SVKM's NMIMS
School of Technology Management & Engineering
A.Y. 2023 - 24
Course: Database Management Systems

Project Report

Program	BTECH AIDS	
Semester	SEM-IV	
Name of the Project:	AIRLINE RESERVATION SYSTEM	
Details of Project Members		
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Project Report

Airline Reservation System

By

A020, A024, A034 , A037

Course: DBMS

AY: 2023-24

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1) Storyline

An airline reservation system is the backbone of modern travel, facilitating seamless booking, itinerary management, and flight tracking. It must provide user-friendly interfaces, robust security measures, real-time data synchronization, and seamless integration with third-party services to ensure a convenient and reliable travel experience for passengers and airlines.

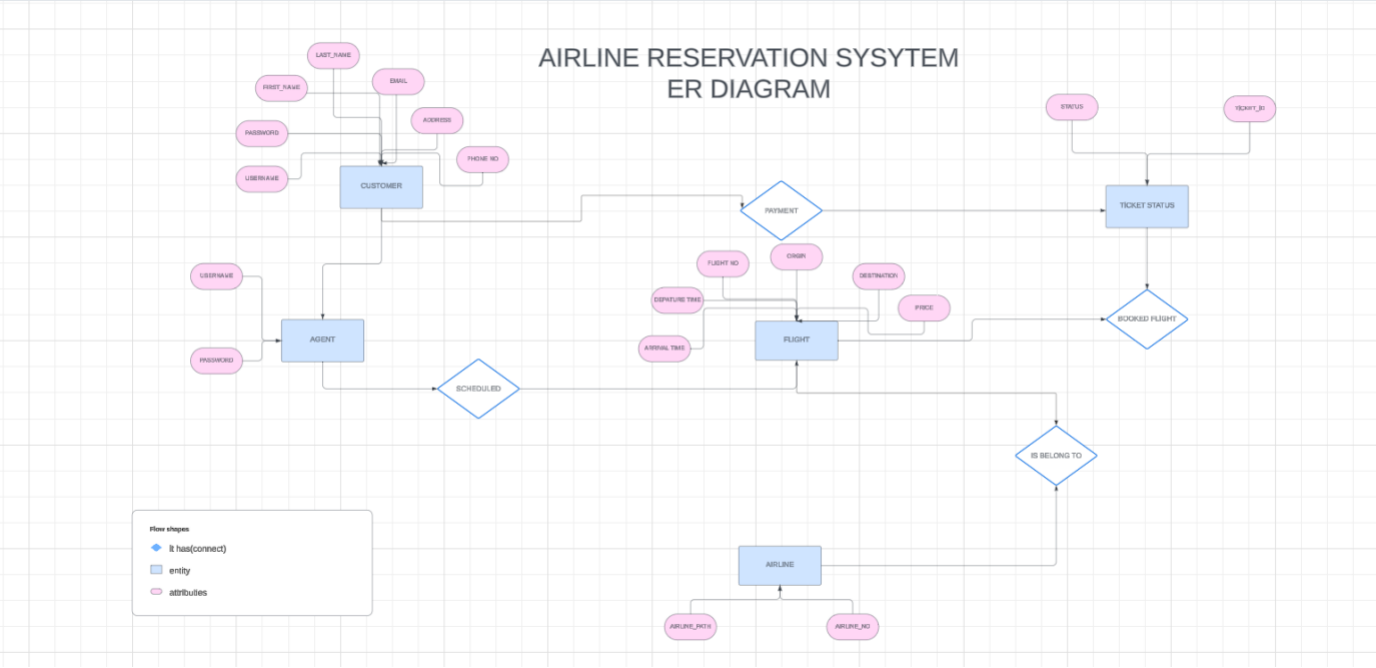
2) Components of Database Design

Relationships involve Customers booking Tickets (1:N), Flights having multiple Tickets (1:N), Tickets being associated with Customers (N:1) and Flights (N:1), and Admins logging Flights (1:N). Mandatory participation exists for Customers-Flights and Admins-Flights relationships.

