



ULUSLARARASI KIBRIS ÜNİVERSİTESİ  
CYPRUS INTERNATIONAL UNIVERSITY

## **FLIGHT BOOKING MANAGEMENT SYSTEM**

### **CMPE343: DATABASE MANAGEMENT SYSTEMS AND PROGRAMMING 1**

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*Submitted to*

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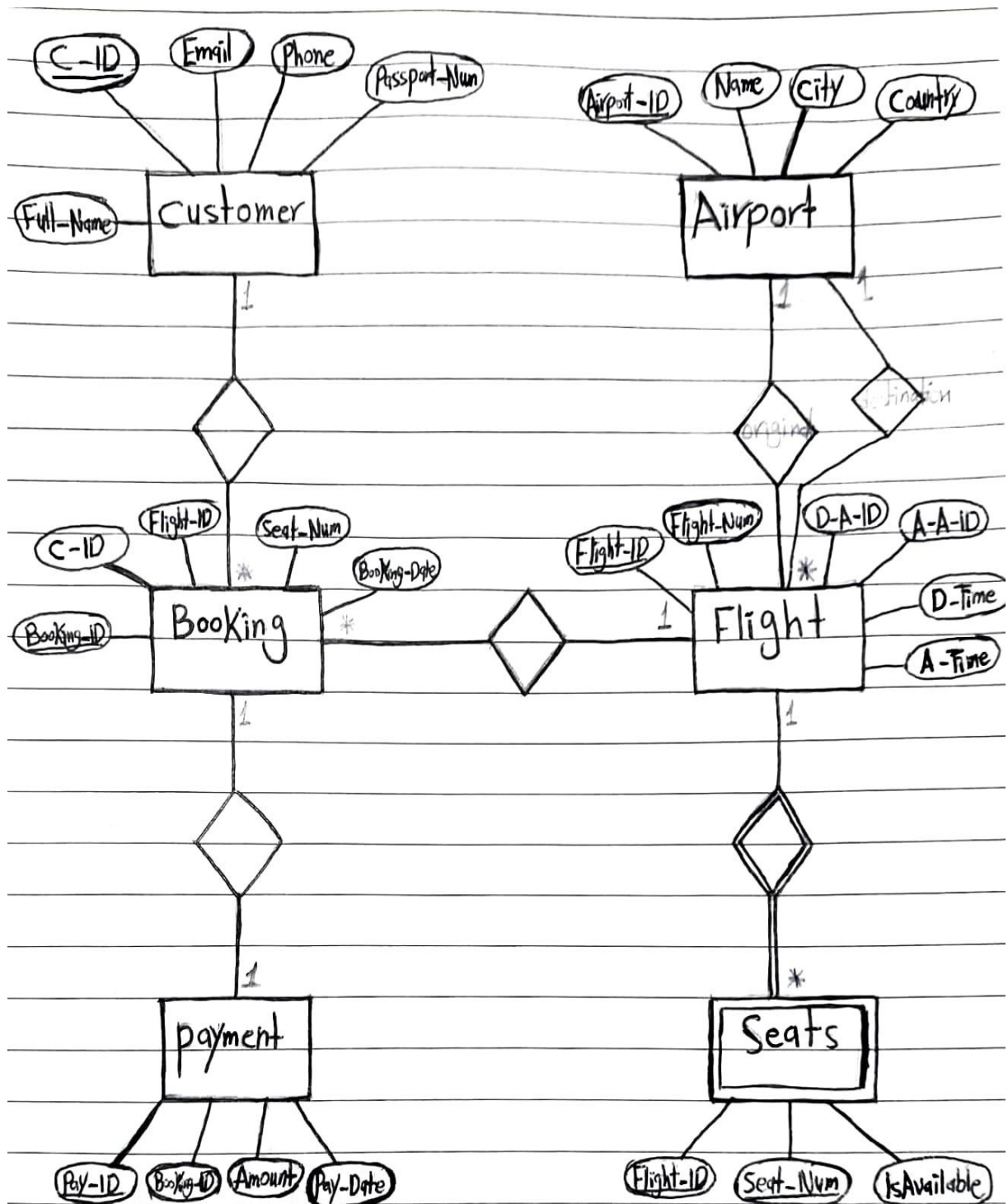
## PROJECT MEMBERS:

Name	Contribution
Faizah Faizah	DDL, DML, Queries, Report
Amani Zaag	Report
Ruba Hassan	ERD, DML, Queries

## INTRODUCTION:

The *Flight Booking Management System* is a relational database project designed to manage core aspects of airline operations, including customer information, airports, flight schedules, seat availability, bookings, and payments. The database structure ensures data consistency and integrity through the use of primary keys, foreign keys, and constraints. This system supports key functionalities such as booking flights, assigning seats, and recording payments.

## ENTITY RELATION DIAGRAM (ERD):



\* D-A-ID: Departure Airport ID

\* A-A-ID: Arrival Airport ID

\* D-Time: Departure Time

\* A-Time: Arrival Time

\* C-ID: Customer ID

## DATA DEFINITION LANGUAGE (DDL):

```
1 CREATE TABLE Customer (  
2   CustomerID INT PRIMARY KEY,  
3   FullName VARCHAR(100),  
4   Email VARCHAR(100) UNIQUE,  
5   Phone VARCHAR(20) UNIQUE NOT NULL,
```

SCHEMAS

Filter objects

flight\_booking\_management

- Tables
  - customer
- Views
- Stored Procedures
- Functions

1 CREATE TABLE Customer (  
2 CustomerID INT PRIMARY KEY,  
3 FullName VARCHAR(100),  
4 Email VARCHAR(100) UNIQUE,  
5 Phone VARCHAR(20) UNIQUE NOT NULL,  
6 PassportNumber VARCHAR(20) UNIQUE NOT NULL  
7 );

Limit to 1000 rows

```
1 CREATE TABLE Airport (  
2   AirportID INT PRIMARY KEY,  
3   Name VARCHAR(100),  
4   City VARCHAR(50),  
5   Country VARCHAR(50)  
6 );
```

