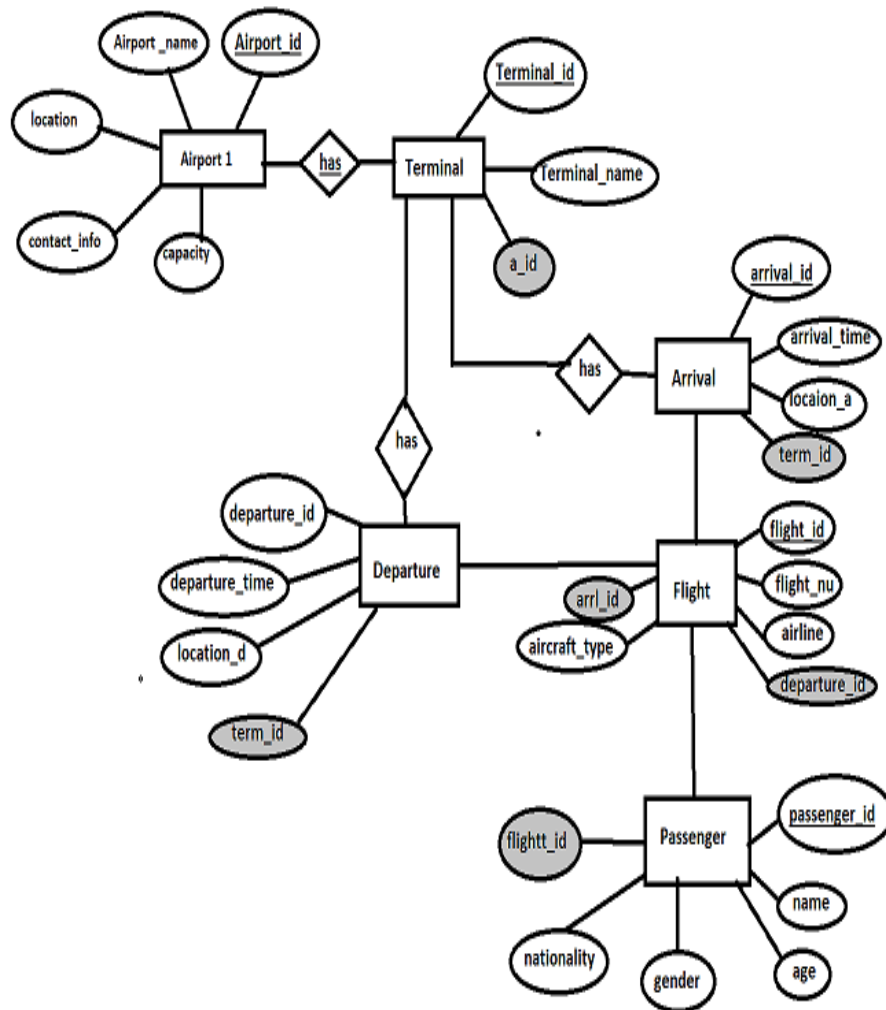


AIRPORT DATABASE MANAGEMENT SYSTEM

INTRODUCTION: -

The airport database is a comprehensive system designed to store and manage information related to airports, flights, passengers, bookings, and other related entities. It serves as a central repository of data to facilitate efficient operations and management within the airport environment. The database typically includes tables representing various entities, such as airports, flights, passengers, bookings, airlines, and more. The airport database facilitates various operations and queries, such as searching for flights based on departure or destination airports, managing passenger bookings, tracking flight statuses, calculating revenue, analyzing passenger demographics, and generating reports for airport management and airline operations.

ER Diagram -



STRUCTURE OF TABLES:-

This table contains the details of all the projects that are completed, going on and will be started in the coming future along with their locations and expected cost.

