A

Project Submission Report for

Database Management Systems (UCS310)

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Submitted to:

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A Project on:

FLIGHT MANAGEMENT SYSTEM

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY,

(A DEEMED TO BE UNIVERSITY)

PATIALA, PUNJAB

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Table of Contents

1. Project Description

Domain: Flight Management System

- Flight Management System primarily deals with management of flights, flight path, flight crew, airports, and passengers. The system provides broad overview of underlying operational factors that influence the airport management.
- The database system has the data of all goods and passengers flights, commercial airports and passengers travelling through the airline.
- Airlines companies serve flights to multiple destinations and airports. So data of the flights, the crew, the capacity, the destination and departure locations alongside the passenger data is being stored.
- Every Airline is identified by an uniquely identified by an Airline ID, Airlines ID is a numeric code airline designator. Airline ID is also printed on the Air Ticket and along side the Flight Information.
- Given are 10 examples of Airlines and their IDs out of 50 Airlines stored in the Database

Airline Name	Airline ID
Singapore Airlines	1
Qantas Airways	2
Cathay Pacific	3
Emirates	4
Qatar Airways	5
ANA All Nippon Airways	6
Etihad Airways	7
EVA Air	8
Lufthansa	9
Air New Zealand	10

- Airport Data consists of the Airport's name, city, country, the terminals and the runways, this data is important in enhancing automation, and optimizing flight paths for efficiency and speed.
- Airports are uniquely identified with an Airport ID. The Airport ID is a numeric code designating many airports across the world.

- Given are 10 examples of Airports and their IDs out of 50 Airports stored in the Database

Airport Name	Airport ID
John F. Kennedy International Airport	1
Los Angeles International Airport	2
Heathrow Airport	3
Narita International Airport	4
Sydney Airport	5
Changi Airport	6
Beijing Capital International Airport	7
Dubai International Airport	8
Charles de Gaulle Airport	9
Frankfurt Airport	10

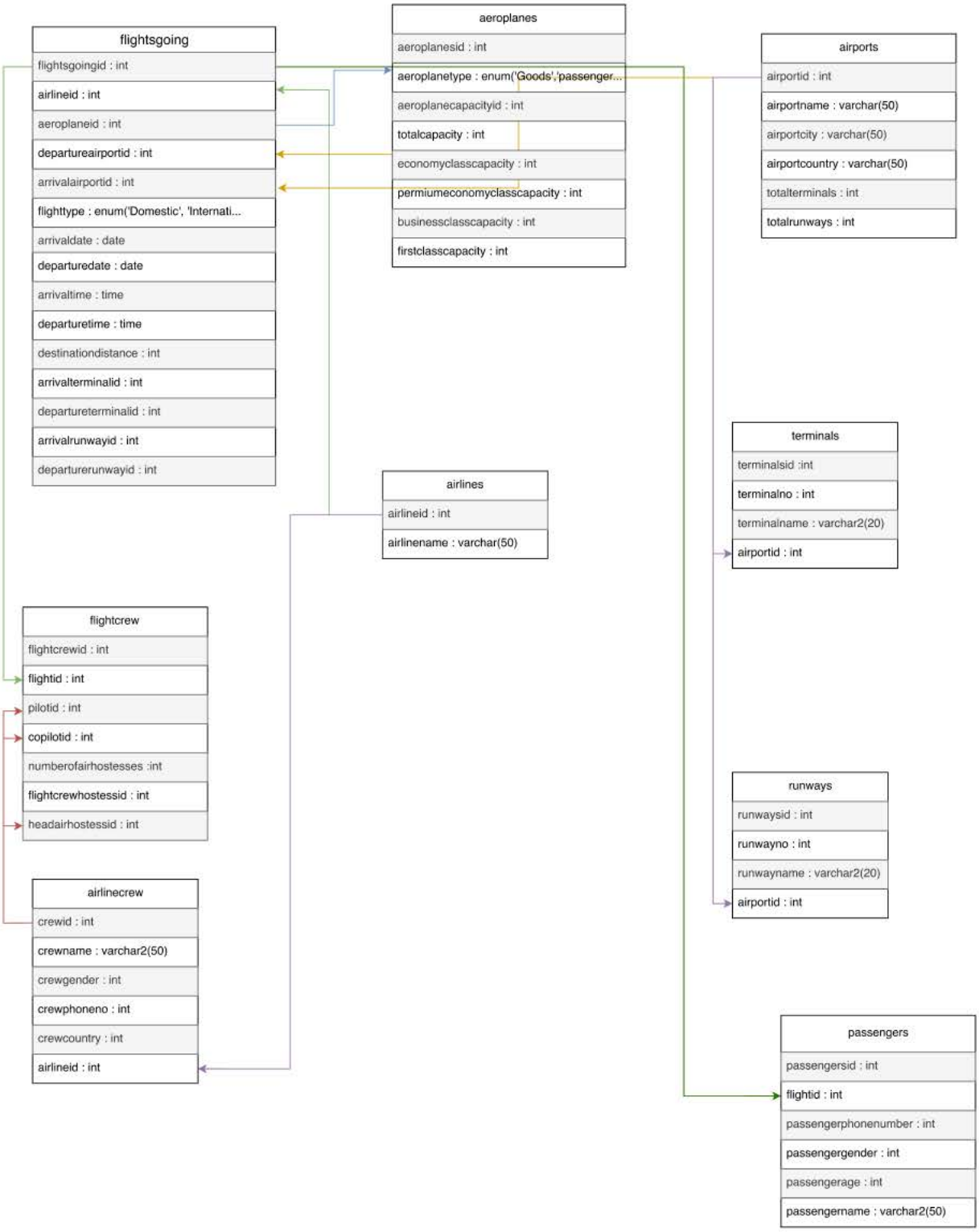
- Flight has an arrival time, departure time, a departure and arrival destination and its duration.
- Flight has three types of classes - business, economy and first class.
- Flights can be of two types such as Connecting flights and Non stop flights on the basis of destination and flight path.
- Flights can also be of two types: Commercial and Cargo.
- Commercial Flights are those which carry passengers from one destination to another.
- Cargo Flights are those where there are no passengers and only cargo. Cargo flights have the passengers set as NULL.

- An airline consists of multiple crew members which are allotted to different airplanes.
- A flight crew consists of a pilot, a co-pilot and a certain number of flight attendants, including a head of the flight attendants.

Assumptions:

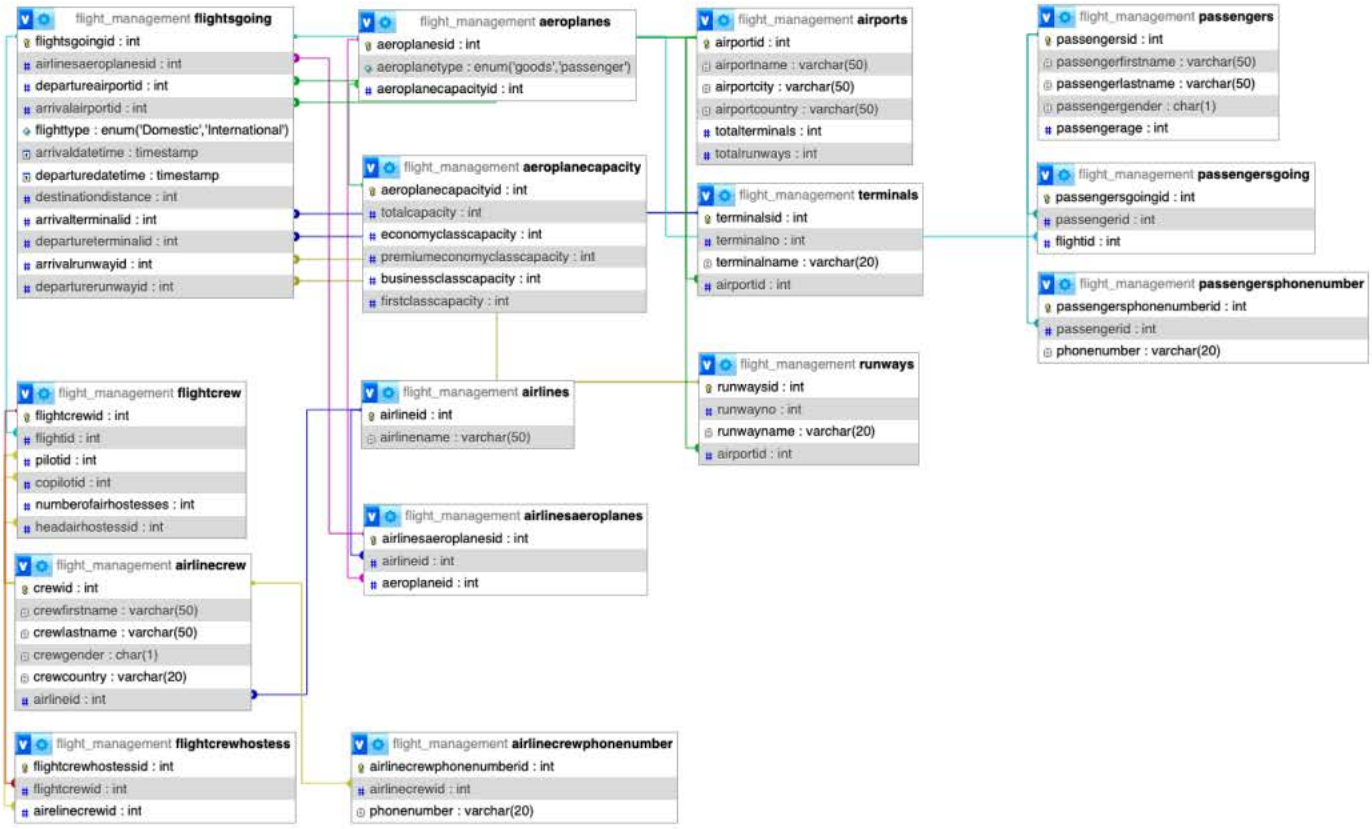
- We are not considering privately managed airports. We are only considering publicly owned airports.
- The system for now is only designed for international flights.
- A city has at most one international airport.
- For connecting flight, flight and airline remain same at layover stops.