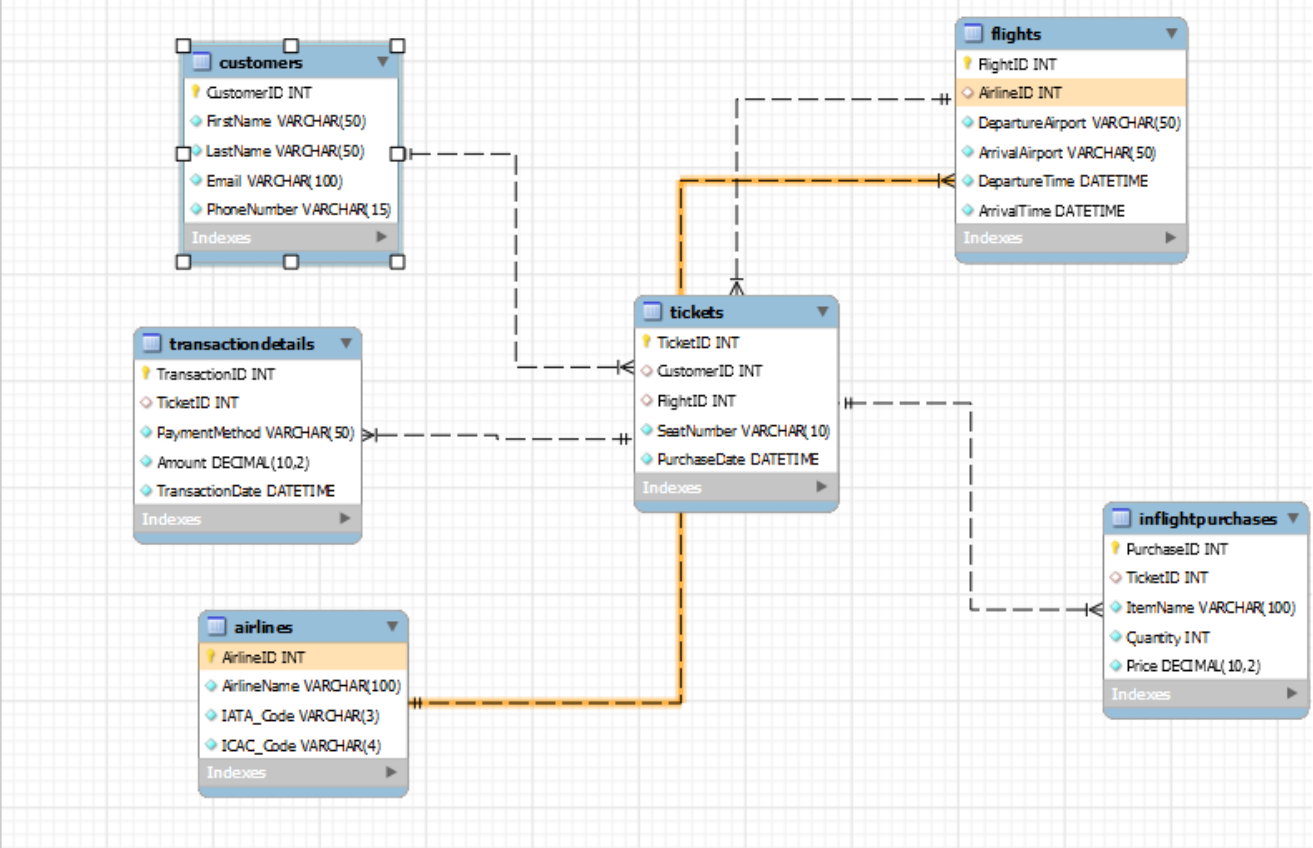
Entities	Attributes
Customer	Customer_id Username First_Name Last_Name Email Address Phone_number
Tickets	Ticket id Customer id Filght id Seatnumber Purchase date
Flights	Flight_no Origin Destination Depature_time Arrival_time Price
Transaction details	Transaction details id Ticket id Payment method Amount transactiondate

Inflightpurchases	Purchase id Ticket id
Airlines	Airline id Airline name

3) Entity Relationship Diagram



4) Relational Model



5) Normalization

1. First Normal Form (1NF)
Each table has a primary key: All tables (Customers, Airlines, Flights, Tickets, InFlightPurchases, TransactionDetails) have a primary key defined.
No repeating groups or arrays: The schema does not include any repeating groups or arrays, which are not supported in relational databases.
Each column contains atomic (indivisible) values: All columns contain atomic values, ensuring that each cell in the table contains a single value.
2. Second Normal Form (2NF)
All non-key attributes are fully functionally dependent on the primary key: In all tables, non-key attributes are dependent on the primary key. For example, in the Tickets table, SeatNumber, PurchaseDate, and other attributes are dependent on TicketID.
3. Third Normal Form (3NF)
No transitive dependencies of non-key attributes on the primary key: The schema does not have any transitive dependencies. Each non-key attribute is directly dependent on the primary key, and there are no indirect dependencies through other non-key attributes.
Boyce-Codd Normal Form (BCNF)
Every determinant is a candidate key: In all tables, every determinant (the set of attributes that determine a non-key attribute) is a candidate key. For example, in the InFlightPurchases table, TicketID determines ItemName, Quantity, and Price, and TicketID is a candidate key.
No non-trivial functional dependencies that violate BCNF: The schema does not have any non-trivial functional dependencies that violate BCNF.