AIRPORT TABLE:-

This table contains the details of airport that are airport id,airport name,location of airport, its contact information and capacity.

```
MariaDB [(none)]> use airport;
Database changed
MariaDB [airport]> desc airport1;
```

Field	Type	Null	Key	Default	Extra
airport_id	int(11)	NO	PRI	NULL	
airport_name	varchar(20)	YES		NULL	
location	varchar(20)	YES		NULL	
contact_information	bigint(20)	YES	UNI	NULL	
capacity	varchar(10)	YES		NULL	

5 rows in set (0.007 sec)

TERMINAL TABLE:-

This table represents a terminals within the airports. It is associated with Airport entity.

```
MariaDB [airport]> desc terminal;
```

Field	Type	Null	Key	Default	Extra
terminal_id	int(11)	NO	PRI	NULL	
terminal_name	varchar(20)	YES		NULL	
a_id	int(11)	YES	MUL	NULL	

3 rows in set (0.007 sec)

DEPARTURE TABLE:-

This table represents a departure from the airport. It is associated with the Terminal entity.

```
Database changed
MariaDB [airport]> desc departure;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| departure_id | int(11)   | NO   | PRI | NULL    |       |
| departure_time | datetime  | YES  |     | NULL    |       |
| location_d   | varchar(20) | YES  |     | NULL    |       |
| term_id     | int(11)   | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.008 sec)
```

ARRIVAL TABLE: -

This table represents an arrival at the airport. It is associated with the terminals.

```
MariaDB [airport]> desc arrival;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| arrival_id  | int(11)   | NO   | PRI | NULL    |       |
| arrival_time | datetime  | YES  |     | NULL    |       |
| location_a   | varchar(20) | YES  |     | NULL    |       |
| term_id     | int(11)   | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.005 sec)
```

FLIGHT TABLE: -

This table represents the details of flight. It is associated with arrival.

```
MariaDB [airport]> desc flight;
```

Field	Type	Null	Key	Default	Extra
flight_id	int(11)	NO	PRI	NULL	
flight_nu	varchar(20)	YES		NULL	
airline	varchar(20)	YES		NULL	
departure_id	int(11)	YES		NULL	
arrl_id	int(11)	YES	MUL	NULL	
aircraft_type	varchar(20)	YES		NULL	

```
6 rows in set (0.005 sec)
```

PASSENGER TABLE: -

This table represents a passenger details. It is associated with flight.

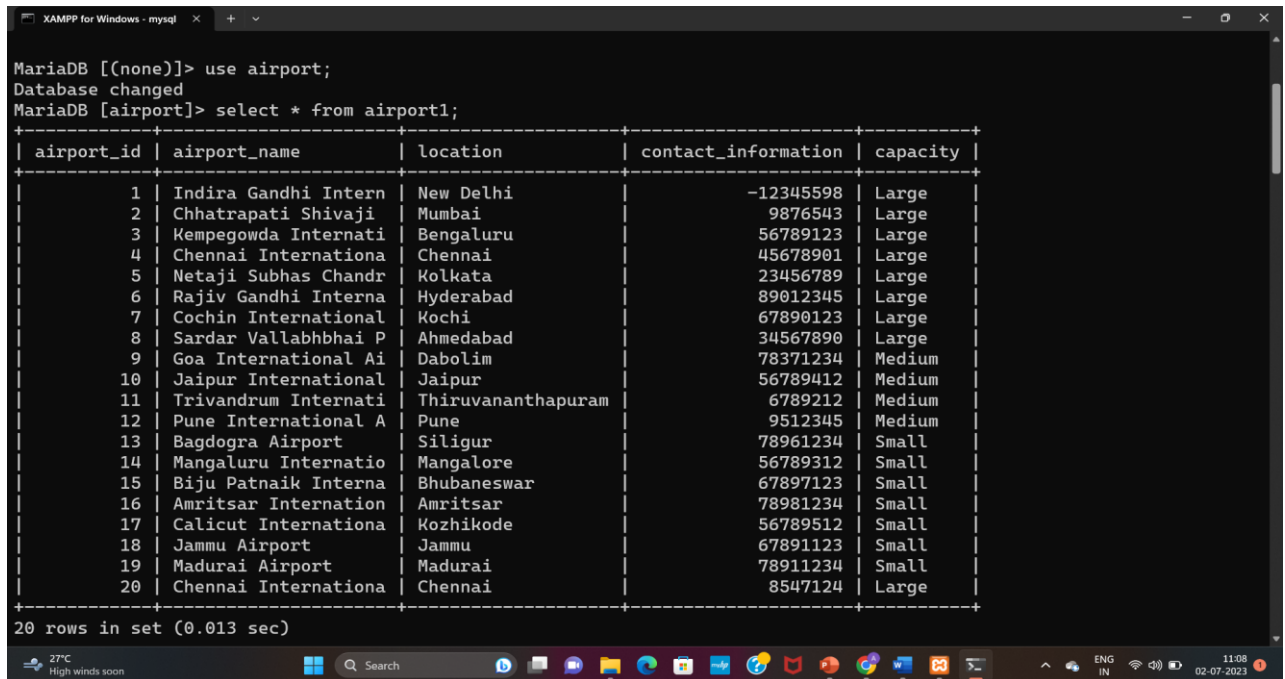
```
MariaDB [airport]> desc passenger;
```