2. UML Diagram



2. UML Diagram

The UML Diagram after Third Normal Form:



3. Entities

Flights_Going
Airlines_Aeroplanes_ID
Departure_Airport_ID
Arrival_Airport_ID
Flight_Type
Arrival_Date_Time
Departure_Date_Time
Destination_Distance
Arrival_Terminal_ID
Departure_Terminal_ID
Arrival_Runway_ID
Departure_Runway_ID

Flights_Crew
Flight_Crew_ID
Flight_ID
Pilot_ID
Copilot_ID
Number_of_Air_Hostesses
Head_Air_Hostess_ID

Airline_Crew
Crew_ID
Crew_First_Name
Crew_Last_Name
Crew_Gender
Crew_Country
Airline_ID

Aeroplanes
Aeroplanes_ID
Aeroplane_Type
Aeroplane_Capacity_ID

Airlines_Aeroplanes
Airlines_Aeroplanes_ID
Airline_ID
Total_Aeroplanes

Flight_Crew_Hostess
Flight_Crew_Hostess
Flight_Crew_ID
Airline_Crew_ID

Airlines
Airline_ID
Airline_Name
Total_Aeroplanes

Airline_Crew_Phone_No
Airline_Crew_PhoneNo_ID
Airline_Crew_ID
Phone_Number

Aeroplane_Capacity
Aeroplane_Capacity_ID
Total_Capacity
Economy_Class_Capacity
Premier_Economy_Class_Capacity
Business_Class_Capacity
First_Class_Capacity

Airports
Airport_ID
Airport_Name
Airport_City
Airport_Country
Total_Terminals
Total_Runways

Passengers
Passengers_ID
Passengers_First_Name
Passengers_Last_Name
Passengers_Gender
Passenger_Age

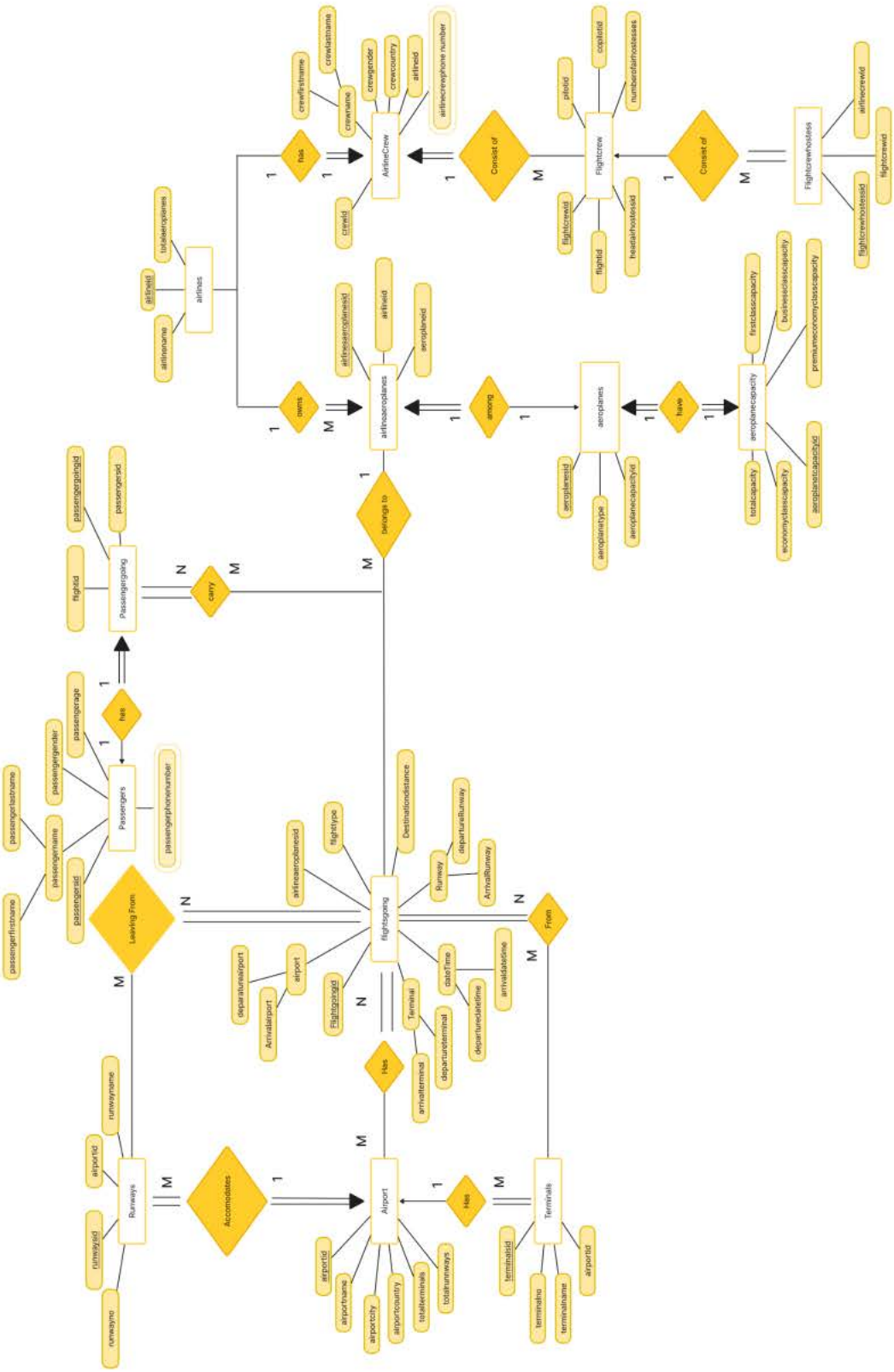
Terminals
Terminals_ID
Terminal_No
Terminal_Name
Airport_ID

Passengers_Going
Passengers_Going_ID
Passenger_ID
Flight_ID

Passengers_Phone_No
Passengers_Phone_No_ID
Passenger_ID
Phone_Number

Runways
Runways_ID
Runway_No
Runway_Name
Airport_ID

4. ER Diagram


airlines
totalaircrafts
airlineid
airlinename
has
owns
belongs to
AirlineCrew
crewfirstname
crewlastname
crewname
crewgender
crewcountry
airlineid
airlinecrewphone number
crewid
Consist of
Flightcrew
pilotid
copilotid
numberofairhostesses
flightcrewid
flightid
headairhostessid
Consist of
Flightcrewhostess
airlinecrewid
flightcrewid
flightcrewhostessid
airlinesaeroplanes
airlineid
aeroplaneid
among
aeroplanes
aeroplaneid
aeroplanetype
aeroplanecapacityid
have
aeroplanecapacity
firstclasscapacity
businessclasscapacity
premiumeconomyclasscapacity
totalcapacity
economyclasscapacity
aeroplanetotalcapacityid
Passengersgoing
passengergoingid
passengerid
flightid
carry
Passengers
passengerfirstname
passengerlastname
passengername
passengerid
passengergender
passengerage
passengerphonenumber
has
Leaving From
flightsgoing
airlinesaeroplaneid
flightgoingid
flighttype
DestinationDistance
Runway
departureRunway
ArrivalRunway
departureairport
ArrivalAirport
airport
dateTime
departuredatetime
arrivaldatetime
Terminal
departureterminal
arrivalterminal
Has
From
Runways
runwayname
airportid
runwayid
runwayno
Accomodates
Airport
airportid
airportname
airportcity
airportcountry
totalterminals
totalrunways
Has
Terminals
terminalid
terminalno
terminalname
airportid

4. Types of Relationships in ER Diagram

Entity 1	Relationship	Entity 2	Cardinality
Airport	Accommodates	Runways	1:m
Airport	Has	Terminals	1:m
Airport	Has	Flights Going	m:n
Terminals	Has	Flights Going	m:n
Flights Going	Leaving From	Runways	n:m
Flights Going	Carry	Passengers Going	m:n
Passengers	Has	Passengers Going	1:1
Flights Going	Belong To	Airlines Aeroplanes	m:1
Airlines	Owns	Airlines Aeroplanes	1:m
Airlines	Has	Airline Crew	1:1
Airlines Aeroplanes	Among	Aeroplanes	1:1
Aeroplanes	Have	Aeroplane Capacity	1:1
Airline Crew	Consist Of	Flight Crew	1:m
Flight Crew	Consist Of	Flight Crew Hostess	1:m