SCHEMAS

Filter objects

flight\_booking\_management

- Tables
  - airport
  - customer
- Views
- Stored Procedures
- Functions

1 CREATE TABLE Airport (  
2 AirportID INT PRIMARY KEY,  
3 Name VARCHAR(100),  
4 City VARCHAR(50),  
5 Country VARCHAR(50)  
6 );

```

1 • CREATE TABLE Flight (
2     FlightID INT PRIMARY KEY,
3     FlightNumber VARCHAR(10) UNIQUE,
4     DepartureAirportID INT,
5     ArrivalAirportID INT,
6     DepartureTime DATETIME,
7     ArrivalTime DATETIME,
8     CONSTRAINT FK_DepartureAirport FOREIGN KEY (DepartureAirportID) REFERENCES Airport(AirportID),
9     CONSTRAINT FK_ArrivalAirport FOREIGN KEY (ArrivalAirportID) REFERENCES Airport(AirportID)
10 );

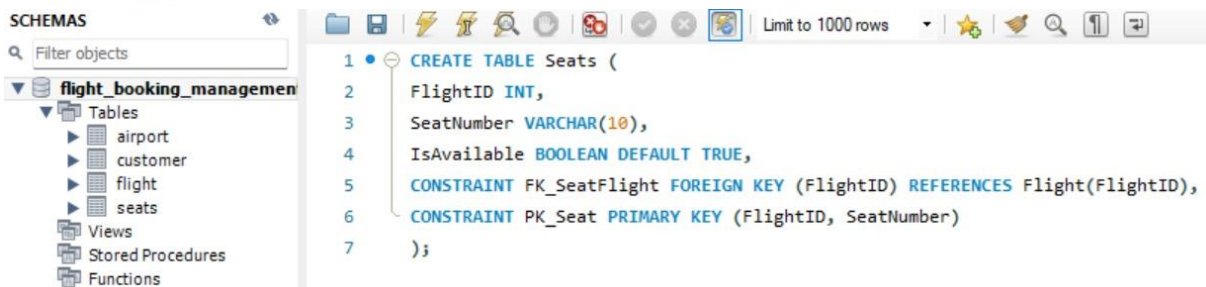
```



```

1 • CREATE TABLE Seats (
2     FlightID INT,
3     SeatNumber VARCHAR(10),
4     IsAvailable BOOLEAN DEFAULT TRUE,
5     CONSTRAINT FK_SeatFlight FOREIGN KEY (FlightID) REFERENCES Flight(FlightID),
6     CONSTRAINT PK_Seat PRIMARY KEY (FlightID, SeatNumber)
7 );

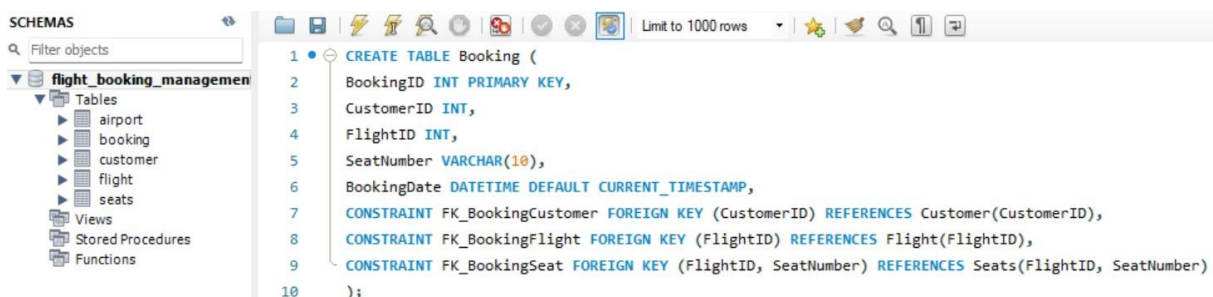
```



```

1 • CREATE TABLE Booking (
2     BookingID INT PRIMARY KEY,
3     CustomerID INT,
4     FlightID INT,
5     SeatNumber VARCHAR(10),
6     BookingDate DATETIME DEFAULT CURRENT_TIMESTAMP,
7     CONSTRAINT FK_BookingCustomer FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID),
8     CONSTRAINT FK_BookingFlight FOREIGN KEY (FlightID) REFERENCES Flight(FlightID),
9     CONSTRAINT FK_BookingSeat FOREIGN KEY (FlightID, SeatNumber) REFERENCES Seats(FlightID, SeatNumber)
10 );

```

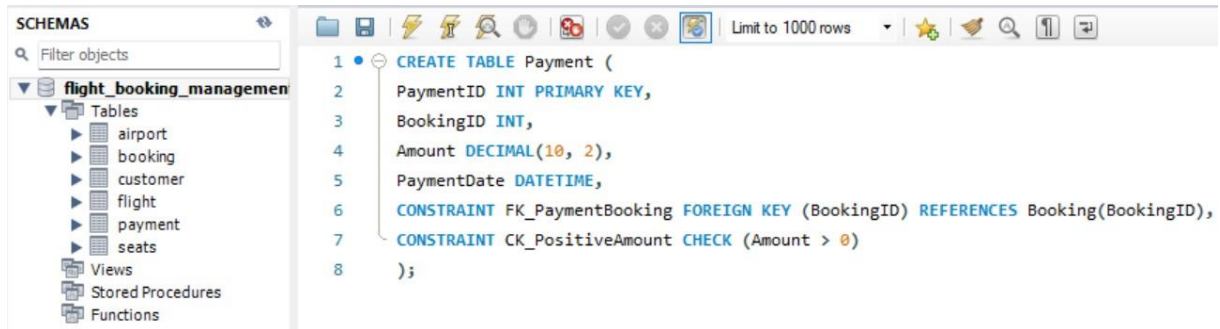




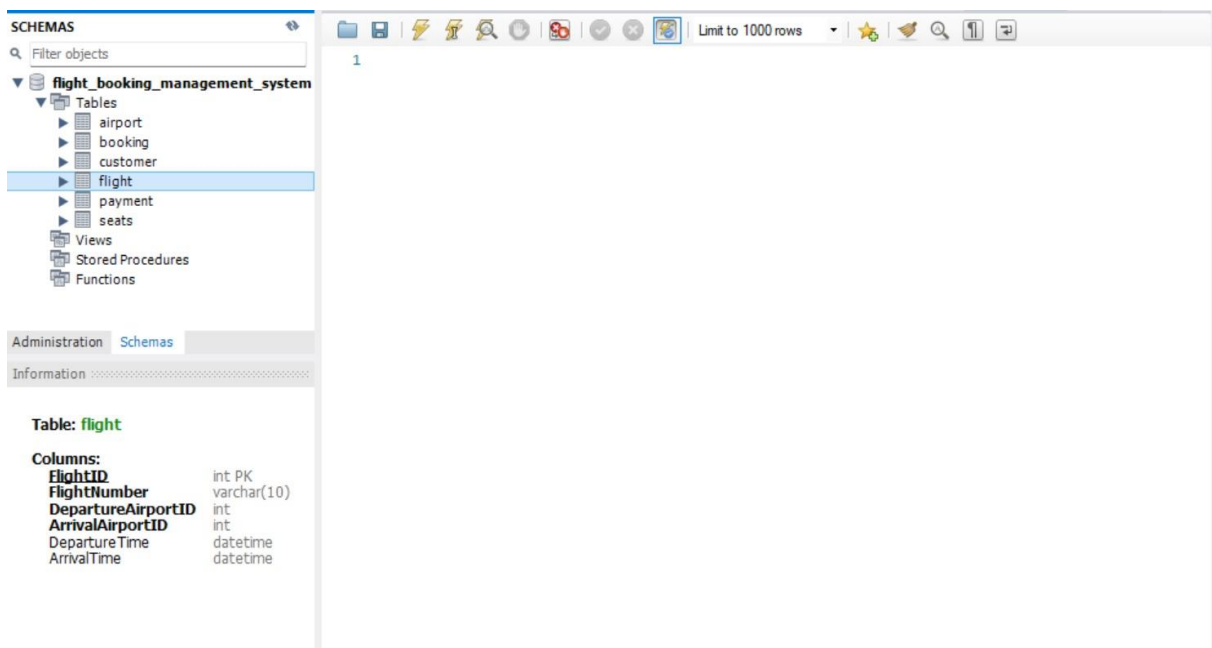
```

1 CREATE TABLE Payment (
2     PaymentID INT PRIMARY KEY,
3     BookingID INT,
4     Amount DECIMAL(10, 2),
5     PaymentDate DATETIME,
6     CONSTRAINT FK_PaymentBooking FOREIGN KEY (BookingID) REFERENCES Booking(BookingID),
7     CONSTRAINT CK_PositiveAmount CHECK (Amount > 0)
8 );