Field	Type	Null	Key	Default	Extra
passenger_id	int(11)	NO	PRI	NULL	
name	varchar(20)	YES		NULL	
age	int(11)	YES		NULL	
gender	varchar(10)	YES		NULL	
Nationality	varchar(20)	YES		NULL	
flightt_id	int(11)	YES	MUL	NULL	

```
6 rows in set (0.007 sec)
```

KEY CONTENTS OF TABLES:-

AIRPORT1: -

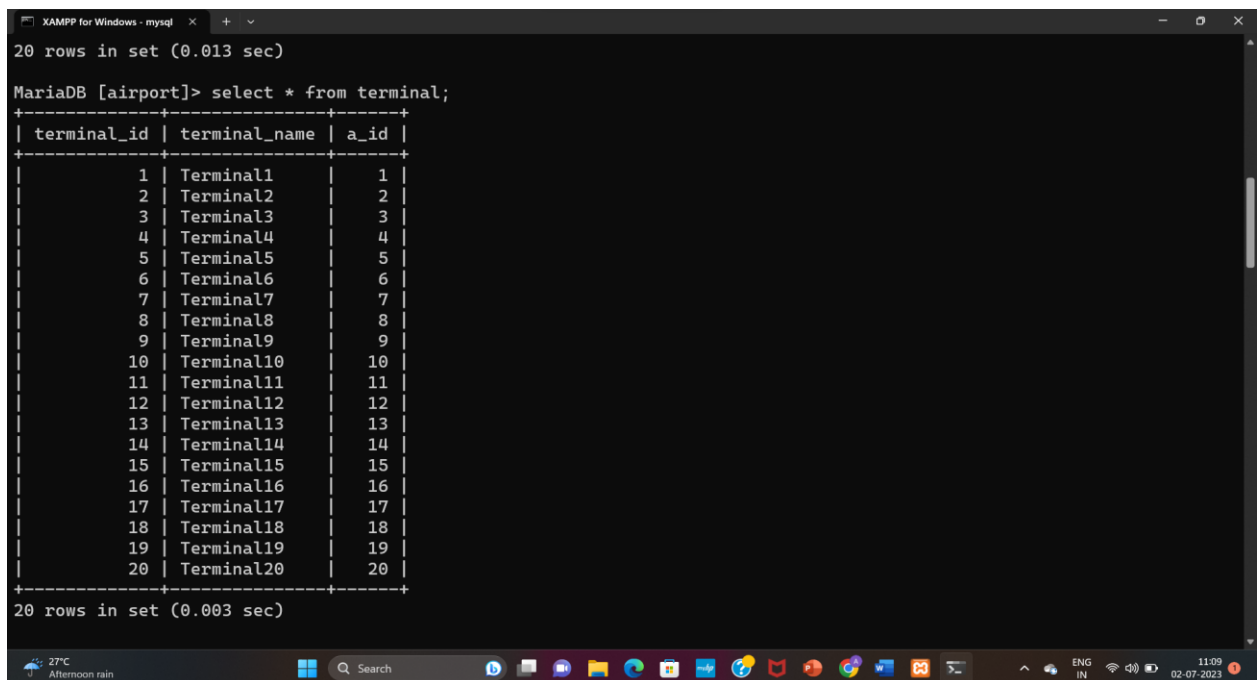


```
MariaDB [(none)]> use airport;
Database changed
MariaDB [airport]> select * from airport1;
```