6) SQL Queries

Q1)

```
160
161 •  SELECT * FROM customer WHERE last_name = 'Doe';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user1	pass1	John	Doe	user1@example.com	123 Main St	555-123-4567
user2	pass2	Jane	Doe	user2@example.com	456 Main St	555-123-4568

Q2)

```
162 •  SELECT * FROM customer WHERE email LIKE '%example.com';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user1	pass1	John	Doe	user1@example.com	123 Main St	555-123-4567
user2	pass2	Jane	Doe	user2@example.com	456 Main St	555-123-4568
user3	pass3	Jim	Brown	user3@example.com	789 Main St	555-123-4569
user4	pass4	Jack	Black	user4@example.com	321 Main St	555-123-4560
user5	pass5	Ann	Green	user5@example.com	654 Main St	555-123-4561
user6	pass6	Bob	White	user6@example.com	987 Main St	555-123-4562
user7	pass7	Pam	Gray	user7@example.com	234 Main St	555-123-4563
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user10	pass10	Sam	Davis	user10@example.com	135 Main St	555-123-4566
user11	pass11	Kim	Miller	user11@example.com	345 Main St	555-123-4567
user12	pass12	Bob	Thomas	user12@example.com	567 Main St	555-123-4568
user13	pass13	Sue	Wilson	user13@example.com	777 Main St	555-123-4569

customer 6

Q3)

```
163 •  SELECT * FROM customer WHERE first name LIKE 'J%' AND last name LIKE 'T%';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user15	pass15	Jan	Taylor	user15@example.com	111 Main St	555-123-4561
user17	pass17	Joan	Thomas	user17@example.com	333 Main St	555-123-4563

Q4)

```
164 •  SELECT * FROM customer WHERE phone_number LIKE '555-%';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user1	pass1	John	Doe	user1@example.com	123 Main St	555-123-4567
user2	pass2	Jane	Doe	user2@example.com	456 Main St	555-123-4568
user3	pass3	Jim	Brown	user3@example.com	789 Main St	555-123-4569
user4	pass4	Jack	Black	user4@example.com	321 Main St	555-123-4560
user5	pass5	Ann	Green	user5@example.com	654 Main St	555-123-4561
user6	pass6	Bob	White	user6@example.com	987 Main St	555-123-4562
user7	pass7	Pam	Gray	user7@example.com	234 Main St	555-123-4563
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user10	pass10	Sam	Davis	user10@example.com	135 Main St	555-123-4566
user11	pass11	Kim	Miller	user11@example.com	345 Main St	555-123-4567
user12	pass12	Bob	Thomas	user12@example.com	567 Main St	555-123-4568

customer 1

Q5)

```
166 •  SELECT * FROM customer ORDER BY last_name;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user16	pass16	Kim	Anderson	user16@example.com	222 Main St	555-123-4562
user4	pass4	Jack	Black	user4@example.com	321 Main St	555-123-4560
user3	pass3	Jim	Brown	user3@example.com	789 Main St	555-123-4569
user10	pass10	Sam	Davis	user10@example.com	135 Main St	555-123-4566
user1	pass1	John	Doe	user1@example.com	123 Main St	555-123-4567
user2	pass2	Jane	Doe	user2@example.com	456 Main St	555-123-4568
user7	pass7	Pam	Gray	user7@example.com	234 Main St	555-123-4563
user5	pass5	Ann	Green	user5@example.com	654 Main St	555-123-4561
user18	pass18	Steve	Johnson	user18@example.com	444 Main St	555-123-4564
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user11	pass11	Kim	Miller	user11@example.com	345 Main St	555-123-4567
user14	pass14	Tom	Moore	user14@example.com	999 Main St	555-123-4560
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564

customer 2

Q6)

