERE passengerid=211;
```

	PassengerID	FirstName	LastName	EmailId	Phone
▶	211	Jonathan	Trott	alice.smith@example.com	9876543210
	311	Bob	Johnson	bob.j@example.com	8765432109
	411	Charlie	Brown	charlie.b@example.com	7654321098
	512	Johnson	Bread	johnsonbread@example.com	7485968486
	611	Mike	Hussey	mikehussey@example.com	7859426235
	616	Kevin	Piterson	kevinpiterson@example.com	8899578486
	711	Jacob	Oram	jacoboram@example.com	7788957584
	811	Jimmy	Neesham	jimmyneesham@example.com	9584758694
	819	Andrew	Flintoff	andrewflintoff@example.com	9875963545
	911	Mitchell	Marsh	mitchellmarsh@example.com	8859574876
*	NULL	NULL	NULL	NULL	NULL

## III. Delete From Table

Delete record where passenger Id =819

```
DELETE from passengers_details Where passengerid= 819;
```

	PassengerID	FirstName	LastName	EmailId	Phone
▶	211	Jonathan	Trott	alice.smith@example.com	9876543210
	311	Bob	Johnson	bob.j@example.com	8765432109
	411	Charlie	Brown	charlie.b@example.com	7654321098
	512	Johnson	Bread	johnsonbread@example.com	7485968486
	611	Mike	Hussey	mikehussey@example.com	7859426235
	616	Kevin	Piterson	kevinpiterson@example.com	8899578486
	711	Jacob	Oram	jacoboram@example.com	7788957584
	811	Jimmy	Neesham	jimmyneesham@example.com	9584758694
	911	Mitchell	Marsh	mitchellmarsh@example.com	8859574876
*	NULL	NULL	NULL	NULL	NULL

### 3) DATA QUERY LANGUAGE (DQL)

- Select Query

#### A. Select Query for entire data

`SELECT * from bookings_details;`

	BookingID	PassengerID	FlightID	BookingDate	SeatNumber	FareAmount	BookingStatus
▶	111	211	9090	2025-06-10 10:00:00	15A	75000.00	Confirmed
	222	311	9090	2025-06-12 11:30:00	15B	75000.00	Confirmed
	333	211	6060	2025-06-25 09:00:00	22C	5000.00	Confirmed
	444	411	8080	2025-06-28 14:00:00	10F	4500.00	Confirmed
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

#### B. Select specific data

`SELECT passengerId,bookingdate,seatnumber,bookingstatus from bookings_details;`

	passengerId	bookingdate	seatnumber	bookingstatus
▶	211	2025-06-10 10:00:00	15A	Confirmed
	311	2025-06-12 11:30:00	15B	Confirmed
	211	2025-06-25 09:00:00	22C	Confirmed
	411	2025-06-28 14:00:00	10F	Confirmed

#### C. Select query with changing Column name

`SELECT manufacturer as ManufacturerCompany from aircrafts;`

	ManufacturerCompany
▶	Airbus
	Boeing
	Airbus
	Boeing

- **Order By**

- A. List of all aircraft in ascending order by capacity**

`SELECT * from aircrafts ORDER BY capacity;`

	AircraftID	AircraftModel	Manufacturer	Capacity	RangeMiles
▶	88	Airbus A320neo	Airbus	186	3500
	99	Boeing 737-800	Boeing	189	3100
	77	Boeing 777-300ER	Boeing	396	7370
	66	Airbus A380	Airbus	853	8000
*	NULL	NULL	NULL	NULL	NULL

- B. List of booking details in descending order by fare amount**

`SELECT * from bookings_details ORDER BY fareamount DESC;`

	BookingID	PassengerID	FlightID	BookingDate	SeatNumber	FareAmount	BookingStatus
▶	111	211	9090	2025-06-10 10:00:00	15A	75000.00	Confirmed
	222	311	9090	2025-06-12 11:30:00	15B	75000.00	Confirmed
	333	211	6060	2025-06-25 09:00:00	22C	5000.00	Confirmed
	444	411	8080	2025-06-28 14:00:00	10F	4500.00	Confirmed
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- **Limit Query**

- A. Display first 5 Passengers Details**

`SELECT * from passengers_details ORDER BY passengerid LIMIT 5;`