airport_id	airport_name	location	contact_information	capacity
1	Indira Gandhi Intern	New Delhi	-12345598	Large
2	Chhatrapati Shivaji	Mumbai	9876543	Large
3	Kempegowda Internati	Bengaluru	56789123	Large
4	Chennai Internationa	Chennai	45678901	Large
5	Netaji Subhas Chandr	Kolkata	23456789	Large
6	Rajiv Gandhi Interna	Hyderabad	89012345	Large
7	Cochin International	Kochi	67890123	Large
8	Sardar Vallabhbhai P	Ahmedabad	34567890	Large
9	Goa International Ai	Dabolim	78371234	Medium
10	Jaipur International	Jaipur	56789412	Medium
11	Trivandrum Internati	Thiruvananthapuram	6789212	Medium
12	Pune International A	Pune	9512345	Medium
13	Bagdogra Airport	Siligur	78961234	Small
14	Mangaluru Internatio	Mangalore	56789312	Small
15	Biju Patnaik Interna	Bhubaneswar	67897123	Small
16	Amritsar Internation	Amritsar	78981234	Small
17	Calicut International	Kozhikode	56789512	Small
18	Jammu Airport	Jammu	67891123	Small
19	Madurai Airport	Madurai	78911234	Small
20	Chennai Internationa	Chennai	8547124	Large

20 rows in set (0.013 sec)

TERMINAL: -



```
MariaDB [airport]> select * from terminal;
```

terminal_id	terminal_name	a_id
1	Terminal1	1
2	Terminal2	2
3	Terminal3	3
4	Terminal4	4
5	Terminal5	5
6	Terminal6	6
7	Terminal7	7
8	Terminal8	8
9	Terminal9	9
10	Terminal10	10
11	Terminal11	11
12	Terminal12	12
13	Terminal13	13
14	Terminal14	14
15	Terminal15	15
16	Terminal16	16
17	Terminal17	17
18	Terminal18	18
19	Terminal19	19
20	Terminal20	20

20 rows in set (0.003 sec)

DEPARTURE: -

20 rows in set (0.003 sec)

MariaDB [airport]> select * from departure;

departure_id	departure_time	location_d	term_id
1	2023-06-27 09:00:00	New Delhi	1
2	2023-06-27 10:30:00	Mumbai	2
3	2023-06-27 11:45:00	Bengaluru	3
4	2023-06-27 12:15:00	Chennai	4
5	2023-06-27 13:00:00	Kolkata	5
6	2023-06-27 14:30:00	Hyderabad	6
7	2023-06-27 15:45:00	Kochi	7
8	2023-06-27 16:30:00	Ahmedabad	8
9	2023-06-27 17:15:00	Dabolim	9
10	2023-06-27 18:00:00	Jaipur	10
11	2023-06-28 08:30:00	Thiruvanthapuram	11
12	2023-06-28 10:15:00	Pune	12
13	2023-06-28 11:45:00	Siligur	13
14	2023-06-28 12:30:00	Mangalore	14
15	2023-06-28 13:15:00	Bhubaneshwar	15
16	2023-06-28 14:20:00	Amritsar	16
17	2023-06-28 15:40:00	Kozhikode	17
18	2023-06-28 16:15:00	Jammu	18
19	2023-06-28 09:45:00	Madurai	19
20	2023-06-28 11:00:00	Panjim	20

20 rows in set (0.003 sec)

ARRIVAL: -

20 rows in set (0.003 sec)

MariaDB [airport]> select * from arrival;

arrival_id	arrival_time	location_a	term_id
101	2023-06-27 12:30:00	Chennai	1
102	2023-06-27 13:45:00	Madurai	2
103	2023-06-27 14:30:00	Jammu	3
104	2023-06-27 15:15:00	Kozhikode	4
105	2023-06-27 16:45:00	Amritsar	5
106	2023-06-27 17:30:00	Bhubaneshwar	6
107	2023-06-27 18:15:00	Mangalore	7
108	2023-06-27 19:00:00	Jaipur	8
109	2023-06-27 20:30:00	Thiruvanthapuram	9
110	2023-06-27 23:30:00	Ahmedabad	10
111	2023-06-28 10:45:00	Dabolim	11
112	2023-06-28 12:30:00	Pune	12
113	2023-06-28 13:55:00	Siligur	13
114	2023-06-28 16:15:00	Kochi	14
115	2023-06-28 17:20:00	Hyderabad	15
116	2023-06-28 18:45:00	Kolkatta	16
117	2023-06-28 19:30:00	Chennai	17
118	2023-06-28 11:55:00	Bengaluru	18
119	2023-06-28 13:10:00	Mumbai	19
120	2023-06-28 14:50:00	New Delhi	20

20 rows in set (0.003 sec)

FLIGHT: -

20 rows in set (0.003 sec)

