

```
CREATE DATABASE Air_Ticket_DB;
USE Air_Ticket_DB;
CREATE TABLE air_passenger_profile (
    PROFILE_ID INT IDENTITY(1,1) PRIMARY KEY,
    PASSWORD VARCHAR(10),
    FIRST_NAME VARCHAR(10),
    LAST_NAME VARCHAR(10),
    ADDRESS VARCHAR(100),
    MOBILE_NUMBER BIGINT,
    EMAIL_ID VARCHAR(30)
);

```

```
CREATE TABLE air_flight (
    FLIGHT_ID INT IDENTITY(1,1) PRIMARY KEY,
    AIRLINE_ID VARCHAR(10),
    AIRLINE_NAME VARCHAR(30),
    FROM_LOCATION VARCHAR(20),
    TO_LOCATION VARCHAR(20),
    DEPARTURE_TIME TIME,
    ARRIVAL_TIME TIME,
    DURATION TIME,
    TOTAL_SEATS INT
);

```

```
CREATE TABLE air_flight_details (
    FLIGHT_ID INT,
    FLIGHT_DEPARTURE_DATE DATE,
    PRICE DECIMAL(8,2),
    AVAILABLE_SEATS INT,

```

```
CONSTRAINT FK_flight_details_flight
    FOREIGN KEY (FLIGHT_ID)
    REFERENCES air_flight(FLIGHT_ID)
) ;
```

```
CREATE TABLE air_ticket_info (
    TICKET_ID INT IDENTITY(1,1) PRIMARY KEY,
    PROFILE_ID INT,
    FLIGHT_ID INT,
    FLIGHT_DEPARTURE_DATE DATE,
    STATUS VARCHAR(10),
    CONSTRAINT FK_ticket_profile
        FOREIGN KEY (PROFILE_ID)
        REFERENCES air_passenger_profile(PROFILE_ID),
    CONSTRAINT FK_ticket_flight
        FOREIGN KEY (FLIGHT_ID)
        REFERENCES air_flight(FLIGHT_ID)
) ;
```

```
CREATE TABLE air_credit_card_details (
    PROFILE_ID INT,
    CARD_NUMBER BIGINT,
    CARD_TYPE VARCHAR(10),
    EXPIRATION_MONTH INT,
    EXPIRATION_YEAR INT,
    CONSTRAINT FK_card_profile
        FOREIGN KEY (PROFILE_ID)
        REFERENCES air_passenger_profile(PROFILE_ID)
) ;
```

```
INSERT INTO air_passenger_profile
(PASSWORD, FIRST_NAME, LAST_NAME, ADDRESS, MOBILE_NUMBER, EMAIL_ID)
```

VALUES

```
('mb123', 'Mahesh', 'Babu', 'Hyderabad', 9876543210,  
'mahesh.babu@gmail.com'),  
('rs456', 'Rohit', 'Sharma', 'Mumbai', 9123456789,  
'rohit.sharma@gmail.com'),  
('vk789', 'Virat', 'Kohli', 'Delhi', 9988776655,  
'virat.kohli@gmail.com'),  
('pr321', 'Prabhas', 'Raju', 'Bangalore', 9012345678,  
'prabhas.raju@gmail.com'),  
('as654', 'Anushka', 'Shetty', 'Chennai', 9090909090,  
'anushka.shetty@gmail.com');
```

INSERT INTO air_flight

```
(AIRLINE_ID, AIRLINE_NAME, FROM_LOCATION, TO_LOCATION, DEPARTURE_TIME,  
ARRIVAL_TIME, DURATION, TOTAL_SEATS)
```

VALUES

```
('AI101', 'Air India', 'Hyderabad', 'Delhi', '06:30', '08:45', '02:15',  
180),  
('IG202', 'IndiGo', 'Mumbai', 'Bangalore', '10:00', '11:45', '01:45',  
160),  
('VS303', 'Vistara', 'Delhi', 'Kolkata', '14:15', '16:30', '02:15',  
150),  
('AK404', 'Akasa Air', 'Chennai', 'Hyderabad', '18:00', '19:20',  
'01:20', 140);
```

INSERT INTO air_flight_details

```
(FLIGHT_ID, FLIGHT_DEPARTURE_DATE, PRICE, AVAILABLE_SEATS)
```

