



Bachelor of Information Technology

Assessment Title:

Terra Firma Airline Case Study

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Subject:

Data Management

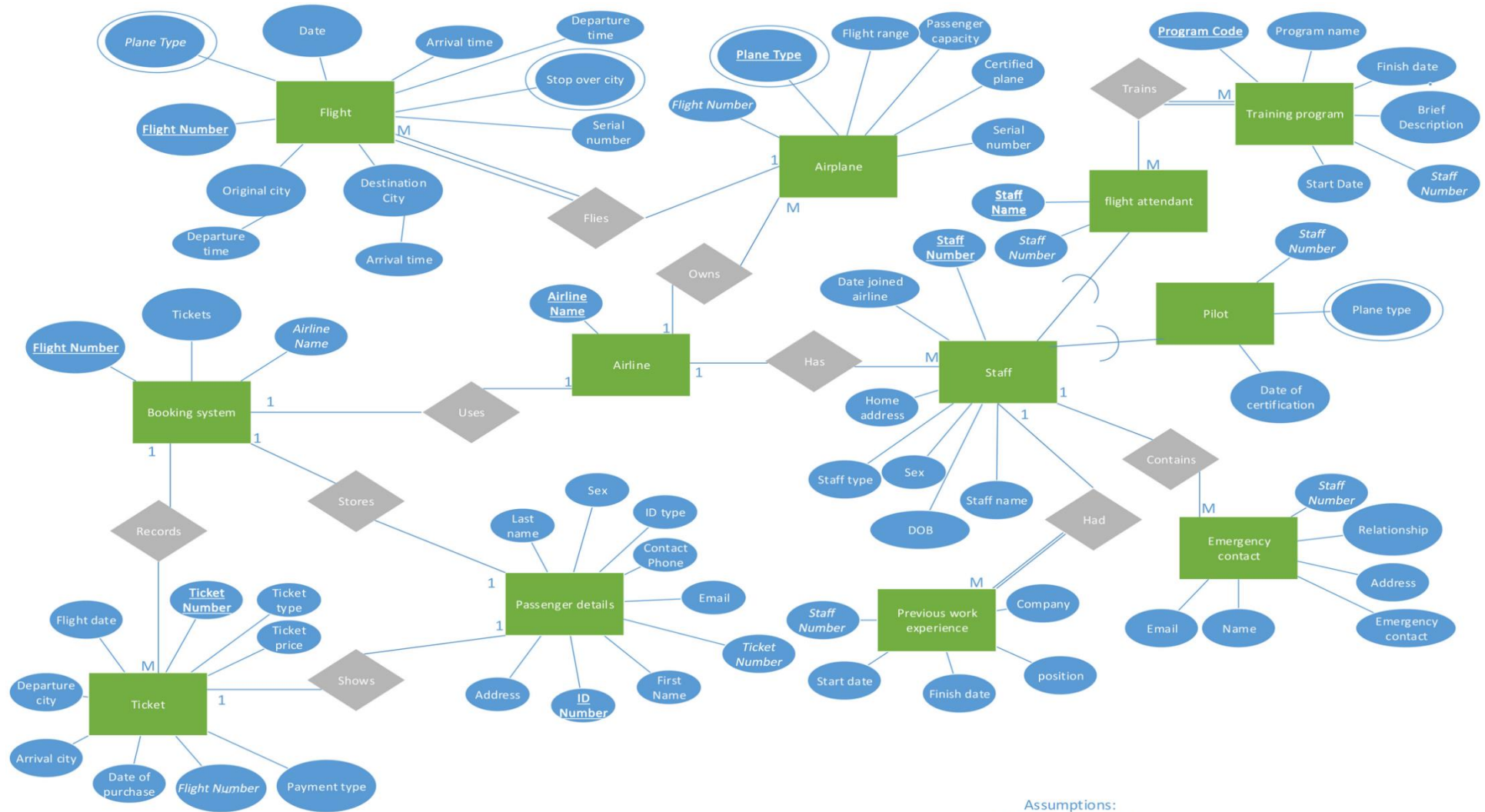
Task Due:

Friday 14th October 2016

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Task 1



Assumptions:

- Pilot is also a co-pilot
- Pilot can work as captain on one scheduled flight and as a co-pilot on another
- Staff had to have at least 1 previous work experience

Figure 1.0: Entity Relational Diagram

Task 2

Tables:

Airline (AirlineName)

Booking system (FlightNumber, AirlineName, Tickets)

FKs: AirlineName references Airline(AirlineName)

Ticket (TicketNumber, flightNumber, flightDate, dateOfPurchase, ticketType, departureCity, arrivalCity, paymentType)

FKs: Flightnumber references Booking system(Flightnumber)

Passenger (IDNumber, ticketNumber, IDType, firstName, lastName, Sex, Email, contactPhone, Address)