	PassengerID	FirstName	LastName	EmailId	Phone
▶	211	Jonathan	Trott	alice.smith@example.com	9876543210
	311	Bob	Johnson	bob.j@example.com	8765432109
	411	Charlie	Brown	charlie.b@example.com	7654321098
	512	Johnson	Bread	johnsonbread@example.com	7485968486
	611	Mike	Hussey	mikehussey@example.com	7859426235
*	NULL	NULL	NULL	NULL	NULL

- **Distinct Query**

**A) Display unique status from flights**

`SELECT DISTINCT status from flights;`

	status
▶	Scheduled
	Arrived

- **Where Clause**

**A) With Comparison Operator**

**Find Passenger Id who were booking date before 27/06/2025**

`SELECT * from bookings_details WHERE bookingdate < "2025-06-27 09:00:00";`

	BookingID	PassengerID	FlightID	BookingDate	SeatNumber	FareAmount	BookingStatus
▶	111	211	9090	2025-06-10 10:00:00	15A	75000.00	Confirmed
	222	311	9090	2025-06-12 11:30:00	15B	75000.00	Confirmed
	333	211	6060	2025-06-25 09:00:00	22C	5000.00	Confirmed
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

**B) With Logical Operator**

- **Using AND Operator**

**Display aircrafts where capacity greater than 150 and manufacturer**

**Is Airbus**

`SELECT * from aircrafts WHERE Capacity >150 AND Manufacturer="Airbus"`

	AircraftID	AircraftModel	Manufacturer	Capacity	RangeMiles
▶	66	Airbus A380	Airbus	853	8000
	88	Airbus A320neo	Airbus	186	3500
*	NULL	NULL	NULL	NULL	NULL

- **Using AND/OR Operator**

**Display aircrafts where range miles greater than 3000 and manufacturer either Airbus And Boing**

`SELECT * from aircrafts`

`WHERE rangemiles >3000 AND Manufacturer="Airbus" OR manufacturer="Boing";`

	AircraftID	AircraftModel	Manufacturer	Capacity	RangeMiles
▶	66	Airbus A380	Airbus	853	8000
	88	Airbus A320neo	Airbus	186	3500
✱	NULL	NULL	NULL	NULL	NULL

- **Using NOT Operator**

**Display airort code,airport name , country where not airport id 2**

`SELECT airportId,AirportCode,AirportName,Country from Airport_terminal`

`WHERE NOT airportId = 2;`

	airportId	AirportCode	AirportName	Country
▶	1	BOM	Chhatrapati Shivaji Maharaj International Airport	India
	3	JFK	John F. Kennedy International Airport	USA
	4	LHR	Heathrow Airport	UK
	5	DXB	Dubai International Airport	UAE

- **Using Between Operator**

**Display aircraft range between 4000 and 9000**

`SELECT * from aircrafts where rangemiles BETWEEN 4000 and 9000;`

	AircraftID	AircraftModel	Manufacturer	Capacity	RangeMiles
▶	66	Airbus A380	Airbus	853	8000
	77	Boeing 777-300ER	Boeing	396	7370
✱	NULL	NULL	NULL	NULL	NULL

- **Using IN Operator**

**Display flights where status are Arrived or Scheduled where airline id are 101,201,301**

**SELECT** airlineid,FlightNumber,ArrivalAirportId,ScheduledArrival,ActualArrival,  
status from flights **WHERE** status **IN** ('Arrived','scheduled') **AND** airlineid **IN** (101,301);

	airlineid	FlightNumber	ArrivalAirportId	ScheduledArrival	ActualArrival	status
▶	101	AI201	2	2025-07-02 09:30:00	NULL	Scheduled
	101	AI101	3	2025-07-01 14:30:00	2025-07-01 14:25:00	Arrived
	301	UA007	4	2025-07-02 06:00:00	NULL	Scheduled

- **Using ANY Operator**

**Find PassengerId, Booking Date,Fare Amount having fare amount higher than any booking fare amouny less than 3000**

**SELECT** passengerid,bookingdate,fareamount from bookings\_details

**WHERE** fareamount > **ANY**(select fareamount from bookings\_details where fareamount >3000;

	passengerid	bookingdate	fareamount