```



## DATA MANIPULATION LANGUAGE (DML):



```

1 ALTER TABLE Flight
2 ADD CONSTRAINT CK_ArrivalTime CHECK (ArrivalTime > DepartureTime);

```

### Table: airport

#### Columns:

<u>AirportID</u>	int PK
Name	varchar(90)
City	varchar(50)
Country	varchar(50)

```
1 • ALTER TABLE airport
2   MODIFY name VARCHAR(95);
```

### Table: airport

#### Columns:

<u>AirportID</u>	int PK
name	varchar(95)
City	varchar(50)
Country	varchar(50)

The screenshot displays a database management interface with two panels. The left panel, titled 'SCHEMAS', shows a tree view of the 'flight\_booking\_management\_system' database, including tables 'airport', 'booking', and 'customer'. The 'customer' table is expanded, showing columns: CustomerID, FullName, Email, Phone, PassportNumber, and Address. The right panel shows a SQL query editor with two steps: 1. ALTER TABLE Customer and 2. ADD Address VARCHAR(255);. Below this, the same interface is shown again, but the second step in the query editor is 'DROP COLUMN Address;', indicating the removal of the column.

SCHEMAS

Filter objects

flight\_booking\_management\_system

Tables

- airport
- booking
- customer
  - Columns
    - CustomerID
    - FullName
    - Email
    - Phone
    - PassportNumber
    - Address

1 • ALTER TABLE Customer

2 ADD Address VARCHAR(255);

SCHEMAS

Filter objects

flight\_booking\_management\_system

Tables

- airport
- booking
- customer
  - Columns
    - CustomerID
    - FullName
    - Email
    - Phone
    - PassportNumber

1 • ALTER TABLE Customer

2 DROP COLUMN Address;

## INSERTING VALUES (DML):

```

1  INSERT INTO Customer (CustomerID, FullName, Email, Phone, PassportNumber) VALUES
2  (1, 'John Doe', NULL, '555-9821', 'P987654321'),
3  (2, 'Jane Smith', 'jane.smith@gmail.com', '555-1342', 'P123456789'),
4  (3, 'Mike Johnson', 'mike.johnson@gmail.com', '555-2394', 'P543210987'),
5  (4, 'Emily Davis', NULL, '555-9876', 'P654321012'),
6  (5, 'Ali Brown', 'ali.brown@gmail.com', '555-4712', 'P876543210'),
7  (6, 'Linda White', NULL, '555-6235', 'P567890123'),
8  (7, 'David Taylor', 'david.taylor@gmail.com', '555-7598', 'P234567890'),
9  (8, 'Susan Moore', 'susan.moore@gmail.com', '555-8510', 'P345678901'),
10 (9, 'James Harris', NULL, '555-4723', 'P210987654'),
11 (10, 'Maryam Martin', 'maryam.martin@gmail.com', '555-5921', 'P123890765'),
12 (11, 'Robert Thompson', 'robert.thompson@gmail.com', '555-3467', 'P678901234'),
13 (12, 'Patricia Garcia', NULL, '555-8674', 'P234567321'),
14 (13, 'Charles Martinez', 'charles.martinez@gmail.com', '555-7198', 'P876543321'),
15 (14, 'Barbara Robinson', 'barbara.robinson@gmail.com', '555-6245', 'P345987654'),
16 (15, 'Thomas Clark', 'thomas.clark@gmail.com', '555-8709', 'P567890432'),
17 (16, 'Jessica Rodriguez', NULL, '555-7364', 'P234890765'),
18 (17, 'Christopher Lewis', 'christopher.lewis@gmail.com', '555-8246', 'P678903456'),
19 (18, 'Sarah Hall', 'sarah.hall@gmail.com', '555-5142', 'P987654567'),
20 (19, 'Daniel Walker', NULL, '555-3948', 'P432109876'),
21 (20, 'Nancy Hall', 'nancy.hall@gmail.com', '555-2765', 'P123456432');

```

```

1 • SELECT * FROM flight_booking_management_system.customer;

```

Result Grid					
Filter Rows:					
Edit:					
Export/Import:					
Wrap Cell Content:					
	CustomerID	FullName	Email	Phone	PassportNumber
▶	1	John Doe	NULL	555-9821	P987654321
	2	Jane Smith	jane.smith@gmail.com	555-1342	P123456789
	3	Mike Johnson	mike.johnson@gmail.com	555-2394	P543210987
	4	Emily Davis	NULL	555-9876	P654321012
	5	Ali Brown	ali.brown@gmail.com	555-4712	P876543210
	6	Linda White	NULL	555-6235	P567890123
	7	David Taylor	david.taylor@gmail.com	555-7598	P234567890
	8	Susan Moore	susan.moore@gmail.com	555-8510	P345678901
	9	James Harris	NULL	555-4723	P210987654
	10	Maryam Martin	maryam.martin@gmail.com	555-5921	P123890765
	11	Robert Thomp...	robert.thompson@gmail.com	555-3467	P678901234
	12	Patricia Garcia	NULL	555-8674	P234567321
	13	Charles Martinez	charles.martinez@gmail.com	555-7198	P876543321
	14	Barbara Robin...	barbara.robinson@gmail.c...	555-6245	P345987654
	15	Thomas Clark	thomas.clark@gmail.com	555-8709	P567890432
	16	Jessica Rodrig...	NULL	555-7364	P234890765
	17	Christopher L...	christopher.lewis@gmail.com	555-8246	P678903456
	18	Sarah Hall	sarah.hall@gmail.com	555-5142	P987654567



```

1  INSERT INTO Airport (AirportID, Name, City, Country) VALUES
2  (1, 'Melbourne Airport', 'Melbourne', 'Australia'),
3  (2, 'Gaza International Airport', 'Gaza', 'Palestine'),
4  (3, 'King Khalid International Airport', 'Riyadh', 'Saudi Arabia'),
5  (4, 'Esenboğa Airport', 'Ankara', 'Turkey'),
6  (5, 'Prince Mohammad bin Abdulaziz International Airport', 'Medina', 'Saudi Arabia'),
7  (6, 'Perth Airport', 'Perth', 'Australia'),
8  (7, 'Rafah International Airport', 'Rafah', 'Palestine'),
9  (8, 'Adana Şakirpaşa Airport', 'Adana', 'Turkey'),
10 (9, 'Adelaide Airport', 'Adelaide', 'Australia'),
11 (10, 'Abha International Airport', 'Abha', 'Saudi Arabia'),
12 (11, 'Istanbul Airport', 'Istanbul', 'Turkey'),
13 (12, 'Brisbane Airport', 'Brisbane', 'Australia'),
14 (13, 'King Abdulaziz International Airport', 'Jeddah', 'Saudi Arabia'),
15 (14, 'Sabiha Gökçen International Airport', 'Istanbul', 'Turkey'),
16 (15, 'Sydney Kingsford Smith Airport', 'Sydney', 'Australia');

