

Airport Operations

Problem Statement

You are working for an airport management company that needs to analyze and manage various aspects of airport operations. The company has several databases containing information about flights, terminals, gates, passengers, and staff. Your task is to write SQL queries to solve various problems related to airport operations.

Database Schema

1. Airports

- Airport_ID (INT, Primary Key)
- Airport_Name (VARCHAR(100))
- Airport_City (VARCHAR(100))
- Airport_Country (VARCHAR(100))

2. Terminals

- Terminal_ID (INT, Primary Key)
- Airport_ID (INT, Foreign Key referencing Airport)
- Terminal_Name (VARCHAR(100))
- Terminal_Capacity (INT)

3. Gates

- Gate_ID (INT, Primary Key)
- Terminal_ID (INT, Foreign Key referencing Terminal)
- Gate_Number (VARCHAR(10))
- Gate_Capacity (INT)

4. Flights

- Flight_ID (INT, Primary Key)
- Flight_Number (VARCHAR(10))
- Departure_Airport_ID (INT, Foreign Key referencing Airport)
- Arrival_Airport_ID (INT, Foreign Key referencing Airport)
- Departure_Time (DATETIME)
- Arrival_Time (DATETIME)

5. Passengers

- Passenger_ID(INT, Primary Key)
- First_Name (VARCHAR(50))
- Last_Name (VARCHAR(50))
- Flight_ID (INT, Foreign Key referencing Flights)

6. Employees

- Employee_ID (INT, Primary Key)
- First_Name (VARCHAR(50))
- Last_Name (VARCHAR(50))
- Job (VARCHAR(50))
- Terminal_ID (INT, Foreign Key referencing Terminal)

Queries to Run

1. How many airports are in each country?
2. What is the total capacity of all terminals in a specific airport?
3. Which gates have the highest capacity in a particular terminal?
4. List all flights departing from a specific airport.
5. Find all flights arriving at a particular airport after a certain time.
6. How many flights are scheduled to depart from each terminal?
7. Which passengers are on a specific flight?
8. How many employees work in each terminal?
9. What is the average capacity of gates across all terminals in an airport?
10. What is the total number of passengers on all flights departing from a specific airport?.
11. Which flights have the longest duration between departure and arrival?
12. What is the departure and arrival gate for each flight?
13. Which terminal has the lowest capacity among all terminals?
14. How many flights are scheduled between two specific airports?
15. List all flights that depart and arrive on the same day.

1. Database Creation

```
1  -- Creating Airports table
2  CREATE TABLE Airports (
3      Airport_ID INT PRIMARY KEY,
4      Airport_Name VARCHAR(100),
5      Airport_City VARCHAR(100),
6      Airport_Country VARCHAR(100)
7  );
8
9  -- Creating Terminals table
10 CREATE TABLE Terminals (
11     Terminal_ID VARCHAR(10) PRIMARY KEY,
12     Airport_ID INT,
13     Terminal_Name VARCHAR(100),
14     Terminal_Capacity INT,
15     FOREIGN KEY (Airport_ID) REFERENCES Airports(Airport_ID)
16 );
17
18 -- Creating Gates table
19 CREATE TABLE Gates (
20     Gate_ID VARCHAR(10) PRIMARY KEY,
21     Terminal_ID VARCHAR(10),
22     Gate_Number VARCHAR(10),
23     Gate_Capacity INT,
24     FOREIGN KEY (Terminal_ID) REFERENCES Terminals(Terminal_ID)
25 );
26
27 -- Creating Flights table
28 CREATE TABLE Flights (
29     Flight_ID INT PRIMARY KEY,
30     Flight_Number VARCHAR(10),
31     Departure_Airport_ID INT,
32     Arrival_Airport_ID INT,
33     Departure_Time DATETIME,
34     Arrival_Time DATETIME,
35     FOREIGN KEY (Departure_Airport_ID) REFERENCES Airports(Airport_ID),
36     FOREIGN KEY (Arrival_Airport_ID) REFERENCES Airports(Airport_ID)
37 );
38
```

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39  -- Creating Passenger table
40  CREATE TABLE Passengers (
41      Passenger_ID INT PRIMARY KEY,
42      First_Name VARCHAR(50),
43      Last_Name VARCHAR(50),
44      Flight_ID INT,
45      FOREIGN KEY (Flight_ID) REFERENCES Flights(Flight_ID)
46  );
47
48  -- Creating Employees table
49  CREATE TABLE Employees (
50      Employee_ID INT PRIMARY KEY,
51      First_Name VARCHAR(50),
52      Last_Name VARCHAR(50),
53      Job VARCHAR(50),
54      Terminal_ID VARCHAR(10),
55      FOREIGN KEY (Terminal_ID) REFERENCES Terminals(Terminal_ID)
56  );

-- Adding data to the Airports table
INSERT INTO Airports (Airport_ID, Airport_Name, Airport_City, Airport_Country)
VALUES
(1001, 'John F Kennedy International Airport', 'New York City', 'United States'),
(1002, 'Heathrow Airport', 'London', 'England'),
(1003, 'Charles de Gaulle Airport', 'Paris', 'France'),
(1004, 'Sydney Airport', 'Sydney', 'Australia'),
(1005, 'Tokyo Haneda Airport', 'Tokyo', 'Japan'),
(1006, 'Dubai International Airport', 'Dubai', 'United Arab Emirates'),
(1007, 'Singapore Changi Airport', 'Changi', 'Singapore'),
(1008, 'Hong Kong International Airport', 'Chek Lap Kok', 'Hong Kong'),
(1009, 'Los Angeles International Airport', 'Los Angeles', 'United States'),
(1010, 'Toronto Pearson International Airport', 'Toronto', 'Canada');

SELECT * FROM Airports;

```

	Airport_ID ▾	Airport_Name ▾	Airport_City ▾	Airport_Country ▾
1	1001	John F Kennedy International Airport	New York City	United States
2	1002	Heathrow Airport	London	England
3	1003	Charles de Gaulle Airport	Paris	France
4	1004	Sydeny Airport	Sydney	Australia
5	1005	Tokyo Haneda Airport	Tokyo	Japan
6	1006	Dubai International Airport	Dubai	United Arab Emirates
7	1007	Singapore Changi Airport	Changi	Singapore
8	1008	Hong Kong International Airport	Chek Lap Kok	Hong Kong
9	1009	Los Angeles International Airport	Los Angeles	United States
10	1010	Toronto Pearsons International Airport	Toronto	Canada

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73
74 --Adding Data into the terminals table
75 INSERT INTO Terminals (Terminal_ID,Airport_ID,Terminal_Name,Terminal_Capacity)
76 VALUES
77 ('JFK_T1',1001,'JFK Terminal 1',5000),
78 ('JFK_T2',1001,'JFK Terminal 2',4000),
79 ('JFK_T3',1001,'JFK Terminal 3',6000),
80 ('JFK_T4',1001,'JFK Terminal 4',5000),
81
82 ('LHR_T1',1002,'LHR Terminal 1',7000),
83 ('LHR_T2',1002,'LHR Terminal 2',3000),
84 ('LHR_T3',1002,'LHR Terminal 3',5000),
85 ('LHR_T4',1002,'LHR Terminal 4',7500),
86
87 ('CDG_T1',1003,'CDG Terminal 1',5500),
88 ('CDG_T2',1003,'CDG Terminal 2',4400),
89 ('CDG_T3',1003,'CDG Terminal 3',8000),
90 ('CDG_T4',1003,'CDG Terminal 4',5355),
91
92 ('SYD_T1',1004,'SYD Terminal 1',5500),
93 ('SYD_T2',1004,'SYD Terminal 2',4000),
94 ('SYD_T3',1004,'SYD Terminal 3',4400),
95 ('SYD_T4',1004,'SYD Terminal 4',3400),
96
97 ('HND_T1',1005,'HND Terminal 1',3400),
98 ('HND_T2',1005,'HND Terminal 2',2200),
99 ('HND_T3',1005,'HND Terminal 3',2000),
100 ('HND_T4',1005,'HND Terminal 4',3200),
101
102 ('DBX_T1',1006,'DBX Terminal 1',7000),
103 ('DBX_T2',1006,'DBX Terminal 2',8000),
104 ('DBX_T3',1006,'DBX Terminal 3',7700),
105 ('DBX_T4',1006,'DBX Terminal 4',5600),

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100
107 ('SIN_T1',1007,'SIN Terminal 1',5000),
108 ('SIN_T2',1007,'SIN Terminal 2',5000),
109 ('SIN_T3',1007,'SIN Terminal 3',5000),
110 ('SIN_T4',1007,'SIN Terminal 4',5000),
111
112 ('HKG_T1',1008,'HKG Terminal 1',2300),
113 ('HKG_T2',1008,'HKG Terminal 2',1500),
114 ('HKG_T3',1008,'HKG Terminal 3',4000),
115 ('HKG_T4',1008,'HKG Terminal 4',3400),
116
117 ('LAX_T1',1009,'LAX Terminal 1',5000),
118 ('LAX_T2',1009,'LAX Terminal 2',6000),
119 ('LAX_T3',1009,'LAX Terminal 3',7000),
120 ('LAX_T4',1009,'LAX Terminal 4',8000),
121
122 ('YYZ_T1',1010,'YYZ Terminal 1',5000),
123 ('YYZ_T2',1010,'YYZ Terminal 2',4000),
124 ('YYZ_T3',1010,'YYZ Terminal 3',3000),
125 ('YYZ_T4',1010,'YYZ Terminal 4',2000);
```

```
SELECT * FROM Terminals;
```