MariaDB [airport]> select * from flight;

flight_id	flight_nu	airline	departure_id	arrl_id	aircraft_type
1	AI101	Air India	1	101	Airbus A320
2	6E503	IndiGo	2	102	Airbus A320
3	SG876	SpiceJet	3	103	Boeing 737
4	G8145	GoAir	4	104	Airbus A320
5	9W205	Jet airways	5	105	Boeing 737
6	UK746	Vistara	6	106	Airbus A320
7	AI310	Air India	7	107	Boeing 777
8	6E202	IndiGo	8	108	AirBus A320
9	SG765	SpiceJet	9	109	Boeing 737
10	G8391	GoAir	10	110	AirBus A320
11	9W409	Jet Airways	11	111	Boeing 737
12	UK622	Vistara	12	112	AirBus A320
13	AI201	Air India	13	113	Boeing 777
14	6E505	IndiGo	14	114	Airbus A320
15	SG876	SpiceJet	15	115	Boeing 737
16	G8153	GoAir	16	116	Airbus A320
17	9W207	Jet Airways	17	117	Boeing 737
18	UK748	Vistara	18	118	Airbus A320
19	AI315	Air India	19	119	Boeing 777
20	6E206	IndiGo	20	120	Airbus A320

20 rows in set (0.003 sec)

PASSENGER: -

20 rows in set (0.003 sec)

MariaDB [airport]> select * from passenger;

passenger_id	name	age	gender	Nationality	flighttt_id
1001	Advait Sharma	24	Male	Indian	1
1002	Rahul Bajaj	30	Male	Indian	2
1003	Namrata Shah	31	Female	Indian	3
1004	Priyanka More	32	Female	Indian	4
1005	Payal Choudhari	26	Female	Indian	5
1006	Advika Javheri	29	Female	Indian	6
1007	Smith Irani	56	Male	Indian	7
1008	Aishwarya Motiwal	21	Female	Indian	8
1009	Savita Bhise	37	Female	Indian	9
1010	Kaustubh Borse	52	Male	Indian	10
1011	Deepali Siyal	26	Female	Indian	11
1012	Vinit Dhindale	34	Male	Indian	12
1013	Mayra Agicha	19	Female	Indian	13
1014	Khushi Kapoor	43	Female	Indian	14
1015	Siddhant Bhnadare	24	Male	Indian	15
1016	Riya Singh	24	Female	Indian	16
1017	Supriya Marathe	24	Female	Indian	17
1018	Sagar Johari	24	Male	Indian	18
1019	Vedant Bhide	24	Male	Indian	19
1020	Advik Bharti	24	Male	Indian	20

20 rows in set (0.003 sec)

SUBQUERIES: -

1. Display the passenger details who travelled from Aircraft type 'Airbus 320'.

```
MariaDB [airport]> select * from passenger where flighttt_id in(select flight_id from flight where aircraft_type='Airbus A320');
```

passenger_id	name	age	gender	Nationality	flighttt_id
1001	Advait Sharma	24	Male	Indian	1
1002	Rahul Bajaj	30	Male	Indian	2
1004	Priyanka More	32	Female	Indian	4
1006	Advika Javheri	29	Female	Indian	6
1008	Aishwarya Motiwal	21	Female	Indian	8
1010	Kaustubh Borse	52	Male	Indian	10
1012	Vinit Dhindale	34	Male	Indian	12
1014	Khushi Kapoor	43	Female	Indian	14
1016	Riya Singh	24	Female	Indian	16
1018	Sagar Johari	24	Male	Indian	18
1020	Advik Bharti	24	Male	Indian	20

11 rows in set (0.001 sec)

2. Display the departure details where the airport capacity is 'Large'.

```
MariaDB [airport]> select * from departure where term_id in(select terminal_id from terminal where a_id in(select airport_id from airport1 where capacity='Large'));
```

departure_id	departure_time	location_d	term_id
1	2023-06-27 09:00:00	New Delhi	1
2	2023-06-27 10:30:00	Mumbai	2
3	2023-06-27 11:45:00	Bengaluru	3
4	2023-06-27 12:15:00	Chennai	4
5	2023-06-27 13:00:00	Kolkata	5
6	2023-06-27 14:30:00	Hyderabad	6
7	2023-06-27 15:45:00	Kochi	7
8	2023-06-27 16:30:00	Ahmedabad	8
20	2023-06-28 11:00:00	Panjin	20

9 rows in set (0.001 sec)