```

```

1 • SELECT * FROM flight_booking_management_system.airport;

```

Result Grid				
Filter Rows:		Edit:		Export/Import:
Wrap Cell Content:				
AirportID	Name	City	Country	
1	Melbourne Airport	Melbourne	Australia	
2	Gaza International Airport	Gaza	Palestine	
3	King Khalid International Airport	Riyadh	Saudi Arabia	
4	Esenboğa Airport	Ankara	Turkey	
5	Prince Mohammad bin Abdulaziz International Ai...	Medina	Saudi Arabia	
6	Perth Airport	Perth	Australia	
7	Rafah International Airport	Rafah	Palestine	
8	Adana Şakirpaşa Airport	Adana	Turkey	
9	Adelaide Airport	Adelaide	Australia	
10	Abha International Airport	Abha	Saudi Arabia	
11	Istanbul Airport	Istanbul	Turkey	
12	Brisbane Airport	Brisbane	Australia	
13	King Abdulaziz International Airport	Jeddah	Saudi Arabia	
14	Sabiha Gökçen International Airport	Istanbul	Turkey	
15	Sydney Kingsford Smith Airport	Sydney	Australia	
NULL	NULL	NULL	NULL	

```

1  INSERT INTO Flight (FlightID, FlightNumber, DepartureAirportID, ArrivalAirportID, DepartureTime,
2  (1, 'AU1001', 1, 3, '2025-05-15 06:20:00', '2025-05-15 14:10:00'),
3  (2, 'TK1002', 4, 11, '2025-06-03 13:30:00', '2025-06-03 16:00:00'),
4  (3, 'SA1003', 13, 6, '2025-05-20 22:10:00', '2025-05-21 06:45:00'),
5  (4, 'PL1004', 2, 5, '2025-06-01 09:00:00', '2025-06-01 14:25:00'),
6  (5, 'AU1005', 9, 10, '2025-06-10 18:00:00', '2025-06-11 01:30:00'),
7  (6, 'TK1006', 14, 8, '2025-05-28 07:40:00', '2025-05-28 10:00:00'),
8  (7, 'SA1007', 5, 12, '2025-05-30 11:00:00', '2025-05-30 19:15:00'),
9  (8, 'PL1008', 7, 13, '2025-06-05 04:30:00', '2025-06-05 09:55:00'),
10 (9, 'AU1009', 15, 4, '2025-06-02 15:50:00', '2025-06-02 21:20:00'),
11 (10, 'TK1010', 11, 1, '2025-06-08 17:10:00', '2025-06-09 00:05:00'),
12 (11, 'SA1011', 3, 9, '2025-05-25 08:15:00', '2025-05-25 14:20:00'),
13 (12, 'AU1012', 6, 2, '2025-06-04 23:10:00', '2025-06-05 05:35:00'),
14 (13, 'TK1013', 8, 14, '2025-06-06 10:00:00', '2025-06-06 12:45:00'),
15 (14, 'PL1014', 2, 7, '2025-05-26 06:30:00', '2025-05-26 07:20:00'),
16 (15, 'SA1015', 10, 15, '2025-06-09 20:30:00', '2025-06-10 04:00:00');

```

```

1 • SELECT * FROM flight_booking_management_system.flight;

```

Result Grid						
Filter Rows:						
Edit: Export/Import: Wrap Cell Content:						
	FlightID	FlightNumber	DepartureAirportID	ArrivalAirportID	DepartureTime	ArrivalTime
▶	1	AU1001	1	3	2025-05-15 06:20:00	2025-05-15 14:10:00
	2	TK1002	4	11	2025-06-03 13:30:00	2025-06-03 16:00:00
	3	SA1003	13	6	2025-05-20 22:10:00	2025-05-21 06:45:00
	4	PL1004	2	5	2025-06-01 09:00:00	2025-06-01 14:25:00
	5	AU1005	9	10	2025-06-10 18:00:00	2025-06-11 01:30:00
	6	TK1006	14	8	2025-05-28 07:40:00	2025-05-28 10:00:00
	7	SA1007	5	12	2025-05-30 11:00:00	2025-05-30 19:15:00
	8	PL1008	7	13	2025-06-05 04:30:00	2025-06-05 09:55:00
	9	AU1009	15	4	2025-06-02 15:50:00	2025-06-02 21:20:00
	10	TK1010	11	1	2025-06-08 17:10:00	2025-06-09 00:05:00
	11	SA1011	3	9	2025-05-25 08:15:00	2025-05-25 14:20:00
	12	AU1012	6	2	2025-06-04 23:10:00	2025-06-05 05:35:00
	13	TK1013	8	14	2025-06-06 10:00:00	2025-06-06 12:45:00
	14	PL1014	2	7	2025-05-26 06:30:00	2025-05-26 07:20:00
	15	SA1015	10	15	2025-06-09 20:30:00	2025-06-10 04:00:00
*	NULL	NULL	NULL	NULL	NULL	NULL

```

1  INSERT INTO Seats (FlightID, SeatNumber, IsAvailable) VALUES
2  (1, 'A1', TRUE), (1, 'B2', FALSE), (1, 'C3', TRUE), (1, 'D4', TRUE), (1, 'E5', TRUE),
3  (1, 'F6', TRUE), (1, 'G7', TRUE), (1, 'H8', FALSE), (1, 'I9', FALSE), (1, 'J10', TRUE),
4  (2, 'A1', TRUE), (2, 'B2', TRUE), (2, 'C3', TRUE), (2, 'D4', FALSE), (2, 'E5', TRUE),
5  (2, 'F6', TRUE), (2, 'G7', FALSE), (2, 'H8', TRUE), (2, 'I9', TRUE), (2, 'J10', TRUE),
6  (3, 'A1', TRUE), (3, 'B2', FALSE), (3, 'C3', TRUE), (3, 'D4', TRUE), (3, 'E5', TRUE),
7  (3, 'F6', FALSE), (3, 'G7', TRUE), (3, 'H8', TRUE), (3, 'I9', TRUE), (3, 'J10', TRUE),
8  (4, 'A1', TRUE), (4, 'B2', FALSE), (4, 'C3', TRUE), (4, 'D4', TRUE), (4, 'E5', TRUE),
9  (4, 'F6', TRUE), (4, 'G7', TRUE), (4, 'H8', FALSE), (4, 'I9', TRUE), (4, 'J10', FALSE),
10 (5, 'A1', TRUE), (5, 'B2', FALSE), (5, 'C3', TRUE), (5, 'D4', TRUE), (5, 'E5', TRUE),
11 (5, 'F6', TRUE), (5, 'G7', TRUE), (5, 'H8', TRUE), (5, 'I9', TRUE), (5, 'J10', FALSE),
12 (6, 'A1', TRUE), (6, 'B2', TRUE), (6, 'C3', TRUE), (6, 'D4', TRUE), (6, 'E5', TRUE),
13 (6, 'F6', TRUE), (6, 'G7', TRUE), (6, 'H8', TRUE), (6, 'I9', TRUE), (6, 'J10', TRUE),
14 (7, 'A1', TRUE), (7, 'B2', FALSE), (7, 'C3', TRUE), (7, 'D4', TRUE), (7, 'E5', TRUE),
15 (7, 'F6', TRUE), (7, 'G7', TRUE), (7, 'H8', FALSE), (7, 'I9', TRUE), (7, 'J10', TRUE),
16 (8, 'A1', TRUE), (8, 'B2', TRUE), (8, 'C3', TRUE), (8, 'D4', TRUE), (8, 'E5', TRUE),
17 (8, 'F6', TRUE), (8, 'G7', TRUE), (8, 'H8', TRUE), (8, 'I9', TRUE), (8, 'J10', TRUE),
18 (9, 'A1', TRUE), (9, 'B2', TRUE), (9, 'C3', TRUE), (9, 'D4', TRUE), (9, 'E5', FALSE),
19 (9, 'F6', TRUE), (9, 'G7', FALSE), (9, 'H8', FALSE), (9, 'I9', FALSE), (9, 'J10', FALSE),
20 (10, 'A1', TRUE), (10, 'B2', TRUE), (10, 'C3', TRUE), (10, 'D4', TRUE), (10, 'E5', TRUE),
21 (10, 'F6', TRUE), (10, 'G7', TRUE), (10, 'H8', TRUE), (10, 'I9', FALSE), (10, 'J10', TRUE),
22 (11, 'A1', TRUE), (11, 'B2', TRUE), (11, 'C3', TRUE), (11, 'D4', TRUE), (11, 'E5', TRUE),
23 (11, 'F6', TRUE), (11, 'G7', TRUE), (11, 'H8', TRUE), (11, 'I9', TRUE), (11, 'J10', TRUE),
24 (12, 'A1', TRUE), (12, 'B2', TRUE), (12, 'C3', TRUE), (12, 'D4', TRUE), (12, 'E5', TRUE),
--