5. SQL Code and Procedures

```
 1  CREATE OR REPLACE PROCEDURE get_airline_aeroplane_info IS
 2  BEGIN
 3      FOR airline_info IN (
 4          SELECT
 5              a.airlineid,
 6              a.airlinename,
 7              aa.aeroplaneid
 8          FROM
 9              airlines a
10          JOIN
11              airlinesaeroplanes aa ON a.airlineid = aa.airlineid
12      ) LOOP
13          DBMS_OUTPUT.PUT_LINE('Airline ID: ' || airline_info.airlineid);
14          DBMS_OUTPUT.PUT_LINE('Airline Name: ' || airline_info.airlinename);
15          DBMS_OUTPUT.PUT_LINE('Aeroplane ID: ' || airline_info.aeroplaneid);
16          DBMS_OUTPUT.PUT_LINE('-----------------------------------');
17      END LOOP;
18* END;
SQL> /

Procedure created.

SQL> begin
  2  get_airline_aeroplane_info;
  3  end;
  4  /
Airline ID: 1
Airline Name: American Airlines
Aeroplane ID: 1
-----------------------------------
Airline ID: 2
Airline Name: Delta Air Lines
Aeroplane ID: 2
-----------------------------------
Airline ID: 3
Airline Name: United Airlines
Aeroplane ID: 5
-----------------------------------
Airline ID: 4
Airline Name: Southwest Airlines
Aeroplane ID: 7
-----------------------------------
Airline ID: 5
Airline Name: Emirates
Aeroplane ID: 8
-----------------------------------
Airline ID: 6
Airline Name: Lufthansa
Aeroplane ID: 10
-----------------------------------
Airline ID: 7
Airline Name: British Airways
Aeroplane ID: 12
-----------------------------------
Airline ID: 8
Airline Name: Air France
Aeroplane ID: 13
```

5. SQL Code and Procedures

```
 1  DECLARE
 2      result_cursor SYS_REFCURSOR;
 3      airport_name airports.airportname%TYPE;
 4      airport_city airports.airportcity%TYPE;
 5      num_terminals NUMBER;
 6      num_runways NUMBER;
 7  BEGIN
 8      result_cursor := get_airport_details;
 9      LOOP
10          FETCH result_cursor INTO airport_name, airport_city, num_terminals, num_runways;
11          EXIT WHEN result_cursor%NOTFOUND;
12          DBMS_OUTPUT.PUT_LINE('Airport Name: ' || airport_name);
13          DBMS_OUTPUT.PUT_LINE('Airport City: ' || airport_city);
14          DBMS_OUTPUT.PUT_LINE('Number of Terminals: ' || num_terminals);
15          DBMS_OUTPUT.PUT_LINE('Number of Runways: ' || num_runways);
16          DBMS_OUTPUT.PUT_LINE('--------------------------');
17      END LOOP;
18      CLOSE result_cursor;
19* END;
20  /
Airport Name: JFK Airport
Airport City: New York City
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Dublin Airport
Airport City: Dublin
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Munich Airport
Airport City: Munich
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Sydney Airport
Airport City: Sydney
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Zurich Airport
Airport City: Zurich
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: Auckland Airport
Airport City: Auckland
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: Frankfurt Airport
Airport City: Frankfurt
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Ben Gurion Airport
Airport City: Tel Aviv
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Manchester Airport
Airport City: Manchester
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Suvarnabhumi Airport
Airport City: Bangkok
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Tokyo Haneda Airport
Airport City: Tokyo
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: London Heathrow Airport
Airport City: London
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Marrakesh Menara Airport
Airport City: Marrakesh
Number of Terminals: 3
Number of Runways: 3
--------------------------
Airport Name: Singapore Changi Airport
Airport City: Singapore
Number of Terminals: 5
Number of Runways: 5
```

5. SQL Code and Procedures

```
  1  begin
  2  get_airplane_capacity;
  3* end;
SQL> /
Aeroplane ID: 3, Type: Goods, Total Capacity: 150, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 2, Type: Passenger, Total Capacity: 180, Economy Class Capacity: 130, Premium Economy Class Capacity: 30, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 4, Type: Goods, Total Capacity: 180, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 52, Type: Passenger, Total Capacity: 180, Economy Class Capacity: 130, Premium Economy Class Capacity: 30, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 62, Type: Passenger, Total Capacity: 180, Economy Class Capacity: 130, Premium Economy Class Capacity: 30, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 9, Type: Goods, Total Capacity: 190, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 1, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 150, Premium Economy Class Capacity: 25, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 6, Type: Goods, Total Capacity: 200, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 16, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 140, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 51, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 150, Premium Economy Class Capacity: 25, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 59, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 140, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 61, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 150, Premium Economy Class Capacity: 25, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 69, Type: Passenger, Total Capacity: 200, Economy Class Capacity: 140, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 8, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 35, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 11, Type: Goods, Total Capacity: 210, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 18, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 55, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 35, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 60, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 65, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 35, Business Class Capacity: 20, First Class Capacity: 5
Aeroplane ID: 70, Type: Passenger, Total Capacity: 210, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 7, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 160, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 13, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 14, Type: Goods, Total Capacity: 220, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 22, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 160, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 31, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 37, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 50, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 47, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 50, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 54, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 160, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 58, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 64, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 160, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 68, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 72, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 160, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 77, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 80, Type: Passenger, Total Capacity: 220, Economy Class Capacity: 150, Premium Economy Class Capacity: 50, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 10, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 15, Type: Goods, Total Capacity: 230, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 24, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 170, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 27, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 160, Premium Economy Class Capacity: 50, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 33, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 160, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 43, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 160, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 56, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 66, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 73, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 170, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 75, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 160, Premium Economy Class Capacity: 50, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 78, Type: Passenger, Total Capacity: 230, Economy Class Capacity: 160, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 12, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 17, Type: Goods, Total Capacity: 240, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 20, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 29, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 35, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 41, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 45, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 57, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 67, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 71, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 30, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 76, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 170, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 79, Type: Passenger, Total Capacity: 240, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 15, First Class Capacity: 5
Aeroplane ID: 5, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 19, Type: Goods, Total Capacity: 250, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 25, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 39, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 49, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 53, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 63, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 25, First Class Capacity: 5
Aeroplane ID: 74, Type: Passenger, Total Capacity: 250, Economy Class Capacity: 180, Premium Economy Class Capacity: 40, Business Class Capacity: 20, First Class Capacity: 10
Aeroplane ID: 21, Type: Goods, Total Capacity: 260, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 23, Type: Goods, Total Capacity: 270, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 26, Type: Goods, Total Capacity: 280, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 28, Type: Goods, Total Capacity: 290, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 30, Type: Goods, Total Capacity: 300, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 32, Type: Goods, Total Capacity: 310, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 34, Type: Goods, Total Capacity: 320, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 36, Type: Goods, Total Capacity: 330, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 38, Type: Goods, Total Capacity: 340, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 40, Type: Goods, Total Capacity: 350, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 42, Type: Goods, Total Capacity: 360, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 44, Type: Goods, Total Capacity: 370, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 46, Type: Goods, Total Capacity: 380, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 48, Type: Goods, Total Capacity: 390, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0
Aeroplane ID: 50, Type: Goods, Total Capacity: 400, Economy Class Capacity: 0, Premium Economy Class Capacity: 0, Business Class Capacity: 0, First Class Capacity: 0

PL/SQL procedure successfully completed.
```

```
Wrote file afiedt.buf

  1  create or replace procedure airline_data as
  2      cursor airline_cursor is select * from airlines;
  3  begin
  4      for rec in airline_cursor loop
  5          dbms_output.put_line(rec.airlineid|| ' ' ||rec.airlinename);
  6      end loop;
  7* end;
```

5. SQL Code and Procedures

```
 1  CREATE OR REPLACE PROCEDURE get_airplane_capacity AS
 2  BEGIN
 3      FOR rec IN (
 4          SELECT a.aeroplanesid,
 5                 a.aeroplanetype,
 6                 ac.totalcapacity,
 7                 ac.economyclasscapacity,
 8                 ac.premiumeconomyclasscapacity,
 9                 ac.businessclasscapacity,
10                 ac.firstclasscapacity
11          FROM aeroplanes a
12          JOIN aeroplanecapacity ac ON a.aeroplanecapacityid = ac.aeroplanecapacityid order by totalcapacity, aeroplanesid
13      ) LOOP
14          DBMS_OUTPUT.PUT_LINE(
15              'Aeroplane ID: ' || rec.aeroplanesid ||
16              ', Type: ' || rec.aeroplanetype ||
17              ', Total Capacity: ' || rec.totalcapacity ||
18              ', Economy Class Capacity: ' || rec.economyclasscapacity ||
19              ', Premium Economy Class Capacity: ' || rec.premiumeconomyclasscapacity ||
20              ', Business Class Capacity: ' || rec.businessclasscapacity ||
21              ', First Class Capacity: ' || rec.firstclasscapacity
22          );
23      END LOOP;
24* END;
```

```
SQL> begin
  2      airline_data;
  3  end;
  4  /
1 American Airlines
2 Delta Air Lines
3 United Airlines
4 Southwest Airlines
5 Emirates
6 Lufthansa
7 British Airways
8 Air France
9 Qantas Airways
10 Singapore Airlines
11 Cathay Pacific
12 Qatar Airways
13 Turkish Airlines
14 Etihad Airways
15 ANA (All Nippon Airways)
16 Virgin Atlantic
17 KLM Royal Dutch Airlines
18 Japan Airlines
19 Air Canada
20 Air New Zealand
21 Virgin Australia
22 Swiss International Air Lines
23 Austrian Airlines
24 Finnair
25 Korean Air
26 Thai Airways
27 Malaysia Airlines
28 EgyptAir
29 Aeroflot Russian Airlines
30 Scandinavian Airlines (SAS)
31 Norwegian Air Shuttle
32 LATAM Airlines
33 Iberia
34 Garuda Indonesia
35 Alaska Airlines
36 JetBlue Airways
37 Hawaiian Airlines
38 EVA Air
39 Azul Brazilian Airlines
40 AirAsia
41 IndiGo
42 Vueling Airlines
43 Wizz Air
44 EasyJet
45 Ryanair
46 Spirit Airlines
47 Allegiant Air
48 Frontier Airlines
49 Air Arabia
50 Flydubai
```