```
167 •  SELECT * FROM customer ORDER BY last_name DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user17	pass17	Joan	Thomas	user17@example.com	333 Main St	555-123-4563
user15	pass15	Jan	Taylor	user15@example.com	111 Main St	555-123-4561
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user8	pass8	Mary	Smith	user8@example.com	543 Main St	555-123-4564
user14	pass14	Tom	Moore	user14@example.com	999 Main St	555-123-4560
user11	pass11	Kim	Miller	user11@example.com	345 Main St	555-123-4567
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user9	pass9	Tim	Jones	user9@example.com	888 Main St	555-123-4565
user18	pass18	Steve	Johnson	user18@example.com	444 Main St	555-123-4564
user5	pass5	Ann	Green	user5@example.com	654 Main St	555-123-4561
user7	pass7	Pam	Gray	user7@example.com	234 Main St	555-123-4563
user1	pass1	John	Doe	user1@example.com	123 Main St	555-123-4567
user2	pass2	Jane	Doe	user2@example.com	456 Main St	555-123-4568
user10	pass10	Sam	Davis	user10@example.com	135 Main St	555-123-4566
user3	pass3	Jim	Brown	user3@example.com	789 Main St	555-123-4569

customer 1

Output

Action Output

#	Time	Action	Message
1	15:45:12	SELECT * FROM customer ORDER BY last_name DESC LIMIT 0, 1000	20 row(s) returned

Q7)

```
168 •  SELECT COUNT(*) FROM customer;
```

Result Grid | Filter Rows: | Export: | Wrap Cell

COUNT(*)
20

Q8)

```
169 •  SELECT * FROM customer WHERE first_name IN ("Bob", "Ann");
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username	password	first_name	last_name	email	address	phone_number
user5	pass5	Ann	Green	user5@example.com	654 Main St	555-123-4561
user6	pass6	Bob	White	user6@example.com	987 Main St	555-123-4562
user12	pass12	Bob	Thomas	user12@example.com	567 Main St	555-123-4568

Q9)

```
170 •  SELECT * FROM flight WHERE origin = 'New York';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00

Q10)

```
171 •  SELECT * FROM flight WHERE destination = 'Los Angeles';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00

Q11)

```
172 •   SELECT * FROM flight WHERE price > 300.00;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00

Q12)

```
173 •   SELECT * FROM flight ORDER BY depature_time;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL103	Chicago	Miami	08:00:00	11:00:00	250.00
FL107	Houston	Dallas	08:00:00	09:00:00	100.00
FL113	Phoenix	Las Vegas	08:00:00	09:00:00	150.00
FL117	Newark	Washington D.C	08:00:00	10:00:00	150.00
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00
FL111	Philadelphia	Atlanta	09:00:00	12:00:00	250.00
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00
FL108	Dallas	Houston	10:00:00	11:00:00	100.00
FL114	Las Vegas	Phoenix	10:00:00	11:00:00	150.00
FL119	Orlando	Nashville	10:00:00	12:00:00	150.00
FL109	Seattle	Denver	11:00:00	14:00:00	200.00
FL115	Portland	Salt Lake City	11:00:00	14:00:00	200.00
FL118	Washington ...	Newark	11:00:00	13:00:00	150.00
FL120	Portland	Salt Lake City	11:00:00	14:00:00	200.00

flight 7

Q13)

```
174 •   SELECT * FROM flight ORDER BY price DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00
FL102	Los Angeles	New York	14:00:00	17:00:00	300.00
FL103	Chicago	Miami	08:00:00	11:00:00	250.00
FL104	Miami	Chicago	12:00:00	15:00:00	250.00
FL111	Philadelphia	Atlanta	09:00:00	12:00:00	250.00
FL112	Atlanta	Philadelphia	13:00:00	16:00:00	250.00
FL109	Seattle	Denver	11:00:00	14:00:00	200.00
FL110	Denver	Seattle	15:00:00	18:00:00	200.00
FL115	Portland	Salt Lake City	11:00:00	14:00:00	200.00
FL116	Salt Lake City	Portland	15:00:00	18:00:00	200.00
FL120	Portland	Salt Lake City	11:00:00	14:00:00	200.00
FL113	Phoenix	Las Vegas	08:00:00	09:00:00	150.00
FL114	Las Vegas	Phoenix	10:00:00	11:00:00	150.00

flight 8

Q14)

```
175 •   SELECT * FROM flight ORDER BY origin, destination;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL112	Atlanta	Philadelphia	13:00:00	16:00:00	250.00
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00
FL103	Chicago	Miami	08:00:00	11:00:00	250.00
FL108	Dallas	Houston	10:00:00	11:00:00	100.00
FL110	Denver	Seattle	15:00:00	18:00:00	200.00
FL107	Houston	Dallas	08:00:00	09:00:00	100.00
FL114	Las Vegas	Phoenix	10:00:00	11:00:00	150.00
FL102	Los Angeles	New York	14:00:00	17:00:00	300.00
FL104	Miami	Chicago	12:00:00	15:00:00	250.00
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00
FL117	Newark	Washington ...	08:00:00	10:00:00	150.00
FL119	Orlando	Nashville	10:00:00	12:00:00	150.00
FL111	Philadelphia	Atlanta	09:00:00	12:00:00	250.00
FL113	Phoenix	Las Vegas	08:00:00	09:00:00	150.00
FL115	Portland	Salt Lake City	11:00:00	14:00:00	200.00

flight 9

Q15)