	Terminal_ID ▾	Airport_ID ▾	Terminal_Name ▾	Terminal_Capacity ▾
1	CDG_T1	1003	CDG Terminal 1	5500
2	CDG_T2	1003	CDG Terminal 2	4400
3	CDG_T3	1003	CDG Terminal 3	8000
4	CDG_T4	1003	CDG Terminal 4	5355
5	DBX_T1	1006	DBX Terminal 1	7000
6	DBX_T2	1006	DBX Terminal 2	8000
7	DBX_T3	1006	DBX Terminal 3	7700
8	DBX_T4	1006	DBX Terminal 4	5600
9	HKG_T1	1008	HKG Terminal 1	2300
10	HKG_T2	1008	HKG Terminal 2	1500
11	HKG_T3	1008	HKG Terminal 3	4000
12	HKG_T4	1008	HKG Terminal 4	3400
13	HND_T1	1005	HND Terminal 1	3400
14	HND_T2	1005	HND Terminal 2	2200
15	HND_T3	1005	HND Terminal 3	2000
16	HND_T4	1005	HND Terminal 4	3200
17	JFK_T1	1001	JFK Terminal 1	5000
18	JFK_T2	1001	JFK Terminal 2	4000
19	JFK_T3	1001	JFK Terminal 3	6000
20	JFK_T4	1001	JFK Terminal 4	5000
21	LAX_T1	1009	LAX Terminal 1	5000
22	LAX_T2	1009	LAX Terminal 2	6000
23	LAX_T3	1009	LAX Terminal 3	7000
24	LAX_T4	1009	LAX Terminal 4	8000
25	LHR_T1	1002	LHR Terminal 1	7000
26	LHR_T2	1002	LHR Terminal 2	3000
27	LHR_T3	1002	LHR Terminal 3	5000
28	LHR_T4	1002	LHR Terminal 4	7500