```

Limit to 1000 rows

1 • SELECT \* FROM SEATS;

FlightID	SeatNumber	IsAvailable
1	A1	1
1	B2	0
1	C3	1
1	D4	1
1	E5	1
1	F6	1
1	G7	1
1	H8	1
1	I9	0
1	J10	1
2	A1	1
2	B2	0
2	C3	1
2	D4	1
2	E5	1
2	F6	1
2	G7	1
2	H8	0
2	I9	0
2	J10	1

1 • SELECT \* FROM SEATS

2 WHERE isavailable = 0;

FlightID	SeatNumber	IsAvailable
1	B2	0
1	I9	0
2	B2	0
2	H8	0
2	I9	0
3	F6	0
4	B2	0
4	E5	0
4	I9	0
5	H8	0
6	A1	0
6	G7	0
6	I9	0
6	J10	0
7	I9	0
12	G7	0
12	H8	0
12	I9	0
13	F6	0
13	G7	0



```

1  INSERT INTO Booking (BookingID, CustomerID, FlightID, SeatNumber, BookingDate) VALUES
2  (1, 4, 1, 'B2', '2025-05-01 08:30:00'),
3  (2, 17, 1, 'I9', '2025-05-01 10:15:00'),
4  (3, 9, 2, 'B2', '2025-05-01 12:30:00'),
5  (4, 3, 2, 'H8', '2025-05-02 06:45:00'),
6  (5, 12, 2, 'I9', '2025-05-02 09:00:00'),
7  (6, 19, 3, 'F6', '2025-05-02 11:00:00'),
8  (7, 5, 4, 'B2', '2025-05-03 07:30:00'),
9  (8, 13, 4, 'E5', '2025-05-03 09:15:00'),
10 (9, 8, 4, 'I9', '2025-05-03 12:00:00'),
11 (10, 14, 5, 'H8', '2025-05-03 14:15:00'),
12 (11, 6, 6, 'A1', '2025-05-04 06:30:00'),
13 (12, 1, 6, 'G7', '2025-05-04 08:00:00'),
14 (13, 16, 6, 'I9', '2025-05-04 09:45:00'),
15 (14, 18, 6, 'J10', '2025-05-04 11:00:00'),
16 (15, 11, 7, 'I9', '2025-05-04 13:30:00'),
17 (16, 2, 12, 'G7', '2025-05-05 06:45:00'),
18 (17, 10, 12, 'H8', '2025-05-05 08:15:00'),
19 (18, 20, 12, 'I9', '2025-05-05 10:30:00'),
20 (19, 15, 13, 'F6', '2025-05-05 12:45:00'),
21 (20, 7, 13, 'G7', '2025-05-06 07:30:00'),
22 (21, 4, 13, 'J10', '2025-05-06 09:00:00'),
23 (22, 13, 14, 'D4', '2025-05-06 10:15:00'),
24 (23, 19, 14, 'G7', '2025-05-06 11:30:00'),

```

```

1 • SELECT * FROM flight_booking_management_system.booking;