VALUES

```
(1, '2025-01-15', 5200.00, 45),  
(1, '2025-01-16', 5500.00, 30),  
(2, '2025-01-15', 4300.00, 60),  
(3, '2025-01-16', 6100.00, 25),  
(4, '2025-01-17', 3900.00, 50);
```

```
INSERT INTO air_ticket_info
(PROFILE_ID, FLIGHT_ID, FLIGHT_DEPARTURE_DATE, STATUS)
VALUES
(1, 1, '2025-01-15', 'BOOKED'),
(2, 2, '2025-01-15', 'BOOKED'),
(3, 3, '2025-01-16', 'CANCELLED'),
(4, 1, '2025-01-16', 'BOOKED'),
(5, 4, '2025-01-17', 'BOOKED');
```

```
INSERT INTO air_credit_card_details
(PROFILE_ID, CARD_NUMBER, CARD_TYPE, EXPIRATION_MONTH, EXPIRATION_YEAR)
VALUES
(1, 4111111111111111, 'VISA', 12, 2027),
(2, 555555555554444, 'MASTER', 10, 2026),
(3, 401288888881881, 'VISA', 08, 2028),
(4, 6011000990139424, 'RUPAY', 09, 2026),
(5, 3530111333300000, 'MASTER', 11, 2027);
```

```
INSERT INTO air_flight
(AIRLINE_ID, AIRLINE_NAME, FROM_LOCATION, TO_LOCATION, DEPARTURE_TIME,
ARRIVAL_TIME, DURATION, TOTAL_SEATS)
VALUES
('ABC01', 'ABC Airlines', 'Chennai', 'Hyderabad', '07:00', '08:30',
'01:30', 150),
('ABC02', 'ABC Airlines', 'Hyderabad', 'Chennai', '09:30', '11:00',
'01:30', 150),
('ABC03', 'ABC Airlines', 'Chennai', 'Delhi', '13:00', '15:45',
'02:45', 180);
```

```
INSERT INTO air_flight_details
(FLIGHT_ID, FLIGHT_DEPARTURE_DATE, PRICE, AVAILABLE_SEATS)
VALUES
```

```
(5, '2025-01-10', 4200, 40),  
(5, '2025-02-10', 4500, 35),  
(5, '2025-03-10', 4800, 30),  
(5, '2025-04-10', 5000, 25),  
  
(6, '2025-02-15', 4300, 45),  
(6, '2025-03-15', 4600, 40),  
(6, '2025-04-15', 4900, 30),  
  
(7, '2025-01-20', 6200, 50),  
(7, '2025-04-20', 6800, 35);
```

```
INSERT INTO air_passenger_profile  
(PASSWORD, FIRST_NAME, LAST_NAME, ADDRESS, MOBILE_NUMBER, EMAIL_ID)  
VALUES  
( 'sk111', 'Sachin', 'Tendulkar', 'Mumbai', 9000011111,  
'sachin@gmail.com'),  
( 'ms222', 'MS', 'Dhoni', 'Ranchi', 9000022222, 'dhoni@gmail.com'),  
( 'kl333', 'KL', 'Rahul', 'Bangalore', 9000033333, 'klrahul@gmail.com');
```

```
INSERT INTO air_ticket_info  
(PROFILE_ID, FLIGHT_ID, FLIGHT_DEPARTURE_DATE, STATUS)  
VALUES  
(1, 5, '2025-01-10', 'BOOKED'),  
(1, 5, '2025-02-10', 'BOOKED'),  
(1, 5, '2025-03-10', 'BOOKED'),  
(2, 5, '2025-01-10', 'BOOKED'),  
(3, 5, '2025-04-10', 'BOOKED'),  
(4, 6, '2025-02-15', 'BOOKED'),
```

```
(4, 6, '2025-03-15', 'BOOKED'),  
(6, 7, '2025-01-20', 'BOOKED'),  
(7, 5, '2025-02-10', 'BOOKED');
```

--1

```
select  
f.FLIGHT_ID, f.FROM_LOCATION, f.TO_LOCATION, DATENAME(MONTH, fd.FLIGHT_DEPARTURE_DATE) AS Month_Name, AVG(fd.PRICE) as Average_Price  
FROM air_flight f  
join air_flight_details fd on f.FLIGHT_ID=fd.FLIGHT_ID  
where f.AIRLINE_NAME='ABC Airlines'  
GROUP BY  
f.FLIGHT_ID, f.FROM_LOCATION, f.TO_LOCATION, DATENAME(MONTH, fd.FLIGHT_DEPARTURE_DATE), MONTH(fd.FLIGHT_DEPARTURE_DATE)  
order by f.FLIGHT_ID, MONTH(fd.FLIGHT_DEPARTURE_DATE)
```