29	SIN_T1	1007	SIN Terminal 1	5000
30	SIN_T2	1007	SIN Terminal 2	5000
31	SIN_T3	1007	SIN Terminal 3	5000
32	SIN_T4	1007	SIN Terminal 4	5000
33	SYD_T1	1004	SYD Terminal 1	5500
34	SYD_T2	1004	SYD Terminal 2	4000
35	SYD_T3	1004	SYD Terminal 3	4400
36	SYD_T4	1004	SYD Terminal 4	3400
37	YYZ_T1	1010	YYZ Terminal 1	5000
38	YYZ_T2	1010	YYZ Terminal 2	4000
39	YYZ_T3	1010	YYZ Terminal 3	3000
40	YYZ_T4	1010	YYZ Terminal 4	2000

```
132  --Adding data to the gates tables
133  INSERT INTO Gates (Gate_ID,Terminal_ID,Gate_Number,Gate_Capacity)
134  VALUES
135  ('JFK_T1_G1','JFK_T1','G1',1666),
136  ('JFK_T1_G2','JFK_T1','G2',1666),
137  ('JFK_T1_G3','JFK_T1','G3',1667),
138
139  ('JFK_T2_G1','JFK_T2','G1',1333),
140  ('JFK_T2_G2','JFK_T2','G2',1333),
141  ('JFK_T2_G3','JFK_T2','G3',1334),
142
143  ('JFK_T3_G1','JFK_T3','G1',2000),
144  ('JFK_T3_G2','JFK_T3','G2',2000),
145  ('JFK_T3_G3','JFK_T3','G3',2000),
146
147  ('JFK_T4_G1','JFK_T4','G1',1666),
148  ('JFK_T4_G2','JFK_T4','G2',1667),
149  ('JFK_T4_G3','JFK_T4','G3',1666),
150
151  ('LHR_T1_G1','LHR_T1','G1',2334),
152  ('LHR_T1_G2','LHR_T1','G2',2333),
153  ('LHR_T1_G3','LHR_T1','G3',2333),
154
155  ('LHR_T2_G1','LHR_T2','G1',1000),
156  ('LHR_T2_G2','LHR_T2','G2',1000),
157  ('LHR_T2_G3','LHR_T2','G3',1000),
158
159  ('LHR_T3_G1','LHR_T3','G1',1666),
160  ('LHR_T3_G2','LHR_T3','G2',1664),
161  ('LHR_T3_G3','LHR_T3','G3',1666),
162
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163 ('LHR_T4_G1', 'LHR_T4', 'G1', 2500),
164 ('LHR_T4_G2', 'LHR_T4', 'G2', 2500),
165 ('LHR_T4_G3', 'LHR_T4', 'G3', 2500),
166
167 ('CDG_T1_G1', 'CDG_T1', 'G1', 1833),
168 ('CDG_T1_G2', 'CDG_T1', 'G2', 1833),
169 ('CDG_T1_G3', 'CDG_T1', 'G3', 1833),
170
171 ('CDG_T2_G1', 'CDG_T2', 'G1', 1466),
172 ('CDG_T2_G2', 'CDG_T2', 'G2', 1467),
173 ('CDG_T2_G3', 'CDG_T2', 'G3', 1466),
174
175 ('CDG_T3_G1', 'CDG_T3', 'G1', 2666),
176 ('CDG_T3_G2', 'CDG_T3', 'G2', 2667),
177 ('CDG_T3_G3', 'CDG_T3', 'G3', 2666),
178
179 ('CDG_T4_G1', 'CDG_T4', 'G1', 1785),
180 ('CDG_T4_G2', 'CDG_T4', 'G2', 1785),
181 ('CDG_T4_G3', 'CDG_T4', 'G3', 1785),
182
183 ('SYD_T1_G1', 'SYD_T1', 'G1', 1833),
184 ('SYD_T1_G2', 'SYD_T1', 'G2', 1833),
185 ('SYD_T1_G3', 'SYD_T1', 'G3', 1833),
186
187 ('SYD_T2_G1', 'SYD_T2', 'G1', 1333),
188 ('SYD_T2_G2', 'SYD_T2', 'G2', 1333),
189 ('SYD_T2_G3', 'SYD_T2', 'G3', 1333),
190
191 ('SYD_T3_G1', 'SYD_T3', 'G1', 1466),
192 ('SYD_T3_G2', 'SYD_T3', 'G2', 1466),
193 ('SYD_T3_G3', 'SYD_T3', 'G3', 1467),
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195 ('SYD_T4_G1', 'SYD_T4', 'G1', 1133),
196 ('SYD_T4_G2', 'SYD_T4', 'G2', 1134),
197 ('SYD_T4_G3', 'SYD_T4', 'G3', 1133),
198
199 ('HND_T1_G1', 'HND_T1', 'G1', 1133),
200 ('HND_T1_G2', 'HND_T1', 'G2', 1133),
201 ('HND_T1_G3', 'HND_T1', 'G3', 1134),
202
203 ('HND_T2_G1', 'HND_T2', 'G1', 733),
204 ('HND_T2_G2', 'HND_T2', 'G2', 733),
205 ('HND_T2_G3', 'HND_T2', 'G3', 734),
206
207 ('HND_T3_G1', 'HND_T3', 'G1', 666),
208 ('HND_T3_G2', 'HND_T3', 'G2', 666),
209 ('HND_T3_G3', 'HND_T3', 'G3', 667),
210
211 ('HND_T4_G1', 'HND_T4', 'G1', 1067),
212 ('HND_T4_G2', 'HND_T4', 'G2', 1066),
213 ('HND_T4_G3', 'HND_T4', 'G3', 1066),
214
215 ('DBX_T1_G1', 'DBX_T1', 'G1', 2333),
216 ('DBX_T1_G2', 'DBX_T1', 'G2', 2333),
217 ('DBX_T1_G3', 'DBX_T1', 'G3', 2334),
218
219 ('DBX_T2_G1', 'DBX_T2', 'G1', 2666),
220 ('DBX_T2_G2', 'DBX_T2', 'G2', 2666),
221 ('DBX_T2_G3', 'DBX_T2', 'G3', 2667),
222
223 ('DBX_T3_G1', 'DBX_T3', 'G1', 2566),
224 ('DBX_T3_G2', 'DBX_T3', 'G2', 2566),
225 ('DBX_T3_G3', 'DBX_T3', 'G3', 2567),
226
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```
227 ('DBX_T4_G1', 'DBX_T4', 'G1', 1866),
228 ('DBX_T4_G2', 'DBX_T4', 'G2', 1866),
229 ('DBX_T4_G3', 'DBX_T4', 'G3', 1866),
230
231 ('SIN_T1_G1', 'SIN_T1', 'G1', 1666),
232 ('SIN_T1_G2', 'SIN_T1', 'G2', 1666),
233 ('SIN_T1_G3', 'SIN_T1', 'G3', 1667),
234
235 ('SIN_T2_G1', 'SIN_T2', 'G1', 1667),
236 ('SIN_T2_G2', 'SIN_T2', 'G2', 1666),
237 ('SIN_T2_G3', 'SIN_T2', 'G3', 1666),
238
239 ('SIN_T3_G1', 'SIN_T3', 'G1', 1666),
240 ('SIN_T3_G2', 'SIN_T3', 'G2', 1667),
241 ('SIN_T3_G3', 'SIN_T3', 'G3', 1666),
242
243 ('SIN_T4_G1', 'SIN_T4', 'G1', 1666),
244 ('SIN_T4_G2', 'SIN_T4', 'G2', 1666),
245 ('SIN_T4_G3', 'SIN_T4', 'G3', 1667),
246
247 ('HKG_T1_G1', 'HKG_T1', 'G1', 767),
248 ('HKG_T1_G2', 'HKG_T1', 'G2', 766),
249 ('HKG_T1_G3', 'HKG_T1', 'G3', 766),
250
251 ('HKG_T2_G1', 'HKG_T2', 'G1', 500),
252 ('HKG_T2_G2', 'HKG_T2', 'G2', 500),
253 ('HKG_T2_G3', 'HKG_T2', 'G3', 500),
254
255 ('HKG_T3_G1', 'HKG_T3', 'G1', 1333),
256 ('HKG_T3_G2', 'HKG_T3', 'G2', 1337),
257 ('HKG_T3_G3', 'HKG_T3', 'G3', 1333),
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259 ('HKG_T4_G1', 'HKG_T4', 'G1', 1133),
260 ('HKG_T4_G2', 'HKG_T4', 'G2', 1134),
261 ('HKG_T4_G3', 'HKG_T4', 'G3', 1133),
262
263 ('LAX_T1_G1', 'LAX_T1', 'G1', 1667),
264 ('LAX_T1_G2', 'LAX_T1', 'G2', 1666),
265 ('LAX_T1_G3', 'LAX_T1', 'G3', 1666),
266
267 ('LAX_T2_G1', 'LAX_T2', 'G1', 2000),
268 ('LAX_T2_G2', 'LAX_T2', 'G2', 2000),
269 ('LAX_T2_G3', 'LAX_T2', 'G3', 2000),
270
271 ('LAX_T3_G1', 'LAX_T3', 'G1', 2333),
272 ('LAX_T3_G2', 'LAX_T3', 'G2', 2333),
273 ('LAX_T3_G3', 'LAX_T3', 'G3', 2333),
274
275 ('LAX_T4_G1', 'LAX_T4', 'G1', 2666),
276 ('LAX_T4_G2', 'LAX_T4', 'G2', 2667),
277 ('LAX_T4_G3', 'LAX_T4', 'G3', 2666),
278
279 ('YYZ_T1_G1', 'YYZ_T1', 'G1', 1833),
280 ('YYZ_T1_G2', 'YYZ_T1', 'G2', 1833),
281 ('YYZ_T1_G3', 'YYZ_T1', 'G3', 1833),
282
283 ('YYZ_T2_G1', 'YYZ_T2', 'G1', 1667),
284 ('YYZ_T2_G2', 'YYZ_T2', 'G2', 1666),
285 ('YYZ_T2_G3', 'YYZ_T2', 'G3', 1666),
286
287 ('YYZ_T3_G1', 'YYZ_T3', 'G1', 1333),
288 ('YYZ_T3_G2', 'YYZ_T3', 'G2', 1333),
289 ('YYZ_T3_G3', 'YYZ_T3', 'G3', 1334),

291 ('YYZ_T4_G1', 'YYZ_T4', 'G1', 667),
292 ('YYZ_T4_G2', 'YYZ_T4', 'G2', 666),
293 ('YYZ_T4_G3', 'YYZ_T4', 'G3', 666);

```

```

SELECT * FROM Gates;

```

	Gate_ID ▾	Terminal_ID ▾	Gate_Number ▾	Gate_Capacity ▾
1	CDG_T1_G1	CDG_T1	G1	1833
2	CDG_T1_G2	CDG_T1	G2	1833
3	CDG_T1_G3	CDG_T1	G3	1833
4	CDG_T2_G1	CDG_T2	G1	1466
5	CDG_T2_G2	CDG_T2	G2	1467
6	CDG_T2_G3	CDG_T2	G3	1466
7	CDG_T3_G1	CDG_T3	G1	2666
8	CDG_T3_G2	CDG_T3	G2	2667
9	CDG_T3_G3	CDG_T3	G3	2666
10	CDG_T4_G1	CDG_T4	G1	1785
11	CDG_T4_G2	CDG_T4	G2	1785
12	CDG_T4_G3	CDG_T4	G3	1785
13	DBX_T1_G1	DBX_T1	G1	2333
14	DBX_T1_G2	DBX_T1	G2	2333
15	DBX_T1_G3	DBX_T1	G3	2334
16	DBX_T2_G1	DBX_T2	G1	2666
17	DBX_T2_G2	DBX_T2	G2	2666
18	DBX_T2_G3	DBX_T2	G3	2667
19	DBX_T3_G1	DBX_T3	G1	2566

20	DBX_T3_G2	DBX_T3	G2	2566
21	DBX_T3_G3	DBX_T3	G3	2567
22	DBX_T4_G1	DBX_T4	G1	1866
23	DBX_T4_G2	DBX_T4	G2	1866
24	DBX_T4_G3	DBX_T4	G3	1866
25	HKG_T1_G1	HKG_T1	G1	767
26	HKG_T1_G2	HKG_T1	G2	766
27	HKG_T1_G3	HKG_T1	G3	766
28	HKG_T2_G1	HKG_T2	G1	500
29	HKG_T2_G2	HKG_T2	G2	500
30	HKG_T2_G3	HKG_T2	G3	500
31	HKG_T3_G1	HKG_T3	G1	1333
32	HKG_T3_G2	HKG_T3	G2	1337
33	HKG_T3_G3	HKG_T3	G3	1333
34	HKG_T4_G1	HKG_T4	G1	1133
35	HKG_T4_G2	HKG_T4	G2	1134
36	HKG_T4_G3	HKG_T4	G3	1133
37	HND_T1_G1	HND_T1	G1	1133
38	HND_T1_G2	HND_T1	G2	1133
39	HND_T1_G3	HND_T1	G3	1134