```

Result Grid   Filter Rows:   Edit:   Export/Import:   Wrap Cell Content:					
	BookingID	CustomerID	FlightID	SeatNumber	BookingDate
▶	1	4	1	B2	2025-05-01 08:30:00
	2	17	1	I9	2025-05-01 10:15:00
	3	9	2	B2	2025-05-01 12:30:00
	4	3	2	H8	2025-05-02 06:45:00
	5	12	2	I9	2025-05-02 09:00:00
	6	19	3	F6	2025-05-02 11:00:00
	7	5	4	B2	2025-05-03 07:30:00
	8	13	4	E5	2025-05-03 09:15:00
	9	8	4	I9	2025-05-03 12:00:00
	10	14	5	H8	2025-05-03 14:15:00
	11	6	6	A1	2025-05-04 06:30:00
	12	1	6	G7	2025-05-04 08:00:00
	13	16	6	I9	2025-05-04 09:45:00
	14	18	6	J10	2025-05-04 11:00:00
	15	11	7	I9	2025-05-04 13:30:00
	16	2	12	G7	2025-05-05 06:45:00
	17	10	12	H8	2025-05-05 08:15:00
	18	20	12	I9	2025-05-05 10:30:00
	19	15	13	F6	2025-05-05 12:45:00
	20	7	13	G7	2025-05-06 07:30:00



```

1  INSERT INTO Payment (PaymentID, BookingID, Amount, PaymentDate) VALUES
2  (1, 1, 150.00, '2025-05-01 08:45:00'),
3  (2, 2, 200.00, '2025-05-01 10:30:00'),
4  (3, 3, NULL, NULL),
5  (4, 4, 220.00, '2025-05-02 07:00:00'),
6  (5, 5, NULL, NULL),
7  (6, 6, 230.00, '2025-05-02 11:30:00'),
8  (7, 7, 210.00, '2025-05-03 08:00:00'),
9  (8, 8, NULL, NULL),
10 (9, 9, 240.00, '2025-05-03 12:00:00'),
11 (10, 10, 260.00, '2025-05-03 14:30:00'),
12 (11, 11, 175.00, '2025-05-04 07:30:00'),
13 (12, 12, 210.00, '2025-05-04 09:00:00'),
14 (13, 13, NULL, NULL),
15 (14, 14, 200.00, '2025-05-04 12:00:00'),
16 (15, 15, 190.00, '2025-05-04 13:30:00'),
17 (16, 16, 180.00, '2025-05-05 06:30:00'),
18 (17, 17, 240.00, '2025-05-05 08:00:00'),
19 (18, 18, 250.00, '2025-05-05 09:30:00'),
20 (19, 19, NULL, NULL),
21 (20, 20, 215.00, '2025-05-06 07:00:00'),
22 (21, 21, 225.00, '2025-05-06 08:30:00'),
23 (22, 22, NULL, NULL),
24 (23, 23, 245.00, '2025-05-06 11:30:00'),

```

```

1 • SELECT * FROM flight_booking_management_system.payment;

```

Result Grid				
Filter Rows:				
Edit:				
Export/Import:				
Wrap Cell Content:				
	PaymentID	BookingID	Amount	PaymentDate
▶	1	1	150.00	2025-05-01 08:45:00
	2	2	200.00	2025-05-01 10:30:00
	3	3	NULL	NULL
	4	4	220.00	2025-05-02 07:00:00
	5	5	NULL	NULL
	6	6	230.00	2025-05-02 11:30:00
	7	7	210.00	2025-05-03 08:00:00
	8	8	NULL	NULL
	9	9	240.00	2025-05-03 12:00:00
	10	10	260.00	2025-05-03 14:30:00
	11	11	175.00	2025-05-04 07:30:00
	12	12	210.00	2025-05-04 09:00:00
	13	13	NULL	NULL
	14	14	200.00	2025-05-04 12:00:00
	15	15	190.00	2025-05-04 13:30:00
	16	16	180.00	2025-05-05 06:30:00
	17	17	240.00	2025-05-05 08:00:00
	18	18	250.00	2025-05-05 09:30:00
	19	19	NULL	NULL
	20	20	215.00	2025-05-06 07:00:00
	21	21	225.00	2025-05-06 08:30:00
	22	22	NULL	NULL
	23	23	245.00	2025-05-06 11:30:00



# SQL QUERIES

```

1  SELECT
2      c.FullName,
3      p.Amount,
4      (p.Amount + 5) AS ServiceFee,
5      (p.Amount * 1.1) AS TotalWithTax
6  FROM Customer c
7  JOIN Booking b
8  ON c.CustomerID = b.CustomerID
9  JOIN Payment p
10 ON b.BookingID = p.BookingID;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FullName	Amount	ServiceFee	TotalWithTax
Jane Smith	180.00	185.00	198.000
Mike Johnson	220.00	225.00	242.000
Emily Davis	150.00	155.00	165.000
Emily Davis	225.00	230.00	247.500
Ali Brown	210.00	215.00	231.000
Linda White	175.00	180.00	192.500
David Taylor	215.00	220.00	236.500
Susan Moore	240.00	245.00	264.000
Susan Moore	215.00	220.00	236.500
James Harris	NULL	NULL	NULL
Maryam Martin	240.00	245.00	264.000
Robert Tho...	190.00	195.00	209.000
Patricia Garcia	NULL	NULL	NULL
Patricia Garcia	NULL	NULL	NULL

```

1  •  SELECT
2      FlightNumber,
3      DepartureTime,
4      ArrivalTime,
5      TIMESTAMPDIFF(HOUR, DepartureTime, ArrivalTime) AS DurationHours
6  FROM
7      Flight;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FlightNumber	DepartureTime	ArrivalTime	DurationHours
AU1001	2025-05-15 06:20:00	2025-05-15 14:10:00	7
TK1002	2025-06-03 13:30:00	2025-06-03 16:00:00	2
SA1003	2025-05-20 22:10:00	2025-05-21 06:45:00	8
PL1004	2025-06-01 09:00:00	2025-06-01 14:25:00	5
AU1005	2025-06-10 18:00:00	2025-06-11 01:30:00	7
TK1006	2025-05-28 07:40:00	2025-05-28 10:00:00	2
SA1007	2025-05-30 11:00:00	2025-05-30 19:15:00	8
PL1008	2025-06-05 04:30:00	2025-06-05 09:55:00	5
AU1009	2025-06-02 15:50:00	2025-06-02 21:20:00	5
TK1010	2025-06-08 17:10:00	2025-06-09 00:05:00	6
SA1011	2025-05-25 08:15:00	2025-05-25 14:20:00	6
AU1012	2025-06-04 23:10:00	2025-06-05 05:35:00	6
TK1013	2025-06-06 10:00:00	2025-06-06 12:45:00	2
PL1014	2025-05-26 06:30:00	2025-05-26 07:20:00	0
SA1015	2025-06-09 20:30:00	2025-06-10 04:00:00	7

```

1 • SELECT
2     c.FullName,
3     CONCAT('Contact: ', c.Phone, ' | Email: ', c.Email) AS ContactInfo,
4     a.Country AS ArrivalCountry
5 FROM Customer c
6 JOIN Booking b ON c.CustomerID = b.CustomerID
7 JOIN Flight f ON b.FlightID = f.FlightID
8 JOIN Airport a ON f.ArrivalAirportID = a.AirportID
9 WHERE c.Email IS NOT NULL;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FullName	ContactInfo	ArrivalCountry	
▶ Jane Smith	Contact: 555-1342   Email: jane.smith@gmail.com	Palestine	
Mike Johnson	Contact: 555-2394   Email: mike.johnson@gmail...	Turkey	
Ali Brown	Contact: 555-4712   Email: ali.brown@gmail.com	KSA	
David Taylor	Contact: 555-7598   Email: david.taylor@gmail...	Turkey	
Susan Moore	Contact: 555-8510   Email: susan.moore@gmail...	KSA	
Susan Moore	Contact: 555-8510   Email: susan.moore@gmail...	Palestine	
Maryam Martin	Contact: 555-5921   Email: maryam.martin@gm...	Palestine	
Robert Thompson	Contact: 555-3467   Email: robert.thompson@g...	Australia	
Charles Martinez	Contact: 555-7198   Email: charles.martinez@g...	KSA	
Charles Martinez	Contact: 555-7198   Email: charles.martinez@g...	Palestine	
Barbara Robinson	Contact: 555-6245   Email: barbara.robinson@...	KSA	
Thomas Clark	Contact: 555-8709   Email: thomas.clark@gmail...	Turkey	
Christopher Lewis	Contact: 555-8246   Email: christopher.lewis@g...	KSA	
Christopher Lewis	Contact: 555-8246   Email: christopher.lewis@g...	Australia	
Sarah Hall	Contact: 555-5142   Email: sarah.hall@gmail.com	Turkev	