5. SQL Code and Procedures

```
 1  CREATE OR REPLACE PROCEDURE get_crew_info IS
 2  BEGIN
 3      FOR crew_info IN (
 4          SELECT
 5              fc.flightcrewid,
 6              fc.flightid,
 7              ac.crewfirstname AS airline_crew_firstname,
 8              ac.crewlastname AS airline_crew_lastname,
 9              ac.crewgender AS airline_crew_gender,
10              ac.crewcountry AS airline_crew_country,
11              fh.airelinecrewid AS flight_hostess_id,
12              fh.flightcrewhostessid AS flight_crew_hostess_id
13          FROM
14              flightcrew fc
15          JOIN
16              airlinecrew ac ON fc.pilotid = ac.crewid OR fc.copilotid = ac.crewid
17          LEFT JOIN
18              flightcrewhostess fh ON fc.flightcrewid = fh.flightcrewid
19      ) LOOP
20          DBMS_OUTPUT.PUT_LINE('Flight Crew ID: ' || crew_info.flightcrewid);
21          DBMS_OUTPUT.PUT_LINE('Flight ID: ' || crew_info.flightid);
22          DBMS_OUTPUT.PUT_LINE('Airline Crew Firstname: ' || crew_info.airline_crew_firstname);
23          DBMS_OUTPUT.PUT_LINE('Airline Crew Lastname: ' || crew_info.airline_crew_lastname);
24          DBMS_OUTPUT.PUT_LINE('Airline Crew Gender: ' || crew_info.airline_crew_gender);
25          DBMS_OUTPUT.PUT_LINE('Airline Crew Country: ' || crew_info.airline_crew_country);
26          DBMS_OUTPUT.PUT_LINE('Flight Hostess ID: ' || crew_info.flight_hostess_id);
27          DBMS_OUTPUT.PUT_LINE('Flight Crew Hostess ID: ' || crew_info.flight_crew_hostess_id);
28          DBMS_OUTPUT.PUT_LINE('-------------------------------------');
29      END LOOP;
30* END;
SQL> /

Procedure created.
```

5. SQL Code and Procedures

```
 1  DECLARE
 2      result_cursor SYS_REFCURSOR;
 3      airport_name airports.airportname%TYPE;
 4      airport_city airports.airportcity%TYPE;
 5      num_terminals NUMBER;
 6      num_runways NUMBER;
 7  BEGIN
 8      result_cursor := get_airport_details;
 9      LOOP
10          FETCH result_cursor INTO airport_name, airport_city, num_terminals, num_runways;
11          EXIT WHEN result_cursor%NOTFOUND;
12          DBMS_OUTPUT.PUT_LINE('Airport Name: ' || airport_name);
13          DBMS_OUTPUT.PUT_LINE('Airport City: ' || airport_city);
14          DBMS_OUTPUT.PUT_LINE('Number of Terminals: ' || num_terminals);
15          DBMS_OUTPUT.PUT_LINE('Number of Runways: ' || num_runways);
16          DBMS_OUTPUT.PUT_LINE('--------------------------');
17      END LOOP;
18      CLOSE result_cursor;
19* END;
20  /
Airport Name: JFK Airport
Airport City: New York City
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Dublin Airport
Airport City: Dublin
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Munich Airport
Airport City: Munich
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Sydney Airport
Airport City: Sydney
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Zurich Airport
Airport City: Zurich
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: Auckland Airport
Airport City: Auckland
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: Frankfurt Airport
Airport City: Frankfurt
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Ben Gurion Airport
Airport City: Tel Aviv
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Manchester Airport
Airport City: Manchester
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Suvarnabhumi Airport
Airport City: Bangkok
Number of Terminals: 4
Number of Runways: 4
--------------------------
Airport Name: Tokyo Haneda Airport
Airport City: Tokyo
Number of Terminals: 2
Number of Runways: 2
--------------------------
Airport Name: London Heathrow Airport
Airport City: London
Number of Terminals: 5
Number of Runways: 5
--------------------------
Airport Name: Marrakesh Menara Airport
Airport City: Marrakesh
Number of Terminals: 3
Number of Runways: 3
--------------------------
Airport Name: Singapore Changi Airport
Airport City: Singapore
Number of Terminals: 5
Number of Runways: 5
```

5. SQL Code and Procedures

```
CREATE OR REPLACE PROCEDURE get_flight_crew_info IS
BEGIN
    FOR crew_info IN (
        SELECT
            fg.flightsgoingid,
            fg.departureairportid,
            fg.arrivalairportid,
            fg.arrivaldatetime,
            fg.departuredatetime,
            fc.pilotid,
            fc.copilotid,
            fc.numberofairhostesses,
            fc.headairhostessid
        FROM
            flightsgoing fg
        JOIN
            flightcrew fc ON fg.flightsgoingid = fc.flightid
    ) LOOP
        DBMS_OUTPUT.PUT_LINE('Flight ID: ' || crew_info.flightsgoingid);
        DBMS_OUTPUT.PUT_LINE('Departure Airport ID: ' || crew_info.departureairportid);
        DBMS_OUTPUT.PUT_LINE('Arrival Airport ID: ' || crew_info.arrivalairportid);
        DBMS_OUTPUT.PUT_LINE('Arrival Datetime: ' || crew_info.arrivaldatetime);
        DBMS_OUTPUT.PUT_LINE('Departure Datetime: ' || crew_info.departuredatetime);
        DBMS_OUTPUT.PUT_LINE('Pilot ID: ' || crew_info.pilotid);
        DBMS_OUTPUT.PUT_LINE('CoPilot ID: ' || crew_info.copilotid);
        DBMS_OUTPUT.PUT_LINE('Number of Air Hostesses: ' || crew_info.numberofairhostesses);
        DBMS_OUTPUT.PUT_LINE('Head Air Hostess ID: ' || crew_info.headairhostessid);
        DBMS_OUTPUT.PUT_LINE('-------------------------------------');
    END LOOP;
END;
SQL> /
```

```
SELECT
    p.passengerfirstname AS Passenger_FirstName,
    p.passengerlastname AS Passenger_LastName,
    p.passengergender AS S,
    p.passengerage AS Passenger_Age,
    a.airlinename AS Airline_Name,
    fc.flightid AS Flight_ID,
    fc.pilotid AS Pilot_ID,
    fc.headairhostessid AS HeadAirHostess_ID
FROM
    passengers p
JOIN
    passengersgoing pg ON p.passengersid = pg.passengerid
JOIN
    flightsgoing fg ON pg.flightid = fg.flightsgoingid
JOIN
    airlinesaeroplanes aa ON fg.airlinesaeroplanesid = aa.airlinesaeroplanesid
JOIN
    airlines a ON aa.airlineid = a.airlineid
JOIN
    flightcrew fc ON fg.flightsgoingid = fc.flightid
SQL> /
```

PASSENGER_FIRSTNAME	PASSENGER_LASTNAME	S	PASSENGER_AGE	AIRLINE_NAME	FLIGHT_ID	PILOT_ID	HEADAIRHOSTESS_ID
Rahul	Sharma	M	35	American Airlines	1	1	3
Rahul	Sharma	M	35	AirAsia	2	11	13
Priya	Patel	F	28	Turkish Airlines	3	16	18
Priya	Patel	F	28	Air New Zealand	4	21	23
Amit	Singh	M	42	Korean Air	5	26	28
Amit	Singh	M	42	Iberia	6	31	33
Neha	Gupta	F	30	Frontier Airlines	7	36	38
Neha	Gupta	F	30	Emirates	8	41	43
Suresh	Kumar	M	25	IndiGo	9	46	48
Suresh	Kumar	M	25	Flydubai	10	51	53
Anjali	Desai	F	33	Lufthansa	11	56	58

PASSENGER_FIRSTNAME	PASSENGER_LASTNAME	S	PASSENGER_AGE	AIRLINE_NAME	FLIGHT_ID	PILOT_ID	HEADAIRHOSTESS_ID
Anjali	Desai	F	33	ANA (All Nippon Airways)	12	61	63
Vikram	Rao	M	40	Finnair	13	66	68
Vikram	Rao	M	40	LATAM Airlines	14	71	73
Kavita	Menon	F	28	EasyJet	15	76	78
Kavita	Menon	F	28	Delta Air Lines	16	81	83
Manish	Shah	M	45	Singapore Airlines	17	86	88
Manish	Shah	M	45	Alaska Airlines	18	91	93
Pooja	Reddy	F	32	Southwest Airlines	19	96	99
Pooja	Reddy	F	32	Flydubai	20	100	104
Rajesh	Krishnan	M	38	British Airways	21	106	108
Rajesh	Krishnan	M	38	KLM Royal Dutch Airlines	22	110	112

PASSENGER_FIRSTNAME	PASSENGER_LASTNAME	S	PASSENGER_AGE	AIRLINE_NAME	FLIGHT_ID	PILOT_ID	HEADAIRHOSTESS_ID
Divya	Sinha	F	27	Thai Airways	23	116	119
Divya	Sinha	F	27	Hawaiian Airlines	24	121	123
Sanjay	Verma	M	41	United Airlines	25	126	128
Sanjay	Verma	M	41	United Airlines	26	131	133
Shilpa	Chopra	F	29	Cathay Pacific	27	136	138
Shilpa	Chopra	F	29	Norwegian Air Shuttle	28	141	143
Alok	Joshi	M	36	Air Arabia	29	146	148
Alok	Joshi	M	36	Air France	30	151	153
Ananya	Mukherjee	F	31	Japan Airlines	31	156	158
Ananya	Mukherjee	F	31	Malaysia Airlines	32	161	163
Arjun	Nair	M	43	EVA Air	33	166	168