▶	211	2025-06-10 10:00:00	75000.00
	311	2025-06-12 11:30:00	75000.00
	211	2025-06-25 09:00:00	5000.00

- **Using All Operator**

**Find Aircraft Id rangemile less than all rangemile of aircraft where manufacture is Airbus**

**SELECT** aircraftid,manufacturer,rangemiles from aircrafts **WHERE**

Rangemiles< **ALL** (select Rangemiles from aircrafts where manufacturer="Airbus");

	aircraftid	manufacturer	rangemiles
▶	99	Boeing	3100



- **AGREEGATE FUNCTION**

**A) Count Function**

**Find total number of passenger travelled**

**SELECT COUNT (\*)** as Total\_Number\_Of\_Pasengers from passengers\_details;

	Total_Number_Of_Pasengers
▶	9

**B) Average Function With Round Function**

**Find average fare amount of all passengers with 2 decimal places**

**SELECT ROUND (AVG (fareamount),2)** as Average\_Fare\_Amount  
from bookings\_details;

	Average_Fare_Amount
▶	39875.00

**C) Sum Function**

**Disaplay total fare amount paid by passengers to travel**

**SELECT SUM(fareamount)** as Total\_Collected\_Fare\_Amount from bookings\_details;

	Total_Collected_Fare_Amount
▶	159500.00

**D) Max And Min Function**

**Find Highest And Lowest fare amount**

**SELECT MAX(fareamount)**as Highest\_Fare,**MIN(fareamount)** as Lowest\_Fare from  
bookings\_details;

	Highest_Fare	Lowest_Fare
▶	75000.00	4500.00

- **Group By Clause**

- A) To display total capacity of each Aircraft**

`SELECT AircraftId,AircraftModel,Capacity as Total_Capacity from aircrafts GROUP BY Aircraftid;`

	AircraftId	AircraftModel	Total_Capacity
▶	66	Airbus A380	853
	77	Boeing 777-300ER	396
	88	Airbus A320neo	186
	99	Boeing 737-800	189

- B) Count how many flights are “Arrived” or “Scheduled”**

`SELECT Status,count(flightid) as Count_Of_Flights from flights GROUP BY status;`

	Status	Count_Of_Flights
▶	Scheduled	3
	Arrived	2

- **Having Clause**

- A) Find Aircraft id with capacity exceeding 200**

`SELECT Aircraftid,AircraftModel,Capacity from aircrafts GROUP BY Aircraftid HAVING Capacity >200;`

	Aircraftid	AircraftModel	Capacity
▶	66	Airbus A380	853
	77	Boeing 777-300ER	396

- **Like Operator**

- A) Find Airport Name whose names “International” word in it**

**SELECT** AirportName from airport\_terminal where AirportName **LIKE** "%International%";

	AirportName
▶	Chhatrapati Shivaji Maharaj International Airport
	Indira Gandhi International Airport
	John F. Kennedy International Airport
	Dubai International Airport

- B) Find First name of passenger whose name start with “J”**

**SELECT** FirstName from passengers\_details where FirstName **LIKE** "J%";

	FirstName
▶	Jonathan
	Johnson
	Jacob
	Jimmy

- **Union All**

- A) Union All Departure And Arrival Airport Id**

**SELECT** DepartureAirportId as AirportCode,'Departure' as Role,FlightNumber from flights  
**UNION ALL SELECT** ArrivalAirportId as AirportCode,'Arrival' as Role,FlightNumber from flights;

	AirportCode	Role	FlightNumber
▶	1	Departure	6E405
	1	Departure	AI201
	3	Departure	UA007
	2	Departure	6E203
	1	Departure	AI101
	5	Arrival	6E405
	2	Arrival	AI201
	4	Arrival	UA007
	1	Arrival	6E203
	3	Arrival	AI101

- **Types Of Joins**

- A) Get the airline name for each flight**