```

1 • SELECT DISTINCT
2     a.Country AS ArrivalCountry
3 FROM Booking b
4 JOIN Flight f ON b.FlightID = f.FlightID
5 JOIN Airport a ON f.ArrivalAirportID = a.AirportID;
6

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
ArrivalCountry			
▶ Palestine			
KSA			
Australia			
Turkey			

```

1 SELECT f.FlightNumber, f.DepartureTime, f.ArrivalTime,
2     TIMESTAMPDIFF(HOUR, f.DepartureTime, f.ArrivalTime) AS FlightDuration
3 FROM Flight f
4 JOIN Airport a1 ON f.DepartureAirportID = a1.AirportID
5 JOIN Airport a2 ON f.ArrivalAirportID = a2.AirportID
6 WHERE
7     TIME(f.ArrivalTime) > '17:00:00'
8     AND TIMESTAMPDIFF(HOUR, f.DepartureTime, f.ArrivalTime) > 1;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FlightNumber	DepartureTime	ArrivalTime	FlightDuration
▶ SA1007	2025-05-30 11:00:00	2025-05-30 19:15:00	8
AU1009	2025-06-02 15:50:00	2025-06-02 21:20:00	5



```

1  SELECT FullName, Phone, Email
2  FROM Customer
3  WHERE (Phone LIKE '%71%' OR Email LIKE '%n@%')
4  AND FullName LIKE '%A%';

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FullName	Phone	Email	
Ali Brown	555-4712	ali.brown@gmail.com	
Maryam Martin	555-5921	maryam.martin@gmail.com	
Charles Martinez	555-7198	charles.martinez@gmail.com	
Barbara Robinson	555-6245	barbara.robinson@gmail.com	

```

1  SELECT f.FlightNumber, f.DepartureTime, f.ArrivalTime,
2         TIMESTAMPDIFF(HOUR, f.DepartureTime, f.ArrivalTime) AS FlightDuration
3  FROM Flight f
4  JOIN Airport a1 ON f.DepartureAirportID = a1.AirportID
5  JOIN Airport a2 ON f.ArrivalAirportID = a2.AirportID
6  WHERE
7         TIME(f.ArrivalTime) > '17:00:00'
8         AND TIMESTAMPDIFF(HOUR, f.DepartureTime, f.ArrivalTime) > 1;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FlightNumber	DepartureTime	ArrivalTime	FlightDuration
SA1007	2025-05-30 11:00:00	2025-05-30 19:15:00	8
AU1009	2025-06-02 15:50:00	2025-06-02 21:20:00	5

```

1  • SELECT c.FullName, c.customerid, b.BookingID, p.Amount
2  FROM Customer c
3  JOIN Booking b ON c.CustomerID = b.CustomerID
4  JOIN Payment p ON b.BookingID = p.BookingID
5  WHERE c.CustomerID > 10
6         AND (p.Amount > 200 OR b.BookingID > 20)
7  ORDER BY p.Amount DESC;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FullName	customerid	BookingID	Amount
Barbara Robinson	14	10	260.00
Nancy Hall	20	18	250.00
Daniel Walker	19	23	245.00
Daniel Walker	19	6	230.00
Christopher Lewis	17	25	225.00
Charles Martinez	13	22	NULL

```

1  SELECT c.CustomerID, c.FullName, b.BookingID, p.amount
2  FROM Customer c
3  JOIN Booking b ON c.CustomerID = b.CustomerID
4  LEFT JOIN Payment p ON b.BookingID = p.BookingID
5  ORDER BY customerid;

```

Result Grid				
		Filter Rows:	Export:	Wrap Cell Content: <a href="#">IA</a>
	CustomerID	FullName	BookingID	amount
▶	1	John Doe	12	210.00
	2	Jane Smith	16	180.00
	3	Mike Johnson	4	220.00
	4	Emily Davis	1	150.00
	4	Emily Davis	21	225.00
	5	Ali Brown	7	210.00
	6	Linda White	11	175.00
	7	David Taylor	20	215.00
	8	Susan Moore	9	240.00
	8	Susan Moore	24	215.00
	9	James Harris	3	NULL
	10	Maryam Martin	17	240.00
	11	Robert Tho...	15	190.00
	12	Patricia Garcia	5	NULL
	13	Charles Mart...	8	NULL
	13	Charles Mart...	22	NULL
	14	Barbara Rob...	10	260.00
	15	Thomas Clark	19	NULL
	16	Jessica Rodr...	13	NULL

```

2      c.CustomerID,
3      c.FullName,
4      COUNT(b.BookingID) AS TotalBookings,
5      MAX(b.BookingDate) AS LastBookingDate
6  FROM Customer c
7  LEFT JOIN Booking b ON c.CustomerID = b.CustomerID
8  GROUP BY c.CustomerID, c.FullName;

```

Result Grid				
		Filter Rows:	Export:	Wrap Cell Content: <a href="#">IA</a>
	CustomerID	FullName	TotalBookings	LastBookingDate
▶	1	John Doe	1	2025-05-04 08:00:00
	2	Jane Smith	1	2025-05-05 06:45:00
	3	Mike Johnson	1	2025-05-02 06:45:00
	4	Emily Davis	2	2025-05-06 09:00:00
	5	Ali Brown	1	2025-05-03 07:30:00
	6	Linda White	1	2025-05-04 06:30:00
	7	David Taylor	1	2025-05-06 07:30:00
	8	Susan Moore	2	2025-05-06 12:45:00
	9	James Harris	1	2025-05-01 12:30:00
	10	Maryam Martin	1	2025-05-05 08:15:00
	11	Robert Thomp...	1	2025-05-04 13:30:00
	12	Patricia Garcia	1	2025-05-02 09:00:00
	13	Charles Martinez	2	2025-05-06 10:15:00
	14	Barbara Robin...	1	2025-05-03 14:15:00
	15	Thomas Clark	1	2025-05-05 12:45:00
	16	Jessica Rodrig...	1	2025-05-04 09:45:00

```

1 • SELECT s.SeatNumber, c.CustomerID, c.FullName
2 FROM Seats s
3 JOIN Flight f ON s.FlightID = f.FlightID
4 JOIN Booking b ON s.FlightID = b.FlightID AND s.SeatNumber = b.SeatNumber
5 JOIN Customer c ON b.CustomerID = c.CustomerID
6 WHERE s.IsAvailable = FALSE;