	FLIGHT_ID	FROM_LOCATION	TO_LOCATION	Month_Name	Average_Price
1	5	Chennai	Hyderabad	January	4200.000000
2	5	Chennai	Hyderabad	February	4500.000000
3	5	Chennai	Hyderabad	March	4800.000000
4	5	Chennai	Hyderabad	April	5000.000000
5	6	Hyderabad	Chennai	February	4300.000000
6	6	Hyderabad	Chennai	March	4600.000000
7	6	Hyderabad	Chennai	April	4900.000000
8	7	Chennai	Delhi	January	6200.000000
9	7	Chennai	Delhi	April	6800.000000

--2

```
select pp.PROFILE_ID, pp.FIRST_NAME, pp.ADDRESS, count(ti.TICKET_ID) as No_of_Tickets  
FROM air_passenger_profile pp  
join air_ticket_info ti on pp.PROFILE_ID=ti.PROFILE_ID
```

```

join air_flight f on f.FLIGHT_ID=ti.FLIGHT_ID
where f.AIRLINE_NAME='ABC Airlines'
GROUP BY pp.PROFILE_ID,pp.FIRST_NAME,pp.ADDRESS
having count(ti.TICKET_ID)=(
select min(ticket_count) from (
select count(t2.TICKET_ID) AS ticket_count
from air_ticket_info t2
join air_flight f2
on t2.FLIGHT_ID=f2.FLIGHT_ID
where f2.AIRLINE_NAME='ABC Airlines'
group by t2.PROFILE_ID
)sub
)

```

order by pp.FIRST_NAME ASC;

	PROFILE_ID	FIRST_NAME	ADDRESS	No_of_Tickets
1	7	MS	Ranchi	1
2	2	Rohit	Mumbai	1
3	6	Sachin	Mumbai	1
4	3	Virat	Delhi	1

```

select
f.FROM_LOCATION,f.TO_LOCATION,DATENAME(Month,fd.FLIGHT_DEPARTURE_DATE)
AS MonthName,COUNT(fd.FLIGHT_DEPARTURE_DATE) AS No_of_Services

FROM air_flight f join air_flight_details fd on
f.FLIGHT_ID=fd.FLIGHT_ID

group by
f.FROM_LOCATION,f.TO_LOCATION,DATENAME(Month,fd.FLIGHT_DEPARTURE_DATE)

order by
f.FROM_LOCATION,f.TO_LOCATION,DATENAME(Month,fd.FLIGHT_DEPARTURE_DATE)

```

	FROM_LOCATION	TO_LOCATION	MonthName	No_of_Services
1	Chennai	Delhi	April	1
2	Chennai	Delhi	January	1
3	Chennai	Hyderabad	April	1
4	Chennai	Hyderabad	February	1
5	Chennai	Hyderabad	January	2
6	Chennai	Hyderabad	March	1
7	Delhi	Kolkata	January	1
8	Hyderabad	Chennai	April	1
9	Hyderabad	Chennai	February	1
10	Hyderabad	Chennai	March	1
11	Hyderabad	Delhi	January	2
12	Mumbai	Bangalore	January	1

--4

```
select pp.PROFILE_ID,pp.FIRST_NAME,pp.ADDRESS,count(ti.TICKET_ID) as
No_of_Tickets

FROM air_passenger_profile pp

join air_ticket_info ti on pp.PROFILE_ID=ti.PROFILE_ID

join air_flight f on f.FLIGHT_ID=ti.FLIGHT_ID

where f.AIRLINE_NAME='ABC Airlines'

GROUP BY pp.PROFILE_ID,pp.FIRST_NAME,pp.ADDRESS

having count(ti.TICKET_ID)=

select max(ticket_count) from (
select count(t2.TICKET_ID) AS ticket_count
from air_ticket_info t2
join air_flight f2
on t2.FLIGHT_ID=f2.FLIGHT_ID
where f2.AIRLINE_NAME='ABC Airlines'
group by t2.PROFILE_ID
) sub

)

order by pp.FIRST_NAME ASC;
```

	PROFILE_ID	FIRST_NAME	ADDRESS	No_of_Tickets
1	1	Mahesh	Hyderabad	3

--5

```
select
pp.PROFILE_ID, pp.FIRST_NAME, pp.LAST_NAME, f.FLIGHT_ID, fd.FLIGHT_DEPARTURE_DATE, count(ti.TICKET_ID) as No_of_Tickets
from air_passenger_profile pp join air_ticket_info ti on
pp.PROFILE_ID=ti.PROFILE_ID
join air_flight_details fd on fd.FLIGHT_ID=ti.FLIGHT_ID and
fd.FLIGHT_DEPARTURE_DATE=ti.FLIGHT_DEPARTURE_DATE
join air_flight f on f.FLIGHT_ID=fd.FLIGHT_ID
where f.FROM_LOCATION='Chennai' and f.TO_LOCATION='Hyderabad'
GROUP BY
pp.PROFILE_ID, pp.FIRST_NAME, pp.LAST_NAME, f.FLIGHT_ID, fd.FLIGHT_DEPARTURE_DATE
order by pp.PROFILE_ID, f.FLIGHT_ID, fd.FLIGHT_DEPARTURE_DATE
```