```
176 •   SELECT * FROM flight WHERE depature_time BETWEEN '08:00:00' AND '11:00:00';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00
FL103	Chicago	Miami	08:00:00	11:00:00	250.00
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00
FL107	Houston	Dallas	08:00:00	09:00:00	100.00
FL108	Dallas	Houston	10:00:00	11:00:00	100.00
FL109	Seattle	Denver	11:00:00	14:00:00	200.00
FL111	Philadelphia	Atlanta	09:00:00	12:00:00	250.00
FL113	Phoenix	Las Vegas	08:00:00	09:00:00	150.00
FL114	Las Vegas	Phoenix	10:00:00	11:00:00	150.00
FL115	Portland	Salt Lake City	11:00:00	14:00:00	200.00
FL117	Newark	Washington ...	08:00:00	10:00:00	150.00
FL118	Washington ...	Newark	11:00:00	13:00:00	150.00
FL119	Orlando	Nashville	10:00:00	12:00:00	150.00
FL120	Portland	Salt Lake City	11:00:00	14:00:00	200.00

flight 10 ×

Q16)

```
177 •   SELECT COUNT(*) FROM flight;
```

Result Grid | Filter Rows: | Export:

COUNT(*)
20

Q17)

```sql
SELECT flight_no, origin, destination, TIME_FORMAT(depature_time,'%H:%i'), TIME_FORMAT(arrival_time,'%H:%i'), price FROM flight;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	TIME_FORMAT(depature_time,'%H:%i')	TIME_FORMAT(arrival_time,'%H:%i')	price
FL101	New York	Los Angeles	10:00	13:00	300.00
FL102	Los Angeles	New York	14:00	17:00	300.00
FL103	Chicago	Miami	08:00	11:00	250.00
FL104	Miami	Chicago	12:00	15:00	250.00
FL105	San Francisco	Boston	09:00	16:00	400.00
FL106	Boston	San Francisco	10:00	19:00	400.00
FL107	Houston	Dallas	08:00	09:00	100.00
FL108	Dallas	Houston	10:00	11:00	100.00
FL109	Seattle	Denver	11:00	14:00	200.00
FL110	Denver	Seattle	15:00	18:00	200.00
FL111	Philadelphia	Atlanta	09:00	12:00	250.00
FL112	Atlanta	Philadelphia	13:00	16:00	250.00
FL113	Phoenix	Las Vegas	08:00	09:00	150.00
FL114	Las Vegas	Phoenix	10:00	11:00	150.00
FL115	Portland	Salt Lake City	11:00	14:00	200.00

Q18)

```sql
SELECT * FROM flight
LEFT JOIN ticket_status ON 1 = 1
WHERE flight.price > 300 AND ticket_status.status = 'closed';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price	ticket_id	status
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed
FL105	San Francisco	Boston	09:00:00	16:00:00	400.00	3	closed
FL106	Boston	San Francisco	10:00:00	19:00:00	400.00	3	closed

Q19)

```
184 •  SELECT * FROM flight
185    LEFT JOIN ticket_status ON 1 = 1
186    WHERE flight.origin = 'New York' AND flight.destination = 'Los Angeles';
187
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

flight_no	origin	destination	depature_time	arrival_time	price	ticket_id	status
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	19	transferred
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	18	cancelled
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	17	incomplete
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	16	postponed
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	15	failed
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	14	not done
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	13	suspended
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	12	invalid
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	11	duplicate
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	10	resolved
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	9	escalated
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	8	reopened
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	7	assigned
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	6	solved
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	5	on hold

Q20)

```
188 •  SELECT * FROM flight
189    LEFT JOIN ticket_status ON 1 = 1;
190
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

flight_no	origin	destination	depature_time	arrival_time	price	ticket_id	status
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	19	transferred
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	18	cancelled
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	17	incomplete
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	16	postponed
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	15	failed
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	14	not done
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	13	suspended
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	12	invalid
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	11	duplicate
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	10	resolved
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	9	escalated
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	8	reopened
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	7	assigned
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	6	solved
FL101	New York	Los Angeles	10:00:00	13:00:00	300.00	5	on hold