```

Result Grid			
		Filter Rows:	Export:  Wrap Cell Content:
	SeatNumber	CustomerID	FullName
▶	B2	4	Emily Davis
	I9	17	Christopher Lewis
	B2	9	James Harris
	H8	3	Mike Johnson
	I9	12	Patricia Garcia
	F6	19	Daniel Walker
	B2	5	Ali Brown
	E5	13	Charles Martinez
	I9	8	Susan Moore
	H8	14	Barbara Robinson
	A1	6	Linda White
	G7	1	John Doe
	I9	16	Jessica Rodriguez
	J10	18	Sarah Hall
	I9	11	Robert Thompson
	G7	2	Jane Smith
	H8	10	Maryam Martin

```

1 • SELECT c.FullName,
2         SUBSTR(c.FullName, 1, 3) AS NameStart,
3         LENGTH(c.Email) AS EmailLength,
4         INSTR(c.Email, '@') AS AtSymbolPos
5 FROM Customer c
6 INNER JOIN Booking b ON c.CustomerID = b.CustomerID
7 INNER JOIN Flight f ON b.FlightID = f.FlightID
8 WHERE INSTR(c.Email, '@') > 0
9 ORDER BY c.CustomerID;

```

Result Grid				
		Filter Rows:	Export:  Wrap Cell Content:	
	FullName	NameStart	EmailLength	AtSymbolPos
▶	Jane Smith	Jan	20	11
	Mike Johnson	Mik	22	13
	Ali Brown	Ali	19	10
	David Taylor	Dav	22	13
	Susan Moore	Sus	21	12
	Susan Moore	Sus	21	12
	Maryam Martin	Mar	23	14
	Robert Thompson	Rob	25	16
	Charles Martinez	Cha	26	17
	Charles Martinez	Cha	26	17
	Barbara Robinson	Bar	26	17
	Thomas Clark	Tho	22	13
	Christopher Lewis	Chr	27	18
	Christopher Lewis	Chr	27	18

```

1 • SELECT f.FlightID, f.FlightNumber
2     FROM Flight f
3     JOIN Seats s ON f.FlightID = s.FlightID
4     GROUP BY f.FlightID
5     HAVING SUM(s.IsAvailable = TRUE) > 8;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FlightID	FlightNumber		
3	SA1003		
5	AU1005		
7	SA1007		
8	PL1008		
9	AU1009		
10	TK1010		
11	SA1011		
15	SA1015		

```

1 • SELECT c.CustomerID, c.FullName
2     FROM Customer c
3     LEFT JOIN Booking b ON c.CustomerID = b.CustomerID
4     WHERE b.BookingID IS NULL;
5

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
CustomerID	FullName		

```

1 • SELECT c.FullName, f.FlightNumber, b.BookingID, p.PaymentID, p.Amount, p.PaymentDate
2     FROM Customer c
3     JOIN Booking b ON c.CustomerID = b.CustomerID
4     JOIN Flight f ON b.FlightID = f.FlightID
5     LEFT JOIN Payment p ON b.BookingID = p.BookingID
6     WHERE c.CustomerID = 5;

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	FullName	FlightNumber	BookingID	PaymentID	Amount	PaymentDate
	Ali Brown	PL1004	7	7	210.00	2025-05-03 08:00:00



```

1 • SELECT c.CustomerID, c.FullName, a.Country AS DestinationCountry
2 FROM Customer c
3 JOIN Booking b ON c.CustomerID = b.CustomerID
4 JOIN Flight f ON b.FlightID = f.FlightID
5 JOIN Airport a ON f.ArrivalAirportID = a.AirportID
6 GROUP BY c.CustomerID, a.Country
7 ORDER BY a.Country, c.CustomerID;

```

Result Grid			
Filter Rows: <input type="text"/>			
Export:  Wrap Cell Content:			
	CustomerID	FullName	DestinationCountry
▶	11	Robert Thompson	Australia
	17	Christopher Lewis	Australia
	19	Daniel Walker	Australia
	4	Emily Davis	KSA
	5	Ali Brown	KSA
	8	Susan Moore	KSA
	13	Charles Martinez	KSA
	14	Barbara Robinson	KSA
	17	Christopher Lewis	KSA
	2	Jane Smith	Palestine
	8	Susan Moore	Palestine
	10	Maryam Martin	Palestine
	13	Charles Martinez	Palestine
	19	Daniel Walker	Palestine
	20	Nancy Hall	Palestine
	1	John Doe	Turkey

```

1 • SELECT c.CustomerID, c.FullName, a.Country AS DestinationCountry
2 FROM Customer c
3 JOIN Booking b ON c.CustomerID = b.CustomerID
4 JOIN Flight f ON b.FlightID = f.FlightID
5 JOIN Airport a ON f.ArrivalAirportID = a.AirportID
6 GROUP BY c.CustomerID, a.Country
7 ORDER BY a.Country, c.CustomerID;

```

Result Grid			
Filter Rows: <input type="text"/>			
Export:  Wrap Cell Content:			
	CustomerID	FullName	DestinationCountry
	2	Jane Smith	Palestine
	8	Susan Moore	Palestine
	10	Maryam Martin	Palestine
	13	Charles Martinez	Palestine
	19	Daniel Walker	Palestine
	20	Nancy Hall	Palestine
	1	John Doe	Turkey
	3	Mike Johnson	Turkey
	4	Emily Davis	Turkey
	6	Linda White	Turkey
	7	David Taylor	Turkey
	9	James Harris	Turkey
	12	Patricia Garcia	Turkey
	15	Thomas Clark	Turkey
	16	Jessica Rodriguez	Turkey
	18	Sarah Hall	Turkey

```

1 • SELECT f.flightID, f.FlightNumber, COUNT(s.SeatNumber) AS AvailableSeats
2     FROM Flight f
3     JOIN Seats s ON f.FlightID = s.FlightID
4     WHERE s.IsAvailable = TRUE
5     GROUP BY f.FlightID;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
FlightID	FlightNumber	AvailableSeats	
1	AU1001	8	
2	TK1002	7	
3	SA1003	9	
4	PL1004	7	
5	AU1005	9	
6	TK1006	6	
7	SA1007	9	
8	PL1008	10	
9	AU1009	10	
10	TK1010	10	
11	SA1011	10	
12	AU1012	7	
13	TK1013	7	
14	PL1014	7	
15	SA1015	9	

```

1 • SELECT c.CustomerID, c.FullName,
2         COUNT(b.BookingID) AS TotalBookings,
3         (SELECT SUM(p.Amount)
4          FROM Payment p
5          JOIN Booking b2 ON p.BookingID = b2.BookingID
6          WHERE b2.CustomerID = c.CustomerID) AS TotalPayments
7     FROM Customer c
8     JOIN Booking b ON c.CustomerID = b.CustomerID
9     GROUP BY c.CustomerID
10    ORDER BY TotalBookings DESC
11    LIMIT 1;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
CustomerID	FullName	TotalBookings	TotalPayments	
4	Emily Davis	2	375.00	