PASSENGER_FIRSTNAME	PASSENGER_LASTNAME	S	PASSENGER_AGE	AIRLINE_NAME	FLIGHT_ID	PILOT_ID	HEADAIRHOSTESS_ID
Arjun	Nair	M	43	Southwest Airlines	34	171	173
Sneha	Rajput	F	30	Southwest Airlines	35	176	178
Sneha	Rajput	F	30	Emirates	36	181	183
Anand	Srivastava	M	37	Qatar Airways	37	186	188
Anand	Srivastava	M	37	Scandinavian Airlines (SAS)	38	191	193
Deepika	Gandhi	F	26	Allegiant Air	39	196	198
Deepika	Gandhi	F	26	American Airlines	40	201	203
Ajay	Sharma	M	44	Air France	41	206	208
Ajay	Sharma	M	44	Virgin Atlantic	42	211	213

5. SQL Code and Procedures

```
 1  CREATE OR REPLACE PROCEDURE get_airline_crew_info IS
 2  BEGIN
 3      FOR crew_info IN (
 4          SELECT
 5              ac.crewid,
 6              ac.crewfirstname,
 7              ac.crewlastname,
 8              ac.crewgender,
 9              ac.crewcountry,
10              pn.phonenumber
11          FROM
12              airlinecrew ac
13          LEFT JOIN
14              airlinecrewphonenumber pn ON ac.crewid = pn.airlinecrewid
15      ) LOOP
16          DBMS_OUTPUT.PUT_LINE('Crew ID: ' || crew_info.crewid);
17          DBMS_OUTPUT.PUT_LINE('Crew Firstname: ' || crew_info.crewfirstname);
18          DBMS_OUTPUT.PUT_LINE('Crew Lastname: ' || crew_info.crewlastname);
19          DBMS_OUTPUT.PUT_LINE('Crew Gender: ' || crew_info.crewgender);
20          DBMS_OUTPUT.PUT_LINE('Crew Country: ' || crew_info.crewcountry);
21          DBMS_OUTPUT.PUT_LINE('Phone Number: ' || crew_info.phonenumber);
22          DBMS_OUTPUT.PUT_LINE('-----------------------------------');
23      END LOOP;
24* END;
SQL> /
```

5. SQL Code and Procedures

```
  1  CREATE OR REPLACE PROCEDURE get_airline_aeroplane_info IS
  2  BEGIN
  3      FOR airline_info IN (
  4          SELECT
  5              a.airlineid,
  6              a.airlinename,
  7              aa.aeroplaneid
  8          FROM
  9              airlines a
 10          JOIN
 11              airlinesaeroplanes aa ON a.airlineid = aa.airlineid
 12      ) LOOP
 13          DBMS_OUTPUT.PUT_LINE('Airline ID: ' || airline_info.airlineid);
 14          DBMS_OUTPUT.PUT_LINE('Airline Name: ' || airline_info.airlinename);
 15          DBMS_OUTPUT.PUT_LINE('Aeroplane ID: ' || airline_info.aeroplaneid);
 16          DBMS_OUTPUT.PUT_LINE('-----------------------------------');
 17      END LOOP;
 18* END;
SQL> /

Procedure created.

SQL> begin
  2  get_airline_aeroplane_info;
  3  end;
  4  /
Airline ID: 1
Airline Name: American Airlines
Aeroplane ID: 1
-----------------------------------
Airline ID: 2
Airline Name: Delta Air Lines
Aeroplane ID: 2
-----------------------------------
Airline ID: 3
Airline Name: United Airlines
Aeroplane ID: 5
-----------------------------------
Airline ID: 4
Airline Name: Southwest Airlines
Aeroplane ID: 7
-----------------------------------
Airline ID: 5
Airline Name: Emirates
Aeroplane ID: 8
-----------------------------------
Airline ID: 6
Airline Name: Lufthansa
Aeroplane ID: 10
-----------------------------------
Airline ID: 7
Airline Name: British Airways
Aeroplane ID: 12
-----------------------------------
Airline ID: 8
Airline Name: Air France
Aeroplane ID: 13
```

5. SQL Code and Procedures

```
DECLARE
    -- Declare variables to hold crew information
    v_crew_id airlinecrew.crewid%TYPE;
    v_first_name airlinecrew.crewfirstname%TYPE;
    v_last_name airlinecrew.crewlastname%TYPE;
    v_gender airlinecrew.crewgender%TYPE;
    v_country airlinecrew.crewcountry%TYPE;
    v_airline_name airlines.airlinename%TYPE; -- Change to hold airline name
    -- Declare a cursor to fetch crew information
    CURSOR crew_cursor IS
        SELECT ac.crewid, ac.crewfirstname, ac.crewlastname, ac.crewgender, ac.crewcountry, al.airlinename
        FROM airlinecrew ac
        JOIN airlines al ON ac.airlineid = al.airlineid; -- Join to fetch airline name
BEGIN
    -- Open the cursor
    OPEN crew_cursor;
    -- Fetch crew information from the cursor and process each row
    LOOP
        FETCH crew_cursor INTO v_crew_id, v_first_name, v_last_name, v_gender, v_country, v_airline_name;
        EXIT WHEN crew_cursor%NOTFOUND; -- Exit loop when no more rows to fetch
        -- Process crew information here (you can perform any necessary operations)
        -- For example, you can display crew details or perform other database operations
        -- For demonstration, let's just print crew details
        DBMS_OUTPUT.PUT_LINE('Crew ID: ' || v_crew_id || ', Name: ' || v_first_name || ' ' || v_last_name || ', Gender: ' || v_gender || ', Country: ' |
| v_country || ', Airline: ' || v_airline_name);
    END LOOP;
    -- Close the cursor
    CLOSE crew_cursor;
END;
/
Crew ID: 1, Name: John Smith, Gender: M, Country: United States, Airline: American Airlines
Crew ID: 2, Name: Emily Johnson, Gender: F, Country: United States, Airline: American Airlines
Crew ID: 3, Name: Michael Williams, Gender: M, Country: United Kingdom, Airline: American Airlines
Crew ID: 4, Name: Sophia Brown, Gender: F, Country: United Kingdom, Airline: American Airlines
Crew ID: 5, Name: David Jones, Gender: M, Country: Australia, Airline: American Airlines
Crew ID: 6, Name: Olivia Miller, Gender: F, Country: Australia, Airline: American Airlines
Crew ID: 7, Name: Daniel Wilson, Gender: M, Country: Canada, Airline: American Airlines
Crew ID: 8, Name: Emma Moore, Gender: F, Country: Canada, Airline: American Airlines
Crew ID: 9, Name: Matthew Taylor, Gender: M, Country: France, Airline: American Airlines
Crew ID: 10, Name: Isabella Anderson, Gender: F, Country: France, Airline: American Airlines
Crew ID: 11, Name: Mark Davis, Gender: M, Country: United States, Airline: Delta Air Lines
Crew ID: 12, Name: Ava Martinez, Gender: F, Country: United States, Airline: Delta Air Lines
Crew ID: 13, Name: Jacob Hernandez, Gender: M, Country: United Kingdom, Airline: Delta Air Lines
Crew ID: 14, Name: Mia Lopez, Gender: F, Country: United Kingdom, Airline: Delta Air Lines
Crew ID: 15, Name: Ethan Garcia, Gender: M, Country: Australia, Airline: Delta Air Lines
Crew ID: 16, Name: Amelia Adams, Gender: F, Country: Germany, Airline: United Airlines
Crew ID: 17, Name: Noah Wright, Gender: M, Country: Germany, Airline: United Airlines
Crew ID: 18, Name: Liam Russell, Gender: M, Country: France, Airline: United Airlines
Crew ID: 19, Name: Charlotte Young, Gender: F, Country: France, Airline: United Airlines
Crew ID: 20, Name: Ella King, Gender: F, Country: Australia, Airline: United Airlines
Crew ID: 21, Name: Lucas Scott, Gender: M, Country: Canada, Airline: Southwest Airlines
Crew ID: 22, Name: Lily Hall, Gender: F, Country: Canada, Airline: Southwest Airlines
```

```
SELECT
    p.passengerfirstname AS Passenger_FirstName,
    p.passengerlastname AS Passenger_LastName,
    p.passengergender AS S,
    p.passengerage AS Passenger_Age,
    a.airlinename AS Airline_Name,
    fc.flightid AS Flight_ID,
    fc.pilotid AS Pilot_ID,
    fc.headairhostessid AS HeadAirHostess_ID
FROM
    passengers p
JOIN
    passengersgoing pg ON p.passengersid = pg.passengerid
JOIN
    flightsgoing fg ON pg.flightid = fg.flightsgoingid
JOIN
    airlinesaeroplanes aa ON fg.airlinesaeroplanesid = aa.airlinesaeroplanesid
JOIN
    airlines a ON aa.airlineid = a.airlineid
JOIN
    flightcrew fc ON fg.flightsgoingid = fc.flightid
SQL> /

PASSENGER_FIRSTNAME                                PASSENGER_LASTNAME                                 S PASSENGER_AGE AIRLINE_NAME                                        FLIGHT_ID   PILOT_ID HEADAIRHOSTESS_ID
---------------------------------------------------------------------------------------------------- - ----------- ---------------------------------------------------------------- ---------- ---------- --------------
Rahul                                              Sharma                                             M          35 American Airlines                                                1          1              3
Rahul                                              Sharma                                             M          35 AirAsia                                                          2         11             13
Priya                                              Patel                                              F          28 Turkish Airlines                                                 3         16             18
Priya                                              Patel                                              F          28 Air New Zealand                                                  4         21             23
Amit                                               Singh                                              M          42 Korean Air                                                       5         26             28
Amit                                               Singh                                              M          42 Iberia                                                           6         31             33
Neha                                               Gupta                                              F          30 Frontier Airlines                                                7         36             38
Neha                                               Gupta                                              F          30 Emirates                                                         8         41             43
Suresh                                             Kumar                                              M          25 IndiGo                                                           9         46             48
Suresh                                             Kumar                                              M          25 FlyDubai                                                        10         51             53
Anjali                                             Desai                                              F          33 Lufthansa                                                       11         56             58

PASSENGER_FIRSTNAME                                PASSENGER_LASTNAME                                 S PASSENGER_AGE AIRLINE_NAME                                        FLIGHT_ID   PILOT_ID HEADAIRHOSTESS_ID
---------------------------------------------------------------------------------------------------- - ----------- ---------------------------------------------------------------- ---------- ---------- --------------
Anjali                                             Desai                                              F          33 ANA (All Nippon Airways)                                        12         61             63
Vikram                                             Rao                                                M          40 Finnair                                                         13         66             68
Vikram                                             Rao                                                M          40 LATAM Airlines                                                  14         71             73
Kavita                                             Menon                                              F          28 EasyJet                                                         15         76             78
Kavita                                             Menon                                              F          28 Delta Air Lines                                                 16         81             83
Manish                                             Shah                                               M          45 Singapore Airlines                                              17         86             88
Manish                                             Shah                                               M          45 Alaska Airlines                                                 18         91             93
Pooja                                              Reddy                                              F          32 Southwest Airlines                                              19         96             99
Pooja                                              Reddy                                              F          32 FlyDubai                                                        20        100            104
Rajesh                                             Krishnan                                           M          38 British Airways                                                 21        106            108
Rajesh                                             Krishnan                                           M          38 KLM Royal Dutch Airlines                                        22        110            112

PASSENGER_FIRSTNAME                                PASSENGER_LASTNAME                                 S PASSENGER_AGE AIRLINE_NAME                                        FLIGHT_ID   PILOT_ID HEADAIRHOSTESS_ID
---------------------------------------------------------------------------------------------------- - ----------- ---------------------------------------------------------------- ---------- ---------- --------------
Divya                                              Sinha                                              F          27 Thai Airways                                                    23        116            119
Divya                                              Sinha                                              F          27 Hawaiian Airlines                                               24        121            123
Sanjay                                             Verma                                              M          41 United Airlines                                                 25        126            128
Sanjay                                             Verma                                              M          41 United Airlines                                                 26        131            133
Shilpa                                             Chopra                                             F          29 Cathay Pacific                                                  27        136            138
Shilpa                                             Chopra                                             F          29 Norwegian Air Shuttle                                           28        141            143
Alok                                               Joshi                                              M          36 Air Arabia                                                      29        146            148
Alok                                               Joshi                                              M          36 Air France                                                      30        151            153
Ananya                                             Mukherjee                                          F          31 Japan Airlines                                                  31        156            158
Ananya                                             Mukherjee                                          F          31 Malaysia Airlines                                               32        161            163
Arjun                                              Nair                                               M          43 EVA Air                                                         33        166            168

PASSENGER_FIRSTNAME                                PASSENGER_LASTNAME                                 S PASSENGER_AGE AIRLINE_NAME                                        FLIGHT_ID   PILOT_ID HEADAIRHOSTESS_ID
---------------------------------------------------------------------------------------------------- - ----------- ---------------------------------------------------------------- ---------- ---------- --------------
Arjun                                              Nair                                               M          43 Southwest Airlines                                              34        171            173
Sneha                                              Rajput                                             F          30 Southwest Airlines                                              35        176            178
Sneha                                              Rajput                                             F          30 Emirates                                                        36        181            183
Anand                                              Srivastava                                         M          37 Qatar Airways                                                   37        186            188
Anand                                              Srivastava                                         M          37 Scandinavian Airlines (SAS)                                     38        191            193
Deepika                                            Gandhi                                             F          26 Allegiant Air                                                   39        196            198
Deepika                                            Gandhi                                             F          26 American Airlines                                               40        201            203
Ajay                                               Sharma                                             M          44 Air France                                                      41        206            208
Ajay                                               Sharma                                             M          44 Virgin Atlantic                                                 42        211            213
```