40	HND_T2_G1	HND_T2	G1	733
41	HND_T2_G2	HND_T2	G2	733
42	HND_T2_G3	HND_T2	G3	734
43	HND_T3_G1	HND_T3	G1	666
44	HND_T3_G2	HND_T3	G2	666
45	HND_T3_G3	HND_T3	G3	667
46	HND_T4_G1	HND_T4	G1	1067
47	HND_T4_G2	HND_T4	G2	1066
48	HND_T4_G3	HND_T4	G3	1066
49	JFK_T1_G1	JFK_T1	G1	1666
50	JFK_T1_G2	JFK_T1	G2	1666
51	JFK_T1_G3	JFK_T1	G3	1667
52	JFK_T2_G1	JFK_T2	G1	1333
53	JFK_T2_G2	JFK_T2	G2	1333
54	JFK_T2_G3	JFK_T2	G3	1334
55	JFK_T3_G1	JFK_T3	G1	2000
56	JFK_T3_G2	JFK_T3	G2	2000
57	JFK_T3_G3	JFK_T3	G3	2000
58	JFK_T4_G1	JFK_T4	G1	1666

58	JFK_T4_G1	JFK_T4	G1	1667
59	JFK_T4_G2	JFK_T4	G2	1667
60	JFK_T4_G3	JFK_T4	G3	1666
61	LAX_T1_G1	LAX_T1	G1	1667
62	LAX_T1_G2	LAX_T1	G2	1666
63	LAX_T1_G3	LAX_T1	G3	1666
64	LAX_T2_G1	LAX_T2	G1	2000
65	LAX_T2_G2	LAX_T2	G2	2000
66	LAX_T2_G3	LAX_T2	G3	2000
67	LAX_T3_G1	LAX_T3	G1	2333
68	LAX_T3_G2	LAX_T3	G2	2333
69	LAX_T3_G3	LAX_T3	G3	2333
70	LAX_T4_G1	LAX_T4	G1	2666
71	LAX_T4_G2	LAX_T4	G2	2667
72	LAX_T4_G3	LAX_T4	G3	2666
73	LHR_T1_G1	LHR_T1	G1	2334
74	LHR_T1_G2	LHR_T1	G2	2333
75	LHR_T1_G3	LHR_T1	G3	2333
76	LHR_T2_G1	LHR_T2	G1	1000
77	LHR_T2_G2	LHR_T2	G2	1000

78	LHR_T2_G3	LHR_T2	G3	1000
79	LHR_T3_G1	LHR_T3	G1	1666
80	LHR_T3_G2	LHR_T3	G2	1664
81	LHR_T3_G3	LHR_T3	G3	1666
82	LHR_T4_G1	LHR_T4	G1	2500
83	LHR_T4_G2	LHR_T4	G2	2500
84	LHR_T4_G3	LHR_T4	G3	2500
85	SIN_T1_G1	SIN_T1	G1	1666
86	SIN_T1_G2	SIN_T1	G2	1666
87	SIN_T1_G3	SIN_T1	G3	1667
88	SIN_T2_G1	SIN_T2	G1	1667
89	SIN_T2_G2	SIN_T2	G2	1666
90	SIN_T2_G3	SIN_T2	G3	1666
91	SIN_T3_G1	SIN_T3	G1	1666
92	SIN_T3_G2	SIN_T3	G2	1667
93	SIN_T3_G3	SIN_T3	G3	1666
94	SIN_T4_G1	SIN_T4	G1	1666
95	SIN_T4_G2	SIN_T4	G2	1666
96	SIN_T4_G3	SIN_T4	G3	1667

97	SYD_T1_G1	SYD_T1	G1	1833
98	SYD_T1_G2	SYD_T1	G2	1833
99	SYD_T1_G3	SYD_T1	G3	1833
100	SYD_T2_G1	SYD_T2	G1	1333
101	SYD_T2_G2	SYD_T2	G2	1333
102	SYD_T2_G3	SYD_T2	G3	1333
103	SYD_T3_G1	SYD_T3	G1	1466
104	SYD_T3_G2	SYD_T3	G2	1466
105	SYD_T3_G3	SYD_T3	G3	1467
106	SYD_T4_G1	SYD_T4	G1	1133
107	SYD_T4_G2	SYD_T4	G2	1134
108	SYD_T4_G3	SYD_T4	G3	1133
109	YYZ_T1_G1	YYZ_T1	G1	1833
110	YYZ_T1_G2	YYZ_T1	G2	1833
111	YYZ_T1_G3	YYZ_T1	G3	1833
112	YYZ_T2_G1	YYZ_T2	G1	1667
113	YYZ_T2_G2	YYZ_T2	G2	1666
114	YYZ_T2_G3	YYZ_T2	G3	1666
115	YYZ_T3_G1	YYZ_T3	G1	1333
116	YYZ_T3_G2	YYZ_T3	G2	1333
117	YYZ_T3_G3	YYZ_T3	G3	1334
118	YYZ_T4_G1	YYZ_T4	G1	667
119	YYZ_T4_G2	YYZ_T4	G2	666
120	YYZ_T4_G3	YYZ_T4	G3	666

```

295 -- Adding data to the flights table
296 INSERT INTO Flights (Flight_ID, Flight_Number, Departure_Airport_ID, Arrival_Airport_ID, Departure_Time, Arrival_Time, Departure_Gate_ID, Arrival_Gate_ID)
297 VALUES
298 (1, 'AA1423', 1001, 1005, '2024-01-04 08:00:00', '2024-01-05 22:00:00', 'JFK_T1_G3', 'HND_T4_G2'),
299 (2, 'DL5682', 1009, 1001, '2024-01-04 15:45:00', '2024-01-04 21:45:00', 'LAX_T2_G1', 'JFK_T2_G3'),
300 (3, 'UA9356', 1008, 1003, '2024-01-05 20:00:00', '2024-01-06 09:00:00', 'HKG_T3_G3', 'CDG_T3_G2'),
301 (4, 'BA2987', 1002, 1006, '2024-01-06 09:15:00', '2024-01-06 17:15:00', 'LHR_T2_G1', 'DBX_T3_G2'),
302 (5, 'LH4639', 1010, 1005, '2024-01-06 05:00:00', '2024-01-06 08:00:00', 'YYZ_T4_G2', 'HND_T1_G2'),
303 (6, 'AF7612', 1003, 1002, '2024-01-06 01:00:00', '2024-01-06 02:00:00', 'CDG_T2_G1', 'LHR_T3_G1'),
304 (7, 'AC1328', 1001, 1007, '2024-01-07 10:00:00', '2024-01-08 04:00:00', 'JFK_T2_G1', 'SIN_T3_G2'),
305 (8, 'EK2150', 1004, 1009, '2024-01-07 16:00:00', '2024-01-07 10:00:00', 'SYD_T3_G3', 'LAX_T1_G2'),
306 (9, 'SQ9762', 1007, 1005, '2024-01-08 07:00:00', '2024-01-08 14:00:00', 'SIN_T1_G3', 'HND_T3_G3'),
307 (10, 'CX8849', 1009, 1002, '2024-01-08 01:00:00', '2024-01-08 14:00:00', 'LAX_T1_G3', 'LHR_T4_G1'),
308 (11, 'QF6021', 1010, 1004, '2024-01-08 19:00:00', '2024-01-10 17:00:00', 'YYZ_T1_G2', 'SYD_T3_G3'),
309 (12, 'KL4273', 1002, 1001, '2024-01-10 00:00:00', '2024-01-10 08:00:00', 'LHR_T2_G3', 'JFK_T1_G3'),
310 (13, 'NH8756', 1003, 1004, '2024-01-10 09:30:00', '2024-01-11 07:30:00', 'CDG_T1_G2', 'SYD_T3_G2'),
311 (14, 'IB3172', 1005, 1006, '2024-01-11 08:20:00', '2024-01-11 18:20:00', 'HND_T4_G1', 'DBX_T3_G3'),
312 (15, 'TK1985', 1007, 1008, '2024-01-11 15:25:00', '2024-01-11 19:25:00', 'SIN_T1_G1', 'HKG_T1_G2'),
313 (16, 'VA6532', 1009, 1010, '2024-01-12 11:30:00', '2024-01-12 16:30:00', 'LAX_T1_G2', 'YYZ_T3_G2'),
314 (17, 'AZ6051', 1010, 1001, '2024-01-12 4:30:00', '2024-01-12 05:30:00', 'YYZ_T3_G3', 'JFK_T4_G1'),
315 (18, 'JL4051', 1009, 1002, '2024-01-12 12:45:00', '2024-01-13 01:45:00', 'LAX_T4_G2', 'LHR_T3_G3'),
316 (19, 'OR8276', 1008, 1003, '2024-01-13 2:00:00', '2024-01-13 15:00:00', 'HKG_T1_G1', 'CDG_T3_G2'),
317 (20, 'ET762', 1007, 1004, '2024-01-13 19:25:00', '2024-01-14 03:25:00', 'SIN_T1_G3', 'SYD_T4_G2');
318
319 SELECT * FROM Flights;