Result 16

Q21)

```
191 •   SELECT * FROM ticket_status WHERE status IN ('closed', 'solved');
192
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ticket_id	status
3	closed
6	solved
3	closed
6	solved
3	closed
6	solved
3	closed
6	solved
3	closed
6	solved
3	closed
6	solved
3	closed
6	solved
3	closed

Q22)

```
193 •   SELECT * FROM ticket_status;
```

Result Grid | Filter Rows: | Export: | Wrap

ticket_id	status
1	open
2	in progress
3	closed
4	pending
5	on hold
6	solved
7	assigned
8	reopened
9	escalated
10	resolved
11	duplicate
12	invalid
13	suspended
14	not done
15	failed

ticket_status 18 ×

Q23)

```
198 •   SELECT origin, destination, COUNT(*) as num_flights
199     FROM flight
200     GROUP BY origin, destination
201     ORDER BY num_flights DESC;
202
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

origin	destination	num_flights
Portland	Salt Lake City	2
New York	Los Angeles	1
Los Angeles	New York	1
Chicago	Miami	1
Miami	Chicago	1
San Francisco	Boston	1
Boston	San Francisco	1
Houston	Dallas	1
Dallas	Houston	1
Seattle	Denver	1
Denver	Seattle	1
Philadelphia	Atlanta	1
Atlanta	Philadelphia	1
Phoenix	Las Vegas	1
Las Vegas	Phoenix	1

Result 20 ×

Output

Q24)

```
203 •   SELECT AVG(TIME_TO_SEC(depature_time) / 60) as avg_depature_time_min
204     FROM flight;
205
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg_depature_time_min
639.00000000

Q25)

```
206 •   SELECT SUM(price) as total_price
207     FROM flight;
208
```

Result Grid | Filter Rows: | Export:

total_price
4350.00

Q26)

```
209 •   SELECT origin, destination, COUNT(*) as num_flights
210     FROM flight
211     GROUP BY origin, destination;
212
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

origin	destination	num_flights
New York	Los Angeles	1
Los Angeles	New York	1
Chicago	Miami	1
Miami	Chicago	1
San Francisco	Boston	1
Boston	San Francisco	1
Houston	Dallas	1
Dallas	Houston	1
Seattle	Denver	1
Denver	Seattle	1
Philadelphia	Atlanta	1
Atlanta	Philadelphia	1
Phoenix	Las Vegas	1
Las Vegas	Phoenix	1
Portland	Salt Lake City	2

Result 23

Q27)

```
213 •   SELECT origin, COUNT(*) as num_flights
214     FROM flight
215     GROUP BY origin;
216
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

origin	num_flights
New York	1
Los Angeles	1
Chicago	1
Miami	1
San Francisco	1
Boston	1
Houston	1
Dallas	1
Seattle	1
Denver	1
Philadelphia	1
Atlanta	1
Phoenix	1
Las Vegas	1
Portland	2

28)

```
217 •   SELECT destination, AVG(price) as avg_price
218     FROM flight
219     GROUP BY destination;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

destination	avg_price
Los Angeles	300.000000
New York	300.000000
Miami	250.000000
Chicago	250.000000
Boston	400.000000
San Francisco	400.000000
Dallas	100.000000
Houston	100.000000
Denver	200.000000
Seattle	200.000000
Atlanta	250.000000
Philadelphia	250.000000
Las Vegas	150.000000
Phoenix	150.000000
Salt Lake City	200.000000

Q29)

```
221 •   SELECT destination, COUNT(*) as num_flights
222     FROM flight
223     GROUP BY destination;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Co

destination	num_flights
Los Angeles	1
New York	1
Miami	1
Chicago	1
Boston	1
San Francisco	1
Dallas	1
Houston	1
Denver	1
Seattle	1
Atlanta	1
Philadelphia	1
Las Vegas	1
Phoenix	1
Salt Lake City	2

Result 27 ×

Q30)

```
224
225 •   SELECT MIN(price) as min_price, MAX(price) as max_price FROM flight;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

min_price	max_price
100.00	400.00

Q31)

```
227 •   SELECT COUNT(*) as num_flights FROM flight;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

num_flights
20

Q32)

```
229 •   SELECT AVG(price) as avg_price FROM flight;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg_price
217.500000