6. Triggers

To check if departure terminal is not the same as arrival terminal:

```
 1  CREATE OR REPLACE TRIGGER flightsgoing_trigger
 2  BEFORE INSERT OR UPDATE ON flightsgoing
 3  FOR EACH ROW
 4  BEGIN
 5      -- Check if the departure terminal is the same as the arrival terminal
 6      IF :NEW.departureterminalid = :NEW.arrivalterminalid THEN
 7          RAISE_APPLICATION_ERROR(-20001, 'Departure and arrival terminals cannot be the same');
 8      END IF;
 9* END;
10  /

Trigger created.
```

To check if departure date and time is not the same as arrival date time:

```
 1  CREATE OR REPLACE TRIGGER flightsgoing_trigger
 2  BEFORE INSERT ON flightsgoing
 3  FOR EACH ROW
 4  BEGIN
 5      -- Check if the departure datetime is before the arrival datetime
 6      IF :NEW.departuredatetime >= :NEW.arrivaldatetime THEN
 7          RAISE_APPLICATION_ERROR(-20001, 'Departure datetime must be before arrival datetime');
 8      END IF;
 9* END;
SQL> /

Trigger created.
```

To check if airline name is unique:

```
 1  CREATE OR REPLACE TRIGGER airline_trigger
 2  BEFORE INSERT OR UPDATE ON airlines
 3  FOR EACH ROW
 4  DECLARE
 5      airline_count NUMBER;
 6  BEGIN
 7      -- Check if the airline name is unique
 8      IF INSERTING THEN
 9          SELECT COUNT(*)
10          INTO airline_count
11          FROM airlines
12          WHERE airlinename = :NEW.airlinename;
13          IF airline_count > 0 THEN
14              RAISE_APPLICATION_ERROR(-20001, 'Airline name must be unique');
15          END IF;
16      END IF;
17* END;
18  /

Trigger created.
```

6. Triggers

To check if number of terminals and runways is not zero:

```
  1  CREATE OR REPLACE TRIGGER airport_trigger
  2  BEFORE INSERT OR UPDATE ON airports
  3  FOR EACH ROW
  4  BEGIN
  5      -- Check if the total number of terminals and runways is positive
  6      IF :NEW.totalterminals < 0 OR :NEW.totalrunways < 0 THEN
  7          RAISE_APPLICATION_ERROR(-20001, 'Total terminals and runways must be non-negative');
  8      END IF;
  9* END;
 10  /

Trigger created.
```

7. Data

```
SQL> select * from passengersgoing;

PASSENGERSGOINGID PASSENGERID   FLIGHTID
----------------- ----------- ----------
                1         101          1
                2         101          2
                3         102          3
                4         102          4
                5         103          5
                6         103          6
                7         104          7
                8         104          8
                9         105          9
               10         105         10
               11         106         11

PASSENGERSGOINGID PASSENGERID   FLIGHTID
----------------- ----------- ----------
               12         106         12
               13         107         13
               14         107         14
               15         108         15
               16         108         16
               17         109         17
               18         109         18
               19         110         19
               20         110         20
               21         111         21
               22         111         22

PASSENGERSGOINGID PASSENGERID   FLIGHTID
----------------- ----------- ----------
               23         112         23
               24         112         24
               25         113         25
               26         113         26
               27         114         27
               28         114         28
               29         115         29
               30         115         30
               31         116         31
               32         116         32
               33         117         33
```

7. Data

```
SQL> select * from passengers;

PASSENGERSID PASSENGERFIRSTNAME                                 PASSENGERLASTNAME                                 P PASSENGERAGE
------------ -------------------------------------------------- -------------------------------------------------- - ------------
         101 Rahul                                              Sharma                                             M           35
         102 Priya                                              Patel                                              F           28
         103 Amit                                               Singh                                              M           42
         104 Neha                                               Gupta                                              F           30
         105 Suresh                                             Kumar                                              M           25
         106 Anjali                                             Desai                                              F           33
         107 Vikram                                             Rao                                                M           40
         108 Kavita                                             Menon                                              F           28
         109 Manish                                             Shah                                               M           45
         110 Pooja                                              Reddy                                              F           32
         111 Rajesh                                             Krishnan                                           M           38

PASSENGERSID PASSENGERFIRSTNAME                                 PASSENGERLASTNAME                                 P PASSENGERAGE
------------ -------------------------------------------------- -------------------------------------------------- - ------------
         112 Divya                                              Sinha                                              F           27
         113 Sanjay                                             Verma                                              M           41
         114 Shilpa                                             Chopra                                             F           29
         115 Alok                                               Joshi                                              M           36
         116 Ananya                                             Mukherjee                                          F           31
         117 Arjun                                              Nair                                               M           43
         118 Sneha                                              Rajput                                             F           30
         119 Anand                                              Srivastava                                         M           37
         120 Deepika                                            Gandhi                                             F           26
         121 Ajay                                               Sharma                                             M           44
         122 Ritu                                               Choudhary                                          F           31

PASSENGERSID PASSENGERFIRSTNAME                                 PASSENGERLASTNAME                                 P PASSENGERAGE
------------ -------------------------------------------------- -------------------------------------------------- - ------------
         123 Rajat                                              Sinha                                              M           39
         124 Vidya                                              Narayan                                            F           29
         125 Anil                                               Pillai                                             M           42
         126 Kirti                                              Patil                                              F           28
         127 Raj                                                Malhotra                                           M           33
         128 Pallavi                                            Iyer                                               F           29
         129 Vijay                                              Sharma                                             M           45
         130 Shweta                                             Gupta                                              F           32
         131 Nikhil                                             Reddy                                              M           38
         132 Jaya                                               Mehra                                              F           27
         133 Ramesh                                             Kapoor                                             M           41
```