```

	Flight_ID	Flight_Number	Departure_Airport_ID	Arrival_Airport_ID	Departure_Time	Arrival_Time	Departure_Gate_ID	Arrival_Gate_ID
1	1	AA1423	1001	1005	2024-01-04 08:00:00.000	2024-01-05 22:00:00.000	JFK_T1_G3	HND_T4_G2
2	2	DL5682	1009	1001	2024-01-04 15:45:00.000	2024-01-04 21:45:00.000	LAX_T2_G1	JFK_T2_G3
3	3	UA9356	1008	1003	2024-01-05 20:00:00.000	2024-01-06 09:00:00.000	HKG_T3_G3	CDG_T3_G2
4	4	BA2987	1002	1006	2024-01-06 09:15:00.000	2024-01-06 17:15:00.000	LHR_T2_G1	DBX_T3_G2
5	5	LH4639	1010	1005	2024-01-06 05:00:00.000	2024-01-06 08:00:00.000	YYZ_T4_G2	HND_T1_G2
6	6	AF7612	1003	1002	2024-01-06 01:00:00.000	2024-01-06 02:00:00.000	CDG_T2_G1	LHR_T3_G1
7	7	AC1328	1001	1007	2024-01-07 10:00:00.000	2024-01-08 04:00:00.000	JFK_T2_G1	SIN_T3_G2
8	8	EK2150	1004	1009	2024-01-07 16:00:00.000	2024-01-07 10:00:00.000	SYD_T3_G3	LAX_T1_G2
9	9	SQ9762	1007	1005	2024-01-08 07:00:00.000	2024-01-08 14:00:00.000	SIN_T1_G3	HND_T3_G3
10	10	CX8849	1009	1002	2024-01-08 01:00:00.000	2024-01-08 14:00:00.000	LAX_T1_G3	LHR_T4_G1
11	11	QF6021	1010	1004	2024-01-08 19:00:00.000	2024-01-10 17:00:00.000	YYZ_T1_G2	SYD_T3_G3
12	12	KL4273	1002	1001	2024-01-10 00:00:00.000	2024-01-10 08:00:00.000	LHR_T2_G3	JFK_T1_G3
13	13	NH8756	1003	1004	2024-01-10 09:30:00.000	2024-01-11 07:30:00.000	CDG_T1_G2	SYD_T3_G2
14	14	IB3172	1005	1006	2024-01-11 08:20:00.000	2024-01-11 18:20:00.000	HND_T4_G1	DBX_T3_G3
15	15	TK1985	1007	1008	2024-01-11 15:25:00.000	2024-01-11 19:25:00.000	SIN_T1_G1	HKG_T1_G2
16	16	VA6532	1009	1010	2024-01-12 11:30:00.000	2024-01-12 16:30:00.000	LAX_T1_G2	YYZ_T3_G2
17	17	AZ6051	1010	1001	2024-01-12 04:30:00.000	2024-01-12 05:30:00.000	YYZ_T3_G3	JFK_T4_G1
18	18	JL4051	1009	1002	2024-01-12 12:45:00.000	2024-01-13 01:45:00.000	LAX_T4_G2	LHR_T3_G3
19	19	OR8276	1008	1003	2024-01-13 02:00:00.000	2024-01-13 15:00:00.000	HKG_T1_G1	CDG_T3_G2
20	20	ET762	1007	1004	2024-01-13 19:25:00.000	2024-01-14 03:25:00.000	SIN_T1_G3	SYD_T4_G2

```

-- Insert data for the Passengers table
INSERT INTO Passengers (Passenger_ID, First_Name, Last_Name, Flight_ID)
VALUES

-- Family 1
('P1', 'John', 'Smith', 1),
('P2', 'Alice', 'Smith', 1),
('P3', 'Mike', 'Smith', 1),
('P4', 'Sarah', 'Smith', 1),

-- Family 2
('P5', 'Peter', 'Johnson', 4),
('P6', 'Linda', 'Johnson', 4),
('P7', 'Tom', 'Johnson', 4),

-- Family 3
('P8', 'James', 'Davis', 15),
('P9', 'Anna', 'Davis', 15),
('P10', 'David', 'Davis', 15),

-- Family 4
('P11', 'Robert', 'Wilson', 8),
('P12', 'Emily', 'Wilson', 8),
('P13', 'Sophia', 'Wilson', 8),
('P14', 'Lucas', 'Wilson', 8),
('P15', 'Michael', 'Wilson', 8),

-- Family 5
('P16', 'Chris', 'Brown', 20),
('P17', 'Patricia', 'Brown', 20),

-- Family 6
('P18', 'Henry', 'Taylor', 2),
('P19', 'Laura', 'Taylor', 2),
('P20', 'Jack', 'Taylor', 2),
('P21', 'Grace', 'Taylor', 2),
('P22', 'Ethan', 'Taylor', 2),

('P23', 'Charles', 'Anderson', 1),
('P24', 'Barbara', 'Thomas', 2),
('P25', 'Steven', 'Jackson', 3),
('P26', 'Paul', 'White', 4),
('P27', 'Andrew', 'Harris', 5),
('P28', 'Mark', 'Martin', 6),
('P29', 'Donald', 'Thompson', 7),
('P30', 'George', 'Garcia', 8),

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('P31', 'Edward', 'Martinez', 9),
('P32', 'Ronald', 'Robinson', 10),
('P33', 'Karen', 'Clark', 11),
('P34', 'Nancy', 'Rodriguez', 12),
('P35', 'Margaret', 'Lewis', 13),

('P36', 'Sandra', 'Lee', 14),
('P37', 'Jessica', 'Walker', 15),
('P38', 'Susan', 'Hall', 16),
('P39', 'Betty', 'Allen', 17),
('P40', 'Helen', 'Young', 18),

('P41', 'Dorothy', 'Hernandez', 19),
('P42', 'Lisa', 'King', 20),
('P43', 'Nancy', 'Wright', 14),
('P44', 'Karen', 'Lopez', 6),
('P45', 'Carol', 'Hill', 12),

('P46', 'Sharon', 'Scott', 7),
('P47', 'Michelle', 'Green', 13),
('P48', 'Laura', 'Adams', 3),
('P49', 'Sarah', 'Baker', 1),
('P50', 'Kimberly', 'Gonzalez', 5),

('P51', 'Deborah', 'Nelson', 11),
('P52', 'Emily', 'Carter', 18),
('P53', 'Jessica', 'Mitchell', 20),
('P54', 'Rebecca', 'Perez', 14),
('P55', 'Sharon', 'Roberts', 11),

('P56', 'Matthew', 'Turner', 10),
('P57', 'Joshua', 'Phillips', 9),
('P58', 'Brandon', 'Campbell', 8),
('P59', 'Justin', 'Parker', 7),
('P60', 'Tyler', 'Evans', 6);
```

```
SELECT * FROM Passengers;
```


	Passenger_ID	First_Name	Last_Name	Flight_ID
1	P1	John	Smith	1
2	P10	David	Davis	15
3	P11	Robert	Wilson	8
4	P12	Emily	Wilson	8
5	P13	Sophia	Wilson	8
6	P14	Lucas	Wilson	8
7	P15	Michael	Wilson	8
8	P16	Chris	Brown	20
9	P17	Patricia	Brown	20
10	P18	Henry	Taylor	2
11	P19	Laura	Taylor	2
12	P2	Alice	Smith	1
13	P20	Jack	Taylor	2
14	P21	Grace	Taylor	2
15	P22	Ethan	Taylor	2
16	P23	Charles	Anderson	1
17	P24	Barbara	Thomas	2
18	P25	Steven	Jackson	3
19	P26	Paul	White	4
20	P27	Andrew	Harris	5
21	P28	Mark	Martin	6
22	P29	Donald	Thompson	7
23	P3	Mike	Smith	1
24	P30	George	Garcia	8
25	P31	Edward	Martinez	9
26	P32	Ronald	Robinson	10
27	P33	Karen	Clark	11
28	P34	Nancy	Rodriguez	12
29	P35	Margaret	Lewis	13
30	P36	Sandra	Lee	14
31	P37	Jessica	Walker	15