```
SELECT F.FlightNumber, A.AirlineName, F.ScheduledDeparture
FROM Flights as F INNER JOIN Airlines as A
ON F.AirlineId=A.Airlineid;
```

	FlightNumber	AirlineName	ScheduledDeparture
▶	AI201	Air India	2025-07-02 07:30:00
	AI101	Air India	2025-07-01 08:00:00
	6E405	IndiGo	2025-07-02 14:00:00
	6E203	IndiGo	2025-07-01 10:00:00
	UA007	United Airlines	2025-07-01 18:00:00

- B) Show all aircrafts and the flights they are schedule for**

```
SELECT AC.AircraftModel,AC.Manufacturer,F.FlightNumber,F.ScheduledDeparture
FROM Aircrafts as AC LEFT JOIN Flights as F
ON AC.Aircraftid=F.Aircraftid;
```

	AircraftModel	Manufacturer	FlightNumber	ScheduledDeparture
▶	Airbus A380	Airbus	NULL	NULL
	Boeing 777-300ER	Boeing	AI101	2025-07-01 08:00:00
	Boeing 777-300ER	Boeing	UA007	2025-07-01 18:00:00
	Airbus A320neo	Airbus	6E203	2025-07-01 10:00:00
	Airbus A320neo	Airbus	6E405	2025-07-02 14:00:00
	Boeing 737-800	Boeing	AI201	2025-07-02 07:30:00

**C) List all bookings details where first and last name accordingly.**

```
SELECT BD.BookingId,PI.FirstName,PI.LastName,BD.BookingDate,BD.SeatNumber
FROM Bookings_Details as BD INNER JOIN Passengers_details as PI
ON BD.PassengerID= PI.PassengerId;
```

	BookingId	FirstName	LastName	BookingDate	SeatNumber
▶	111	Jonathan	Trott	2025-06-10 10:00:00	15A
	222	Bob	Johnson	2025-06-12 11:30:00	15B
	333	Jonathan	Trott	2025-06-25 09:00:00	22C
	444	Charlie	Brown	2025-06-28 14:00:00	10F

- **Subqueries**

- **Scaler Subquery**

**A) Get the flight number, Scheduled Departure, and total number of bookings for each flight**

```
SELECT F.FlightNumber,F.ScheduledDeparture,(selectcount(BD.BookingId)
FROM Bookings_Details as BD
WHERE BD.FlightId= F.FlightId) As TotalBookings From Flights as F;
```

	FlightNumber	ScheduledDeparture	TotalBookings
▶	6E405	2025-07-02 14:00:00	0
	AI201	2025-07-02 07:30:00	1
	UA007	2025-07-01 18:00:00	0
	6E203	2025-07-01 10:00:00	1
	AI101	2025-07-01 08:00:00	2

➤ **Row Subquery ( Single row with multiple columns)**

**B) Find flights that have the same departure airport and arrival airport as a specific flight**

```
SELECT F.FlightNumber,F.DepartureAirportId,F.ArrivalAirportId From Flights As F
Where (F.DepartureAirportId,F.ArrivalAirportId) = (select DepartureAirportId,
ArrivalAirportId from flights where FlightId=7070);
```

	FlightNumber	DepartureAirportId	ArrivalAirportId
▶	UA007	3	4

➤ **Column Subquery (Single column with multiple rows)**

**C) Find passengers who have booked flights departing from Mumbai**

```
SELECT PI.FirstName,PI.LastName,Pi.EmailID from Passengers_Details as PI
WHERE PI.PassengerId in (SELECT BD.PassengerId from Bookings_Details as BD
INNER JOIN Flights as F on BD. FlightId=F.FlightId INNER JOIN Airport_Terminal as
AT on F.DepartureAirportId=AT.AirportId where AT.City="Mumbai");
```

	FlightNumber	DepartureAirportId	ArrivalAirportId
▶	UA007	3	4

- **Views**

**A) Create View Passenger Contact View**

```
CREATE VIEW Passenger_Contact_View as
SELECT PassengerID,FirstName,LastName,EmailID,Phone FROM Passengers_Details;

SELECT * from Passenger_Contact_View;
```

	PassengerID	FirstName	LastName	EmailID	Phone
▶	211	Jonathan	Trott	alice.smith@example.com	9876543210
	311	Bob	Johnson	bob.j@example.com	8765432109
	411	Charlie	Brown	charlie.b@example.com	7654321098
	512	Johnson	Bread	johnsonbread@example.com	7485968486
	611	Mike	Hussey	mikehussey@example.com	7859426235
	616	Kevin	Piterson	kevinpiterson@example.com	8899578486

**B) Create View Airline Contact View**

```
CREATE VIEW Airline_Contact_View as
SELECT AirlineID,AirlineCode,AirlineName,ContactEmail,ContactPhone
FROM Airlines;

SELECT * from Airline_Contact_View;
```

	AirlineID	AirlineCode	AirlineName	ContactEmail	ContactPhone
▶	101	AI	Air India	contact@airindia.in	+911123456789
	201	6E	IndiGo	support@goindigo.in	+919876543210
	301	UA	United Airlines	customercare@united.com	+18008648331