7. Data

```
SQL> select * from passengersphonenumber;

PASSENGERSPHONENUMBERID PASSENGERID PHONENUMBER
----------------------- ----------- --------------------
                      1         101 +91 12345-67890
                      2         101 +91 98765-43210
                      3         102 +91 11111-22222
                      4         103 +91 99999-88888
                      5         104 +91 77777-66666
                      6         105 +91 44444-55555
                      7         106 +91 77777-88888
                      8         106 +91 99999-11111
                      9         107 +977 98500-12345
                     10         108 +94 77-123-4567
                     11         109 +91 88888-77777

PASSENGERSPHONENUMBERID PASSENGERID PHONENUMBER
----------------------- ----------- --------------------
                     12         109 +91 66666-55555
                     13         110 +977 98100-54321
                     14         111 +94 77-234-5678
                     15         112 +91 55555-44444
                     16         113 +977 98600-98765
                     17         114 +94 77-345-6789
                     18         115 +91 44444-33333
                     19         116 +977 98400-87654
                     20         117 +94 77-456-7890
                     21         118 +91 22222-11111
                     22         118 +91 33333-44444

PASSENGERSPHONENUMBERID PASSENGERID PHONENUMBER
----------------------- ----------- --------------------
                     23         119 +977 98200-65432
                     24         120 +94 77-567-8901
                     25         121 +91 77777-88888
                     26         122 +977 98500-12345
                     27         122 +977 98100-54321
                     28         123 +94 77-123-4567
                     29         124 +91 88888-77777
                     30         124 +91 66666-55555
                     31         125 +977 98400-87654
                     32         126 +94 77-234-5678
                     33         127 +91 55555-44444
```

7. Data

```
SQL> select * from terminals;

TERMINALSID TERMINALNO TERMINALNAME          AIRPORTID
----------- ---------- ------------------- ----------
          1          1 Terminal 1                   1
          2          2 Terminal 2                   1
          3          3 Terminal 3                   1
          4          4 Terminal 4                   1
          5          5 Terminal 5                   1
          6          1 Terminal 1                   2
          7          2 Terminal 2                   2
          8          3 Terminal 3                   2
          9          4 Terminal 4                   2
         10          5 Terminal 5                   2
         11          1 Terminal 1                   3

TERMINALSID TERMINALNO TERMINALNAME          AIRPORTID
----------- ---------- ------------------- ----------
         12          2 Terminal 2                   3
         13          3 Terminal 3                   3
         14          4 Terminal 4                   3
         15          1 Terminal 1                   4
         16          2 Terminal 2                   4
         17          3 Terminal 3                   4
         18          4 Terminal 4                   4
         19          5 Terminal 5                   4
         20          1 Terminal 1                   5
         21          2 Terminal 2                   5
         22          1 Terminal 1                   6

TERMINALSID TERMINALNO TERMINALNAME          AIRPORTID
----------- ---------- ------------------- ----------
         23          2 Terminal 2                   6
         24          3 Terminal 3                   6
         25          4 Terminal 4                   6
         26          5 Terminal 5                   6
         27          1 Terminal 1                   7
         28          2 Terminal 2                   7
         29          3 Terminal 3                   7
         30          4 Terminal 4                   7
         31          1 Terminal 1                   8
         32          2 Terminal 2                   8
         33          3 Terminal 3                   8
```

7. Data

```
SQL> select * from runways;

 RUNWAYSID   RUNWAYNO RUNWAYNAME          AIRPORTID
---------- ---------- -------------------- ----------
         1          1 Runway 1                     1
         2          2 Runway 2                     1
         3          3 Runway 3                     1
         4          4 Runway 4                     1
         5          5 Runway 5                     1
         6          1 Runway 1                     2
         7          2 Runway 2                     2
         8          3 Runway 3                     2
         9          4 Runway 4                     2
        10          5 Runway 5                     2
        11          1 Runway 1                     3

 RUNWAYSID   RUNWAYNO RUNWAYNAME          AIRPORTID
---------- ---------- -------------------- ----------
        12          2 Runway 2                     3
        13          3 Runway 3                     3
        14          4 Runway 4                     3
        15          1 Runway 1                     4
        16          2 Runway 2                     4
        17          3 Runway 3                     4
        18          4 Runway 4                     4
        19          5 Runway 5                     4
        20          1 Runway 1                     5
        21          2 Runway 2                     5
        22          1 Runway 1                     6

 RUNWAYSID   RUNWAYNO RUNWAYNAME          AIRPORTID
---------- ---------- -------------------- ----------
        23          2 Runway 2                     6
        24          3 Runway 3                     6
        25          4 Runway 4                     6
        26          5 Runway 5                     6
        27          1 Runway 1                     7
        28          2 Runway 2                     7
        29          3 Runway 3                     7
        30          4 Runway 4                     7
        31          1 Runway 1                     8
        32          2 Runway 2                     8
        33          3 Runway 3                     8
```

7. Data

```
SQL> select * from airlinecrewphonenumber;

AIRLINECREWPHONENUMBERID AIRLINECREWID PHONENUMBER
------------------------ ------------ --------------------
                       1            1 +1 12345-12345
                       2            1 +1 98765-43210
                       3            2 +44 11122-23333
                       4            2 +44 44455-56666
                       5            3 +61 99988-87777
                       6            3 +61 33322-21111
                       7            4 +1 77777-77777
                       8            4 +1 88888-88888
                       9            5 +33 11111-11111
                      10            5 +33 22222-22222
                      11            6 +1 12345-67890

AIRLINECREWPHONENUMBERID AIRLINECREWID PHONENUMBER
------------------------ ------------ --------------------
                      12            6 +1 98765-43210
                      13            7 +44 123-456-7890
                      14            7 +44 555-555-5555
                      15            8 +61 1234-567890
                      16            8 +49 7777-888888
                      17            9 +49 99999-88888
                      18            9 +33 33333-22222
                      19           10 +33 111-222-3333
                      20           10 +61 444-555-6666
                      21           11 +1 9999-8888
                      22           11 +1 7777-6666

AIRLINECREWPHONENUMBERID AIRLINECREWID PHONENUMBER
------------------------ ------------ --------------------
                      23           12 +39 12345-6789
                      24           12 +39 98765-4321
                      25           13 +34 555-111-2222
                      26           13 +34 333-666-9999
                      27           14 +55 9999-1111
                      28           14 +55 8888-2222
                      29           15 +52 77777-77777
                      30           15 +52 88888-88888
                      31           16 +60 123-456-7890
                      32           16 +60 987-654-3210
                      33           17 +65 1111-2222
```

7. Data

```
SQL> select * from airports;

AIRPORTID AIRPORTNAME                                AIRPORTCITY                    AIRPORTCOUNTRY                 TOTALTERMINALS TOTALRUNWAYS
--------- ---------------------------------------- ------------------------------ ------------------------------ -------------- ------------
        1 Hartsfield-Jackson Atlanta International Airport
                                                     Atlanta                        United States                              7            5
        2 Beijing Capital International Airport      Beijing                        China                                      5            3
        3 Dubai International Airport                Dubai                          United Arab Emirates                       4            2
        4 Los Angeles International Airport          Los Angeles                    United States                              8            4
        5 Tokyo Haneda Airport                       Tokyo                          Japan                                      3            2
        6 London Heathrow Airport                    London                         United Kingdom                             6            3
        7 Charles de Gaulle Airport                  Paris                          France                                     5            4
        8 Frankfurt Airport                          Frankfurt                      Germany                                    4            3
        9 Singapore Changi Airport                   Singapore                      Singapore                                  5            4
       10 Incheon International Airport              Incheon                        South Korea                                6            3
       11 Amsterdam Airport Schiphol                 Amsterdam                      Netherlands                                4            2

AIRPORTID AIRPORTNAME                                AIRPORTCITY                    AIRPORTCOUNTRY                 TOTALTERMINALS TOTALRUNWAYS
--------- ---------------------------------------- ------------------------------ ------------------------------ -------------- ------------
       12 Hong Kong International Airport           Hong Kong                      China                                      7            5
       13 Denver International Airport              Denver                         United States                              6            4
       14 Dallas/Fort Worth International Airport    Dallas                         United States                              8            6
       15 Madrid-Barajas Adolfo Su?rez Airport      Madrid                         Spain                                      5            3
       16 Sydney Kingsford Smith Airport            Sydney                         Australia                                  4            2
       17 Indira Gandhi International Airport       Delhi                          India                                      7            4
       18 Leonardo da Vinci-Fiumicino Airport       Rome                           Italy                                      6            3
       19 Ben Gurion Airport                        Tel Aviv                       Israel                                     5            2
       20 Suvarnabhumi Airport                      Bangkok                        Thailand                                   7            4
       21 Toronto Pearson International Airport     Toronto                        Canada                                     4            3
       22 O'Hare International Airport              Chicago                        United States                              8            6

AIRPORTID AIRPORTNAME                                AIRPORTCITY                    AIRPORTCOUNTRY                 TOTALTERMINALS TOTALRUNWAYS
--------- ---------------------------------------- ------------------------------ ------------------------------ -------------- ------------
       23 Sydney Airport                            Sydney                         Australia                                  5            4
       24 San Francisco International Airport       San Francisco                  United States                              6            4
       25 Zurich Airport                            Zurich                         Switzerland                                3            2
       26 McCarran International Airport            Las Vegas                      United States                              5            3
       27 Kuala Lumpur International Airport        Kuala Lumpur                   Malaysia                                   4            2
       28 Shanghai Pudong International Airport     Shanghai                       China                                      7            5
       29 Munich Airport                            Munich                         Germany                                    6            4
       30 Dublin Airport                            Dublin                         Ireland                                    5            3
       31 Seattle-Tacoma International Airport      Seattle                        United States                              4            2
       32 Abu Dhabi International Airport           Abu Dhabi                      United Arab Emirates                       7            5
       33 Vancouver International Airport           Vancouver                      Canada                                     6            4
```