38	P43	Nancy	Wright	14
39	P44	Karen	Lopez	6
40	P45	Carol	Hill	12
41	P46	Sharon	Scott	7
42	P47	Michelle	Green	13
43	P48	Laura	Adams	3
44	P49	Sarah	Baker	1
45	P5	Peter	Johnson	4
46	P50	Kimberly	Gonzalez	5
47	P51	Deborah	Nelson	11
48	P52	Emily	Carter	18
49	P53	Jessica	Mitchell	20
50	P54	Rebecca	Perez	14
51	P55	Sharon	Roberts	11
52	P56	Matthew	Turner	10
53	P57	Joshua	Phillips	9
54	P58	Brandon	Campbell	8
55	P59	Justin	Parker	7
56	P6	Linda	Johnson	4
57	P60	Tyler	Evans	6
58	P7	Tom	Johnson	4
59	P8	James	Davis	15
60	P9	Anna	Davis	15

```

403 --Adding data to the employees table
404 INSERT INTO Employees(Employee_ID,First_Name,Last_Name,Job,Terminal_ID)
405 VALUES
406 ('E1', 'John', 'Smith', 'Ground Staff', 'JFK_T1'),
407 ('E2', 'Emily', 'Johnson', 'Security Officer', 'JFK_T2'),
408 ('E3', 'Michael', 'Brown', 'Baggage Handler', 'JFK_T3'),
409 ('E4', 'Sarah', 'Davis', 'Customer Service', 'JFK_T4'),
410 ('E5', 'David', 'Miller', 'Ticketing Agent', 'LHR_T1'),
411 ('E6', 'Jessica', 'Wilson', 'Maintenance Technician', 'LHR_T2'),
412 ('E7', 'James', 'Moore', 'Janitor', 'LHR_T3'),
413 ('E8', 'Laura', 'Taylor', 'Flight Operations', 'LHR_T4'),
414 ('E9', 'Robert', 'Anderson', 'Catering Staff', 'CDG_T1'),
415 ('E10', 'Linda', 'Thomas', 'Air Traffic Controller', 'CDG_T2'),
416 ('E11', 'William', 'Smith', 'Ground Staff', 'CDG_T3'),
417 ('E12', 'Barbara', 'Johnson', 'Security Officer', 'CDG_T4'),
418 ('E13', 'Richard', 'Brown', 'Baggage Handler', 'SYD_T1'),
419 ('E14', 'Susan', 'Davis', 'Customer Service', 'SYD_T2'),
420 ('E15', 'Charles', 'Miller', 'Ticketing Agent', 'SYD_T3'),
421 ('E16', 'Karen', 'Wilson', 'Maintenance Technician', 'SYD_T4'),
422 ('E17', 'Joseph', 'Moore', 'Janitor', 'HND_T1'),
423 ('E18', 'Betty', 'Taylor', 'Flight Operations', 'HND_T2'),
424 ('E19', 'Thomas', 'Anderson', 'Catering Staff', 'HND_T3'),
425 ('E20', 'Helen', 'Thomas', 'Air Traffic Controller', 'HND_T4'),
426 ('E21', 'Christopher', 'Smith', 'Ground Staff', 'DBX_T1'),
427 ('E22', 'Donna', 'Johnson', 'Security Officer', 'DBX_T2'),
428 ('E23', 'Matthew', 'Brown', 'Baggage Handler', 'DBX_T3'),
429 ('E24', 'Sandra', 'Davis', 'Customer Service', 'DBX_T4'),
430 ('E25', 'Anthony', 'Miller', 'Ticketing Agent', 'SIN_T1'),
431 ('E26', 'Carol', 'Wilson', 'Maintenance Technician', 'SIN_T2'),
432 ('E27', 'Mark', 'Moore', 'Janitor', 'SIN_T3'),
433 ('E28', 'Ruth', 'Taylor', 'Flight Operations', 'SIN_T4'),
434 ('E29', 'Donald', 'Anderson', 'Catering Staff', 'HKG_T1'),
435 ('E30', 'Deborah', 'Thomas', 'Air Traffic Controller', 'HKG_T2'),
436 ('E31', 'George', 'Smith', 'Ground Staff', 'HKG_T3'),
437 ('E32', 'Nancy', 'Johnson', 'Security Officer', 'HKG_T4'),
438 ('E33', 'Kenneth', 'Brown', 'Baggage Handler', 'LAX_T1'),
439 ('E34', 'Karen', 'Davis', 'Customer Service', 'LAX_T2'),
440 ('E35', 'Paul', 'Miller', 'Ticketing Agent', 'LAX_T3'),
441 ('E36', 'Dorothy', 'Wilson', 'Maintenance Technician', 'LAX_T4'),
442 ('E37', 'Steven', 'Moore', 'Janitor', 'YYZ_T1'),
443 ('E38', 'Betty', 'Taylor', 'Flight Operations', 'YYZ_T2'),
444 ('E39', 'Edward', 'Anderson', 'Catering Staff', 'YYZ_T3'),
445 ('E40', 'Sharon', 'Thomas', 'Air Traffic Controller', 'YYZ_T4'),
446 ('E41', 'Brian', 'Smith', 'Ground Staff', 'JFK_T1'),
447 ('E42', 'Carol', 'Johnson', 'Security Officer', 'JFK_T2'),
448 ('E43', 'Kevin', 'Brown', 'Baggage Handler', 'JFK_T3'),
449 ('E44', 'Linda', 'Davis', 'Customer Service', 'JFK_T4'),
450 ('E45', 'Ronald', 'Miller', 'Ticketing Agent', 'LHR_T1'),
451 ('E46', 'Donna', 'Wilson', 'Maintenance Technician', 'LHR_T2'),
452 ('E47', 'Gary', 'Moore', 'Janitor', 'LHR_T3'),
453 ('E48', 'Ruth', 'Taylor', 'Flight Operations', 'LHR_T4'),
454 ('E49', 'Jerry', 'Anderson', 'Catering Staff', 'CDG_T1'),
455 ('E50', 'Deborah', 'Thomas', 'Air Traffic Controller', 'CDG_T2'),

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456 ('E51', 'Frank', 'Smith', 'Ground Staff', 'CDG_T3'),
457 ('E52', 'Barbara', 'Johnson', 'Security Officer', 'CDG_T4'),
458 ('E53', 'Jason', 'Brown', 'Baggage Handler', 'SYD_T1'),
459 ('E54', 'Sandra', 'Davis', 'Customer Service', 'SYD_T2'),
460 ('E55', 'Scott', 'Miller', 'Ticketing Agent', 'SYD_T3'),
461 ('E56', 'Karen', 'Wilson', 'Maintenance Technician', 'SYD_T4'),
462 ('E57', 'Eric', 'Moore', 'Janitor', 'HND_T1'),
463 ('E58', 'Betty', 'Taylor', 'Flight Operations', 'HND_T2'),
464 ('E59', 'Stephen', 'Anderson', 'Catering Staff', 'HND_T3'),
465 ('E60', 'Sharon', 'Thomas', 'Air Traffic Controller', 'HND_T4');
466
467
468
469 SELECT * FROM Employees;
```