	PROFILE_ID	FIRST_NAME	LAST_NAME	FLIGHT_ID	FLIGHT_DEPARTURE_DATE	No_of_Tickets
1	1	Mahesh	Babu	5	2025-01-10	1
2	1	Mahesh	Babu	5	2025-02-10	1
3	1	Mahesh	Babu	5	2025-03-10	1
4	2	Rohit	Sharma	5	2025-01-10	1
5	3	Virat	Kohli	5	2025-04-10	1
6	5	Anushka	Shetty	4	2025-01-17	1
7	7	MS	Dhoni	5	2025-02-10	1

--6

```
select f.FLIGHT_ID, f.FROM_LOCATION, f.TO_LOCATION, fd.PRICE
from air_flight f
join air_flight_details fd on f.FLIGHT_ID=fd.FLIGHT_ID
where month(fd.FLIGHT_DEPARTURE_DATE)=4
```

	FLIGHT_ID	FROM_LOCATION	TO_LOCATION	PRICE
1	5	Chennai	Hyderabad	5000.00
2	6	Hyderabad	Chennai	4900.00
3	7	Chennai	Delhi	6800.00

--7

```
SELECT f.FLIGHT_ID,f.FROM_LOCATION,f.TO_LOCATION,AVG(fd.PRICE) as
Average_Price
from air_flight f
join air_flight_details fd on f.FLIGHT_ID=fd.FLIGHT_ID
group by f.FLIGHT_ID,f.FROM_LOCATION,f.TO_LOCATION
ORDER BY f.FLIGHT_ID,f.FROM_LOCATION,f.TO_LOCATION
```

	FLIGHT_ID	FROM_LOCATION	TO_LOCATION	Average_Price
1	1	Hyderabad	Delhi	5350.000000
2	2	Mumbai	Bangalore	4300.000000
3	3	Delhi	Kolkata	6100.000000
4	4	Chennai	Hyderabad	3900.000000
5	5	Chennai	Hyderabad	4625.000000
6	6	Hyderabad	Chennai	4600.000000
7	7	Chennai	Delhi	6500.000000

--8

```
select pp.PROFILE_ID,CONCAT(pp.FIRST_NAME, ', ', pp.LAST_NAME) AS Customer_Name,pp.ADDRESS  
FROM air_passenger_profile pp  
join air_ticket_info ti on ti.PROFILE_ID=pp.PROFILE_ID  
join air_flight f on f.FLIGHT_ID=ti.FLIGHT_ID  
where f.FROM_LOCATION='Chennai' and f.TO_LOCATION='Hyderabad'  
group by pp.PROFILE_ID,CONCAT(pp.FIRST_NAME, ', ', pp.LAST_NAME),pp.ADDRESS  
order by pp.PROFILE_ID
```

	PROFILE_ID	Customer_Name	ADDRESS
1	1	Mahesh, Babu	Hyderabad
2	2	Rohit, Sharma	Mumbai
3	3	Virat, Kohli	Delhi
4	5	Anushka, Shetty	Chennai
5	7	MS, Dhoni	Ranchi

--9

```
select pp.PROFILE_ID,count(pp.PROFILE_ID) as MAX_No_of_Tickets  
FROM air_passenger_profile pp  
join air_ticket_info ti on pp.PROFILE_ID=ti.PROFILE_ID  
group by pp.PROFILE_ID  
having count(pp.PROFILE_ID)=(  
select TOP 1 count(*)  
from air_ticket_info  
group by PROFILE_ID  
order by count(*) desc  
)  
order by pp.PROFILE_ID
```

	PROFILE_ID	MAX_No_of_Tickets
1	1	4

--10

```
select f.FLIGHT_ID,f.FROM_LOCATION,f.TO_LOCATION,COUNT(ti.TICKET_ID) AS
No_of_Tickets
from air_flight f join air_ticket_info ti on f.FLIGHT_ID=ti.FLIGHT_ID
where f.AIRLINE_NAME='ABC Airlines'
GROUP BY f.FLIGHT_ID,f.FROM_LOCATION,f.TO_LOCATION

ORDER BY f.FLIGHT_ID
```

	FLIGHT_ID	FROM_LOCATION	TO_LOCATION	No_of_Tickets
1	5	Chennai	Hyderabad	6
2	6	Hyderabad	Chennai	2
3	7	Chennai	Delhi	1