3. Display the arrival details of passenger whose gender is female.

```
MariaDB [airport]> select * from arrival where arrival_id in(select arrl_id from flight where flight_id in(select flighttt_id from passenger where gender='Female'));
```

arrival_id	arrival_time	location_a	term_id
103	2023-06-27 14:30:00	Jammu	3
104	2023-06-27 15:15:00	Kozhikode	4
105	2023-06-27 16:45:00	Amritsar	5
106	2023-06-27 17:30:00	Bhubaneswar	6
108	2023-06-27 19:00:00	Jaipur	8
109	2023-06-27 20:30:00	Thiruvanthapuram	9
111	2023-06-28 10:45:00	Dabolim	11
113	2023-06-28 13:55:00	Siligur	13
114	2023-06-28 16:15:00	Kochi	14
116	2023-06-28 18:45:00	Kolkatta	16
117	2023-06-28 19:30:00	Chennai	17

11 rows in set (0.002 sec)

4. Display the flight details of passenger whose age ≤24.

```
MariaDB [airport]> select * from flight where flight_id in(select flight_id from passenger where age<=24);
```

flight_id	flight_nu	airline	departure_id	arrl_id	aircraft_type
1	AI101	Air India	1	101	Airbus A320
8	6E202	IndiGo	8	108	AirBus A320
13	AI201	Air India	13	113	Boeing 777
15	SG876	SpiceJet	15	115	Boeing 737
16	G8153	GoAir	16	116	Airbus A320
17	9W207	Jet Airways	17	117	Boeing 737
18	UK748	Vistara	18	118	Airbus A320
19	AI315	Air India	19	119	Boeing 777
20	6E206	IndiGo	20	120	Airbus A320

9 rows in set (0.001 sec)

Inner Join Query:-

```
XAMPP for Windows - mysql
MariaDB [airport]> select airport1.airport_name,terminal.terminal_name,airport1.location from airport1 inner join terminal on airport1.airport_id=terminal.a_id;
```

airport_name	terminal_name	location
Indira Gandhi Intern	Terminal1	New Delhi
Chhatrapati Shivaji	Terminal2	Mumbai
Kempegowda Internati	Terminal3	Bengaluru
Chennai International	Terminal4	Chennai
Netaji Subhas Chandr	Terminal5	Kolkata
Rajiv Gandhi Interna	Terminal6	Hyderabad
Cochin International	Terminal7	Kochi
Sardar Vallabhbhai P	Terminal8	Ahmedabad
Goa International Ai	Terminal9	Dabolim
Jaipur International	Terminal10	Jaipur
Trivandrum Internati	Terminal11	Thiruvananthapuram
Pune International A	Terminal12	Pune
Bagdogra Airport	Terminal13	Siligur
Mangaluru Internatio	Terminal14	Mangalore
Biju Patnaik Interna	Terminal15	Bhubaneswar
Amritsar International	Terminal16	Amritsar
Calicut International	Terminal17	Kozhikode
Jammu Airport	Terminal18	Jammu
Madurai Airport	Terminal19	Madurai
Chennai International	Terminal20	Chennai

20 rows in set (0.010 sec)

Left join query: -

```
XAMPP for Windows - mysql
20 rows in set (0.001 sec)
MariaDB [airport]> select flight.flight_nu,passenger.name,flight.airline from flight left join passenger on flight.flight_id=passenger.flight_id;
```

flight_nu	name	airline
AI101	Advait Sharma	Air India
6E503	Rahul Bajaj	IndiGo
SG876	Namrata Shah	Spicejet
G8145	Priyanka More	GoAir
9W205	Payal Choudhari	Jet airways
UK746	Advika Javheri	Vistara
AI310	Smith Irani	Air India
6E202	Aishwarya Motiwal	IndiGo
SG765	Savita Bhise	SpiceJet
G8391	Kaustubh Borse	GoAir
9W409	Deepali Siyal	Jet Airways
UK622	Vinit Dhindale	Vistara
AI201	Mayra Agicha	Air India
6E505	Khushi Kapoor	IndiGo
SG876	Siddhant Bhnadare	SpiceJet
G8153	Riya Singh	GoAir
9W207	Supriya Marathe	Jet Airways
UK748	Sagar Johari	Vistara
AI315	Vedant Bhide	Air India
6E206	Advik Bharti	IndiGo

20 rows in set (0.003 sec)