7. Data

```
SQL> select * from airlines;

 AIRLINEID AIRLINENAME
---------- --------------------------------------------------
         1 American Airlines
         2 Delta Air Lines
         3 United Airlines
         4 Southwest Airlines
         5 Emirates
         6 Lufthansa
         7 British Airways
         8 Air France
         9 Qantas Airways
        10 Singapore Airlines
        11 Cathay Pacific

 AIRLINEID AIRLINENAME
---------- --------------------------------------------------
        12 Qatar Airways
        13 Turkish Airlines
        14 Etihad Airways
        15 ANA (All Nippon Airways)
        16 Virgin Atlantic
        17 KLM Royal Dutch Airlines
        18 Japan Airlines
        19 Air Canada
        20 Air New Zealand
        21 Virgin Australia
        22 Swiss International Air Lines
```

7. Data

```
SQL> select * from airlinesaeroplanes;

AIRLINESAEROPLANESID  AIRLINEID AEROPLANEID
-------------------- ---------- -----------
                   1          1           1
                   2          2           2
                   3          3           5
                   4          4           7
                   5          5           8
                   6          6          10
                   7          7          12
                   8          8          13
                   9          9          16
                  10         10          18
                  11         11          20

AIRLINESAEROPLANESID  AIRLINEID AEROPLANEID
-------------------- ---------- -----------
                  12         12          22
                  13         13          24
                  14         14          25
                  15         15          27
                  16         16          29
                  17         17          31
                  18         18          33
                  19         19          35
                  20         20          37
                  21         21          39
                  22         22          41

AIRLINESAEROPLANESID  AIRLINEID AEROPLANEID
-------------------- ---------- -----------
                  23         23          43
                  24         24          45
                  25         25          47
                  26         26          49
                  27         27          51
                  28         28          52
                  29         29          53
                  30         30          54
                  31         31          55
                  32         32          56
                  33         33          57
```

7. Data

```
SQL> select * from aeroplanes;

AEROPLANESID AEROPLANET AEROPLANECAPACITYID
------------ ---------- -------------------
           1 Passenger                    1
           2 Passenger                    2
           3 Goods                        3
           4 Goods                        4
           5 Passenger                    5
           6 Goods                        6
           7 Passenger                    7
           8 Passenger                    8
           9 Goods                        9
          10 Passenger                   10
          11 Goods                       11

AEROPLANESID AEROPLANET AEROPLANECAPACITYID
------------ ---------- -------------------
          12 Passenger                   12
          13 Passenger                   13
          14 Goods                       14
          15 Goods                       15
          16 Passenger                   16
          17 Goods                       17
          18 Passenger                   18
          19 Goods                       19
          20 Passenger                   20
          21 Goods                       21
          22 Passenger                   22
```

7. Data

```
SQL> select * from aeroplanecapacity;

AEROPLANECAPACITYID TOTALCAPACITY ECONOMYCLASSCAPACITY PREMIUMECONOMYCLASSCAPACITY BUSINESSCLASSCAPACITY FIRSTCLASSCAPACITY
------------------- ------------- --------------------- ---------------------------- ---------------------- --------------------
                  1           200                   150                           25                     20                    5
                  2           180                   130                           30                     15                    5
                  5           250                   180                           40                     25                    5
                  7           220                   160                           30                     20                   10
                  8           210                   150                           35                     20                    5
                 10           230                   170                           40                     15                    5
                 12           240                   180                           40                     15                    5
                 13           220                   150                           40                     25                    5
                 16           200                   140                           40                     15                    5
                 18           210                   150                           40                     15                    5
                 20           240                   180                           30                     20                   10

AEROPLANECAPACITYID TOTALCAPACITY ECONOMYCLASSCAPACITY PREMIUMECONOMYCLASSCAPACITY BUSINESSCLASSCAPACITY FIRSTCLASSCAPACITY
------------------- ------------- --------------------- ---------------------------- ---------------------- --------------------
                 22           220                   160                           40                     15                    5
                 24           230                   170                           30                     20                   10
                 25           250                   180                           40                     20                   10
                 27           230                   160                           50                     15                    5
                 29           240                   170                           40                     25                    5
                 31           220                   150                           40                     25                    5
                 33           230                   160                           40                     20                   10
                 35           240                   180                           40                     15                    5
                 37           220                   150                           50                     15                    5
                 39           250                   180                           40                     25                    5
                 41           240                   170                           40                     25                    5

AEROPLANECAPACITYID TOTALCAPACITY ECONOMYCLASSCAPACITY PREMIUMECONOMYCLASSCAPACITY BUSINESSCLASSCAPACITY FIRSTCLASSCAPACITY
------------------- ------------- --------------------- ---------------------------- ---------------------- --------------------
                 43           230                   160                           40                     20                   10
                 45           240                   180                           40                     15                    5
                 47           220                   150                           50                     15                    5
                 49           250                   180                           40                     20                   10
                  3           150                     0                            0                      0                    0
                  4           180                     0                            0                      0                    0
                  6           200                     0                            0                      0                    0
                  9           190                     0                            0                      0                    0
                 11           210                     0                            0                      0                    0
                 14           220                     0                            0                      0                    0
                 15           230                     0                            0                      0                    0
```

7. Data

```
SQL> select * from airlinecrew;

    CREWID CREWFIRSTNAME                CREWLASTNAME                C CREWCOUNTRY                AIRLINEID
---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
         1 John                        Smith                       M United States                      1
         2 Emily                       Johnson                     F United States                      1
         3 Michael                     Williams                    M United Kingdom                     1
         4 Sophia                      Brown                       F United Kingdom                     1
         5 David                       Jones                       M Australia                          1
         6 Olivia                      Miller                      F Australia                          1
         7 Daniel                      Wilson                      M Canada                             1
         8 Emma                        Moore                       F Canada                             1
         9 Matthew                     Taylor                      M France                             1
        10 Isabella                    Anderson                    F France                             1
        11 Mark                        Davis                       M United States                      2

    CREWID CREWFIRSTNAME                CREWLASTNAME                C CREWCOUNTRY                AIRLINEID
---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
        12 Ava                         Martinez                    F United States                      2
        13 Jacob                       Hernandez                   M United Kingdom                     2
        14 Mia                         Lopez                       F United Kingdom                     2
        15 Ethan                       Garcia                      M Australia                          2
        16 Amelia                      Adams                       F Germany                            3
        17 Noah                        Wright                      M Germany                            3
        18 Liam                        Russell                     M France                             3
        19 Charlotte                   Young                       F France                             3
        20 Ella                        King                        F Australia                          3
        21 Lucas                       Scott                       M Canada                             4
        22 Lily                        Hall                        F Canada                             4

    CREWID CREWFIRSTNAME                CREWLASTNAME                C CREWCOUNTRY                AIRLINEID
---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
        23 Alexander                   Morris                      M Italy                              4
        24 Grace                       Nelson                      F Italy                              4
        25 James                       Baker                       M Spain                              4
        26 Oliver                      Gomez                       M Spain                              5
        27 Harper                      Hill                        F Brazil                             5
        28 Benjamin                    Adams                       M Brazil                             5
        29 Evelyn                      Flores                      F Mexico                             5
        30 Logan                       Rivera                      M Mexico                             5
        31 Jacob                       Lee                         M Malaysia                           6
        32 Sophia                      Chen                        F Malaysia                           6
        33 Daniel                      Wong                        M Singapore                          6
```

7. Data

```
SQL> select * from flightcrewhostess;

FLIGHTCREWHOSTESSID FLIGHTCREWID AIRELINECREWID
------------------- ------------ -------------
                  1            1             1
                  2            1             2
                  3            1             3
                  4            1             4
                  5            1             5
                  6            1             6
                  7            1             7
                  8            1             8
                  9            1             9
                 10            1            10
                 11            2             6

FLIGHTCREWHOSTESSID FLIGHTCREWID AIRELINECREWID
------------------- ------------ -------------
                 12            2             7
                 13            2             8
                 14            2             9
                 15            2            10
                 16            2            11
                 17            2            12
                 18            2            13
                 19            2            14
                 20            2            15
                 21            3            16
                 22            3            17

FLIGHTCREWHOSTESSID FLIGHTCREWID AIRELINECREWID
------------------- ------------ -------------
                 23            3            18
                 24            3            19
                 25            3            20
                 26            4            21
                 27            4            22
                 28            4            23
                 29            4            24
                 30            4            25
                 31            5            26
                 32            5            27
                 33            5            28
```

7. Data

```
SQL> select * from flightcrew;
```

FLIGHTCREWID	FLIGHTID	PILOTID	COPILOTID	NUMBEROFAIRHOSTESSES	HEADAIRHOSTESSID
1	101	1	2	8	3
2	102	11	12	3	13
3	103	16	17	3	18
4	104	21	22	3	23
5	105	26	27	3	28
6	106	31	32	3	33
7	107	36	37	3	38
8	108	41	42	2	43
9	109	46	47	3	48
10	110	51	52	3	53
11	111	56	57	3	58
FLIGHTCREWID	FLIGHTID	PILOTID	COPILOTID	NUMBEROFAIRHOSTESSES	HEADAIRHOSTESSID
12	112	61	62	3	63
14	114	71	72	4	73
15	115	76	77	4	78
16	116	81	82	4	83
17	117	86	87	4	88
18	118	91	92	4	93
19	119	96	97	4	99
20	120	100	101	4	104
21	121	106	107	4	108
22	122	110	111	3	112
23	123	116	117	4	119