	Employee_ID	First_Name	Last_Name	Job	Terminal_ID
1	E1	John	Smith	Ground Staff	JFK_T1
2	E10	Linda	Thomas	Air Traffic Controller	CDG_T2
3	E11	William	Smith	Ground Staff	CDG_T3
4	E12	Barbara	Johnson	Security Officer	CDG_T4
5	E13	Richard	Brown	Baggage Handler	SYD_T1
6	E14	Susan	Davis	Customer Service	SYD_T2
7	E15	Charles	Miller	Ticketing Agent	SYD_T3
8	E16	Karen	Wilson	Maintenance Technician	SYD_T4
9	E17	Joseph	Moore	Janitor	HND_T1
10	E18	Betty	Taylor	Flight Operations	HND_T2
11	E19	Thomas	Anderson	Catering Staff	HND_T3
12	E2	Emily	Johnson	Security Officer	JFK_T2
13	E20	Helen	Thomas	Air Traffic Controller	HND_T4
14	E21	Christopher	Smith	Ground Staff	DBX_T1
15	E22	Donna	Johnson	Security Officer	DBX_T2
16	E23	Matthew	Brown	Baggage Handler	DBX_T3
17	E24	Sandra	Davis	Customer Service	DBX_T4
18	E25	Anthony	Miller	Ticketing Agent	SIN_T1
19	E26	Carol	Wilson	Maintenance Technician	SIN_T2
20	E27	Mark	Moore	Janitor	SIN_T3
21	E28	Ruth	Taylor	Flight Operations	SIN_T4
22	E29	Donald	Anderson	Catering Staff	HKG_T1
23	E3	Michael	Brown	Baggage Handler	JFK_T3
24	E30	Deborah	Thomas	Air Traffic Controller	HKG_T2
25	E31	George	Smith	Ground Staff	HKG_T3
26	E32	Nancy	Johnson	Security Officer	HKG_T4
27	E33	Kenneth	Brown	Baggage Handler	LAX_T1
28	E34	Karen	Davis	Customer Service	LAX_T2
29	E35	Paul	Miller	Ticketing Agent	LAX_T3
30	E36	Dorothy	Wilson	Maintenance Technician	LAX_T4
31	E37	Steven	Moore	Janitor	YYZ_T1
32	E38	Betty	Taylor	Flight Operations	YYZ_T2
33	E39	Edward	Anderson	Catering Staff	YYZ_T3
34	E4	Sarah	Davis	Customer Service	JFK_T4
35	E40	Sharon	Thomas	Air Traffic Controller	YYZ_T4
36	E41	Brian	Smith	Ground Staff	JFK_T1
37	E42	Carol	Johnson	Security Officer	JFK_T2

37	E42	Carol	Johnson	Security Officer	JFK_T2
38	E43	Kevin	Brown	Baggage Handler	JFK_T3
39	E44	Linda	Davis	Customer Service	JFK_T4
40	E45	Ronald	Miller	Ticketing Agent	LHR_T1
41	E46	Donna	Wilson	Maintenance Technician	LHR_T2
42	E47	Gary	Moore	Janitor	LHR_T3
43	E48	Ruth	Taylor	Flight Operations	LHR_T4
44	E49	Jerry	Anderson	Catering Staff	CDG_T1
45	E5	David	Miller	Ticketing Agent	LHR_T1
46	E50	Deborah	Thomas	Air Traffic Controller	CDG_T2
47	E51	Frank	Smith	Ground Staff	CDG_T3
48	E52	Barbara	Johnson	Security Officer	CDG_T4
49	E53	Jason	Brown	Baggage Handler	SYD_T1
50	E54	Sandra	Davis	Customer Service	SYD_T2
51	E55	Scott	Miller	Ticketing Agent	SYD_T3
52	E56	Karen	Wilson	Maintenance Technician	SYD_T4
53	E57	Eric	Moore	Janitor	HND_T1
54	E58	Betty	Taylor	Flight Operations	HND_T2
55	E59	Stephen	Anderson	Catering Staff	HND_T3
56	E6	Jessica	Wilson	Maintenance Technician	LHR_T2
57	E60	Sharon	Thomas	Air Traffic Controller	HND_T4
58	E7	James	Moore	Janitor	LHR_T3
59	E8	Laura	Taylor	Flight Operations	LHR_T4
60	E9	Robert	Anderson	Catering Staff	CDG_T1

2. Answers to Queries

```
472 -- 1. How many airports are in each country?
473 SELECT Airport_Country, COUNT(Airport_ID) AS Number_of_Airports
474 FROM Airports
475 GROUP BY Airport_Country;
```

Results Messages

	Airport_Country	Number_of_Airports
1	Australia	1
2	Canada	1
3	England	1
4	France	1
5	Hong Kong	1
6	Japan	1
7	Singapore	1
8	United Arab Emirates	1
9	United States	2

```
477 -- 2. What is the total capacity of all terminals in eaach airport?
478 SELECT Airport_Name, SUM(Terminal_Capacity) AS Terminal_Capacity
479 FROM Airports
480 JOIN Terminals ON Airports.Airport_ID = Terminals.Airport_ID
481 GROUP BY Airport_Name;
```

Results Messages

	Airport_Name	Terminal_Capacity
1	Charles de Gaulle Airport	23255
2	Dubai International Airport	28300
3	Heathrow Airport	22500
4	Hong Kong International Airport	11200
5	John F Kennedy International Airport	20000
6	Los Angeles International Airport	26000
7	Singapore Changi Airport	20000
8	Sydeny Airport	17300
9	Tokyo Haneda Airport	10800
10	Toronto Pearsons International Airport	14000

```

491  -- 4. List all flights departing from a specific airport.
492  SELECT Flight_ID,Flight_Number,Departure_Time
493  From Flights
494  JOIN Airports ON Flights.Departure_Airport_ID = Airports.Airport_ID
495  WHERE Airport_Name = 'Singapore Changi Airport'
496

```

Results Messages

	Flight_ID	Flight_Number	Departure_Time
	9	SQ9762	2024-01-08 07:00:00.000
	15	TK1985	2024-01-11 15:25:00.000
	20	ET762	2024-01-13 19:25:00.000

```

497  -- 5. Find all flights arriving at a particular airport after a certain time.
498  SELECT Flight_Number,Departure_Airport_ID, Departure_Time, Arrival_Time
499  FROM Flights
500  JOIN Airports ON Flights.Arrival_Airport_ID = Airports.Airport_ID
501  WHERE Airport_Name = 'Tokyo Haneda Airport' AND Arrival_Time > '2024-01-05 12:00:00'
502

```

Results Messages

	Flight_Number	Departure_Airport_ID	Departure_Time	Arrival_Time
	AA1423	1001	2024-01-04 08:00:00.000	2024-01-05 22:00:00.000
	LH4639	1010	2024-01-06 05:00:00.000	2024-01-06 08:00:00.000
	SQ9762	1007	2024-01-08 07:00:00.000	2024-01-08 14:00:00.000


```

505 -- 6. How many flights are scheduled to depart from each terminal?
506 SELECT Terminals.Terminal_Name,COUNT(Flights.Flight_ID) AS Number_of_Departing_Flights
507 FROM Flights
508 JOIN Gates ON Flights.Departure_Gate_ID = Gates.Gate_ID
509 JOIN Terminals ON Gates.Terminal_ID = Terminals.Terminal_ID
510 GROUP BY Terminals.Terminal_Name;

```

Results Messages

	Terminal_Name	Number_of_Departing_Flights
1	CDG Terminal 1	1
2	CDG Terminal 2	1
3	HKG Terminal 1	1
4	HKG Terminal 3	1
5	HND Terminal 4	1
6	JFK Terminal 1	1
7	JFK Terminal 2	1
8	LAX Terminal 1	2
9	LAX Terminal 2	1
10	LAX Terminal 4	1
11	LHR Terminal 2	2
12	SIN Terminal 1	3
13	SYD Terminal 3	1
14	YYZ Terminal 1	1
15	YYZ Terminal 3	1
16	YYZ Terminal 4	1

```

511
512 -- 7. Which passengers are on a specific flight?
513 SELECT Passenger_ID, First_Name,Last_Name
514 FROM Passengers
515 WHERE Flight_ID = 15

```

Results Messages

	Passenger_ID	First_Name	Last_Name
1	P10	David	Davis
2	P37	Jessica	Walker
3	P8	James	Davis
4	P9	Anna	Davis

```

517  -- 8. How many employees work in each terminal?
518  SELECT Terminals.Terminal_Name, COUNT(Employees.Employee_ID) AS Number_of_Employees
519  FROM Employees
520  JOIN Terminals ON Employees.Terminal_ID = Terminals.Terminal_ID
521  GROUP BY Terminals.Terminal_Name;

```

Results Messages

	Terminal_Name	Number_of_Employees
1	CDG Terminal 1	2
2	CDG Terminal 2	2
3	CDG Terminal 3	2
4	CDG Terminal 4	2
5	DBX Terminal 1	1
6	DBX Terminal 2	1
7	DBX Terminal 3	1
8	DBX Terminal 4	1
9	HKG Terminal 1	1
10	HKG Terminal 2	1
11	HKG Terminal 3	1
12	HKG Terminal 4	1
13	HND Terminal 1	2
14	HND Terminal 2	2
15	HND Terminal 3	2
16	HND Terminal 4	2
17	JFK Terminal 1	2
18	JFK Terminal 2	2
19	JFK Terminal 3	2
20	JFK Terminal 4	2
21	LAX Terminal 1	1
22	LAX Terminal 2	1
23	LAX Terminal 3	1
24	LAX Terminal 4	1
25	LHR Terminal 1	2
26	LHR Terminal 2	2

27	LHR Terminal 3	2
28	LHR Terminal 4	2
29	SIN Terminal 1	1
30	SIN Terminal 2	1
31	SIN Terminal 3	1
32	SIN Terminal 4	1
33	SYD Terminal 1	2
34	SYD Terminal 2	2
35	SYD Terminal 3	2
36	SYD Terminal 4	2
37	YYZ Terminal 1	1
38	YYZ Terminal 2	1
39	YYZ Terminal 3	1
40	YYZ Terminal 4	1

```

523  -- 9. What is the average capacity of gates across all terminals in an airport?
524  SELECT Airports.Airport_Name, AVG(Gates.Gate_Capacity) AS Average_Gate_Capacity
525  FROM Gates
526  JOIN Terminals ON Gates.Terminal_ID = Terminals.Terminal_ID
527  JOIN Airports ON Terminals.Airport_ID = Airports.Airport_ID
528  GROUP BY Airports.Airport_Name;

```

Results Messages

	Airport_Name	▼	Average_Gate_Capacity	▼
1	Charles de Gaulle Airport		1937	
2	Dubai International Airport		2358	
3	Heathrow Airport		1874	
4	Hong Kong International Airport		933	
5	John F Kennedy International Airport		1666	
6	Los Angeles International Airport		2166	
7	Singapore Changi Airport		1666	
8	Sydeny Airport		1441	
9	Tokyo Haneda Airport		899	
10	Toronto Pearsons International Airport		1374	

```
530 -- 10. What is the total number of passengers on all flights departing from a specific airport?
531 SELECT Airport_Name, COUNT(Passengers.Passenger_ID) AS Total_Passengers
532 FROM Passengers
533 JOIN Flights ON Passengers.Flight_ID = Flights.Flight_ID
534 JOIN Airports AS Departure_Airports ON Flights.Departure_Airport_ID = Departure_Airports.Airport_ID
535 WHERE Departure_Airports.Airport_Name = 'Sydeny Airport'
536 GROUP BY Departure_Airports.Airport_Name;
```

Results Messages

	Airport_Name ▾	Total_Passengers ▾
1	Sydeny Airport	7

```
538 -- 11. Which flights have the longest duration between departure and arrival?
539 SELECT TOP 1 Flight_Number, Departure_Airport_ID,Departure_Time,Arrival_Airport_ID, Arrival_Time,
540 | DATEDIFF(MINUTE, Departure_Time, Arrival_Time) AS Flight_Duration
541 FROM Flights
542 ORDER BY Flight_Duration DESC;
543
544
```

Results Messages

	Flight_Number ▾	Departure_Airport_ID ▾	Departure_Time ▾	Arrival_Airport_ID ▾	Arrival_Time ▾	Flight_Duration ▾
1	QF6021	1010	2024-01-08 19:00:00.000	1004	2024-01-10 17:00:00.000	2760

```

544 -- 12. What is the departure and arrival gate for each flight?
545 SELECT Flights.Flight_Number,
546         Departure_Gates.Gate_Number AS Departure_Gate,
547         Arrival_Gates.Gate_Number AS Arrival_Gate
548 FROM Flights
549 JOIN Gates AS Departure_Gates ON Flights.Departure_Gate_ID = Departure_Gates.Gate_ID
550 JOIN Gates AS Arrival_Gates ON Flights.Arrival_Gate_ID = Arrival_Gates.Gate_ID;

```

Results Messages

	Flight_Number	Departure_Gate	Arrival_Gate
1	AA1423	G3	G2
2	DL5682	G1	G3
3	UA9356	G3	G2
4	BA2987	G1	G2
5	LH4639	G2	G2
6	AF7612	G1	G1
7	AC1328	G1	G2
8	EK2150	G3	G2
9	SQ9762	G3	G3
10	CX8849	G3	G1
11	QF6021	G2	G3
12	KL4273	G3	G3
13	NH8756	G2	G2
14	IB3172	G1	G3
15	TK1985	G1	G2
16	VA6532	G2	G2
17	AZ6051	G3	G1
18	JL4051	G2	G3
19	OR8276	G1	G2
20	ET762	G3	G2

```

551
552 -- 13. Which terminals have the lowest capacity among all terminals?
553 SELECT TOP 1 Terminal_ID, Terminal_Name, Terminal_Capacity
554 FROM Terminals
555 ORDER BY Terminal_Capacity ASC;

```

Results Messages

	Terminal_ID	Terminal_Name	Terminal_Capacity
1	HKG_T2	HKG Terminal 2	1500

```

557 -- 14. How many flights are scheduled between two specific airports?
558 SELECT COUNT(*) AS Number_of_Flights
559 FROM Flights
560 WHERE Departure_Airport_ID = 1001
561 AND Arrival_Airport_ID = 1005;

```

Results Messages

	Number_of_Flights
1	1

```

563 -- 15. List all flights that depart and arrive on the same day.
564 SELECT Flight_ID, Flight_Number, Departure_Time, Arrival_Time
565 FROM Flights
566 WHERE CAST(Departure_Time AS DATE) = CAST(Arrival_Time AS DATE);
567

```

Results Messages

	Flight_ID	Flight_Number	Departure_Time	Arrival_Time
1	2	DL5682	2024-01-04 15:45:00.000	2024-01-04 21:45:00.000
2	4	BA2987	2024-01-06 09:15:00.000	2024-01-06 17:15:00.000
3	5	LH4639	2024-01-06 05:00:00.000	2024-01-06 08:00:00.000
4	6	AF7612	2024-01-06 01:00:00.000	2024-01-06 02:00:00.000
5	8	EK2150	2024-01-07 16:00:00.000	2024-01-07 10:00:00.000
6	9	SQ9762	2024-01-08 07:00:00.000	2024-01-08 14:00:00.000
7	10	CX8849	2024-01-08 01:00:00.000	2024-01-08 14:00:00.000
8	12	KL4273	2024-01-10 00:00:00.000	2024-01-10 08:00:00.000
9	14	IB3172	2024-01-11 08:20:00.000	2024-01-11 18:20:00.000
10	15	TK1985	2024-01-11 15:25:00.000	2024-01-11 19:25:00.000
11	16	VA6532	2024-01-12 11:30:00.000	2024-01-12 16:30:00.000
12	17	AZ6051	2024-01-12 04:30:00.000	2024-01-12 05:30:00.000
13	19	OR8276	2024-01-13 02:00:00.000	2024-01-13 15:00:00.000

3. Skills Demonstrated:

- **Database Design:** Understanding and creating tables (e.g., Airports, Flights, Gates) with appropriate columns and relationships.
- **SQL Querying:** Writing SQL queries to retrieve, filter, and aggregate data from multiple tables. This includes using SELECT, JOIN, WHERE, GROUP BY, HAVING, and other SQL clauses.
- **Data Modification:** Updating data using UPDATE statements, including changing dates, modifying records, or updating specific values.
- **Foreign Key Relationships:** Defining and managing relationships between tables using foreign keys, ensuring data integrity.
- **Data Analysis:** Calculating statistics, averages, counts, and identifying patterns in the data.
- **Conditional Statements:** Using conditional statements (e.g., CASE) to update data conditionally based on specific criteria.
- **Date Functions:** Employing date functions (e.g., MONTH, YEAR, DATEDIFF) to filter or manipulate date-related data.
- **Data Integrity:** Ensuring data integrity by handling duplicate records, maintaining referential integrity, and updating data accurately.
- **Database Management:** Basic understanding of managing a relational database, including creating tables, altering data types, and managing constraints.
- **Problem Solving:** Analyzing the data requirements and formulating SQL queries to address specific questions or challenges.
- **Communication of Results:** Presenting query results clearly to answer specific questions or provide insights.
- **Project Management:** Managing tasks such as updating dates, altering data, and executing queries within the context of a specific project.