FKs: Ticketnumber references Ticket (Ticketnumber)

Airplane (PlaneType, flightNumber, Serialnumber, flightRange, passengerCapacity, certifiedPlane,)

FKs: Flightnumber references flight(flightnumber)

Flight (flightNumber, planeType, Date, originCity, departTime, destinationCity, arrivalTime1, stopOverCity, arrivalTime2, departTime, flightStaff)

FKs: Planetype references Airplane(planetype)

Staff (staffNumber, homeAddress, staffName, staffType, DOB, dateJoinedAirline, sex)

Pilot (staffNumber, planeType, dateOfCertification)

FKs: staffNumber references staff(staffNumber)

Flight Attendant (staffName, staffNumber)

FKs: StaffNumber references staff(StaffNumber)

Training program (ProgramCode staffNumber, startDate, endDate, briefDescription, ProgramName)

FKs: StaffNumber references staff(StaffNumber)

Emergency Contact (emergencyContact, staffNumber, Name, Email, Phone, Address, relationship)

FKs: StaffNumber references staff(StaffNumber)

Previous work experience (Staff Number, Company, Position, startDate, endDate)

FKs: StaffNumber references staff(StaffNumber)

Relational Schema:

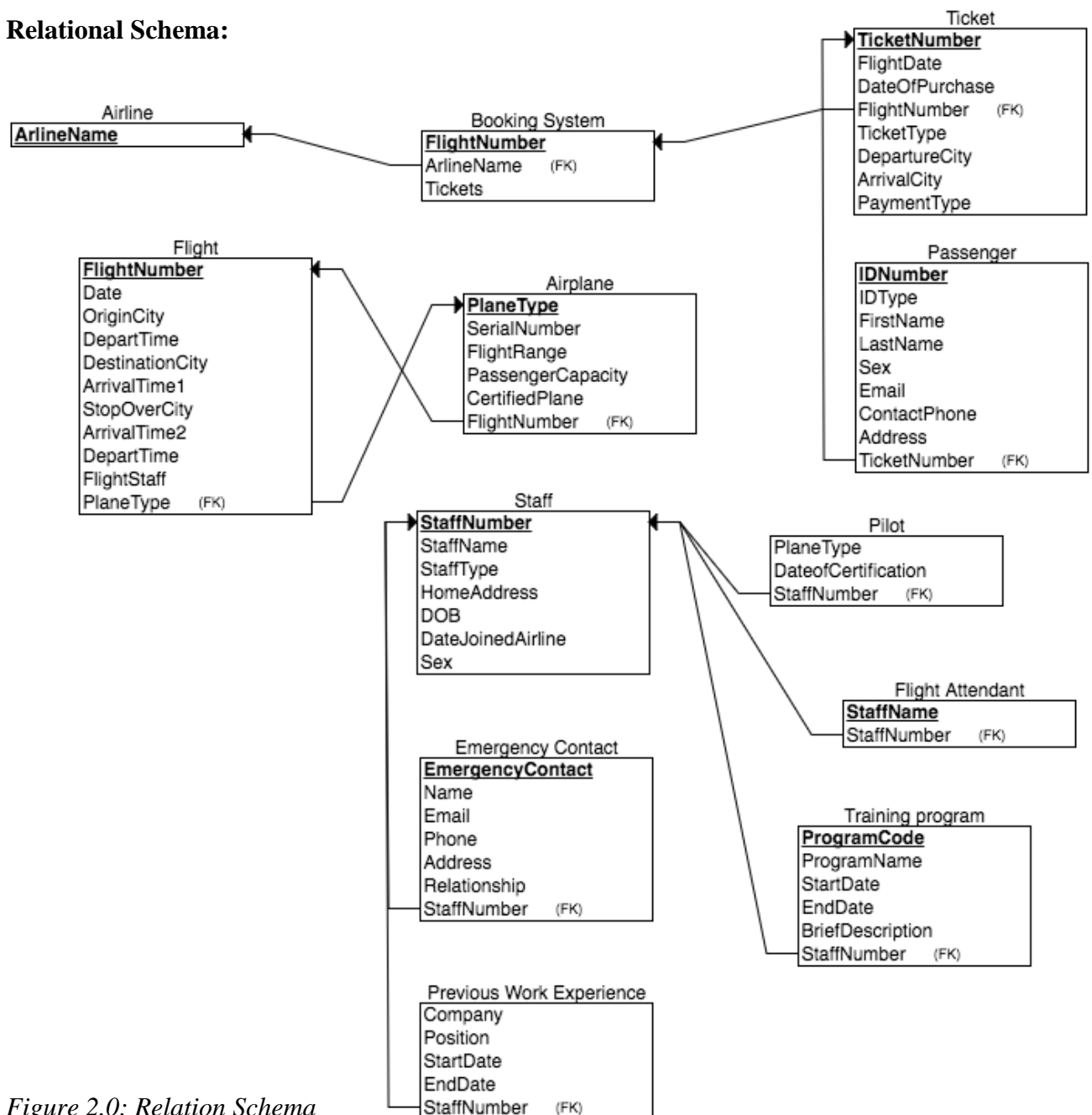


Figure 2.0: Relation Schema

Airline:

| <u>Airline Name</u> |
|---------------------|
| Terra Firma |

Airplane:

| <u>Plane Type</u> | Flight Range | Passenger Capacity | Certified Plane | Serial Number | <i>Flight Number</i> |
|-------------------|--------------|--------------------|-----------------|---------------|----------------------|
| Boeing 767 | 50000km | 200 | Yes | BO767 | TF0001 |
| Boeing 747 | 40000km | 150 | Yes | BO747 | TF0002 |
| Boeing 777 | 48000km | 195 | Yes | BO777 | TF0003 |
| Airbus A330 | 60000km | 250 | Yes | AO330 | TF0004 |
| Airbus A380 | 90000km | 400 | Yes | AO380 | TF0005 |

Booking System:

| <i>Airline Name</i> | <u>Flight Number</u> | Tickets |
|---------------------|----------------------|---------|
| Terra Firma | TF0001 | 187 |
| Terra Firma | TF0002 | 149 |
| Terra Firma | TF0003 | 150 |
| Terra Firma | TF0004 | 201 |
| Terra Firma | TF0005 | 369 |

Flight:

| <u>Flight Number</u> | Date | Origin City | Depart Time | Destination City | Arrival Time | Stop Over City | Arrival Time | Depart Time | Plane Type |
|----------------------|------------|-------------|-------------|------------------|--------------|----------------|--------------|-------------|------------|
| TF0002 | 05/05/2016 | Gold Coast | 10:01 am | Sydney | 11:01 am | Null | Null | Null | Boeing 747 |
| TF0001 | 06/05/2016 | Sydney | 4:45 pm | New Delhi | 7:30 am | Singapore | 11:45 pm | 2:00 am | Boeing 767 |
| TF0003 | 12/06/2016 | New Delhi | 6:00 am | Sydney | 3:00 am | Singapore | 11:00 am | 4:00 pm | Boeing 777 |
| TF0005 | 14/06/2016 | Los Angeles | 1:00 pm | Sydney | 9:00 am | Null | Null | Null | Airbus 380 |
| TF0004 | 19/06/2016 | Sydney | 10:30 am | Los Angeles | 2:00 pm | Null | Null | Null | Airbus 330 |

Flight Attendant:

| <u>Staff Number</u> | <u>Flight Attendant Name</u> |
|---------------------|------------------------------|
| F50871029 | Diana Dropolis |
| G23850971 | Harry Johnston |
| A47182840 | Adam Troysan |
| B12749871 | Lee Pinpo |
| P48570203 | Tiki Mane |
| U23213874 | Opa Lulu |
| T12875093 | Peter Williams |
| W47293847 | Luke Collins |

Passenger Details:

| <i>Ticket Number</i> | ID Number | ID Type | First Name | Last Name | Sex | Email | Contact Phone | Address |
|----------------------|------------------|----------|------------|------------|--------|--|---------------|--|
| TFN123 | P127838 | Passport | John | Chen | Male | j.m@hotmail.com | +61426897587 | 123 Fake St. Central 2916, USA |
| TFN467 | P6544785 | Passport | Jack | Santias | Male | j.s@gmail.com | +61422222222 | 69 Blaze St. Downtown, USA |
| TFN282 | P3284591 | Passport | Jackie | Dillon | Male | j.d@yahoo.com | +61439285739 | 1 Heidel Circuit, Australia |
| TFN785 | P1239874 | Passport | Jessica | So | Female | j.s1@gmail.com | +61452441522 | 23 Stringy St., New Zealand |
| TFN324 | P3792311 | Passport | Jordan | Shibinoski | Female | j.s2@gmail.com | +61128937293 | 12 Clear Crescent, Armadale, Australia |

Pilot:

| <i>Staff Number</i> | Plane Type | Date of Certification |
|---------------------|--------------|-----------------------|
| Y20394701 | Brian Senilu | 01/04/2012 |
| I23098401 | Jess Terana | 17/09/2011 |

Previous Work Experience:

| <i>Staff Number</i> | Company | Position | Start Date | End Date |
|---------------------|--------------------|------------------|------------|------------|
| F50871029 | Qantas | Flight Attendant | 01/01/2012 | 01/01/2013 |
| G23850971 | Jetstar | Flight Attendant | 01/01/2012 | 01/01/2013 |
| A47182840 | Tigerair | Flight Attendant | 01/01/2012 | 01/01/2013 |
| B12749871 | Virgin Airways | Flight Attendant | 01/01/2012 | 01/01/2013 |
| P48570203 | Qantas | Flight Attendant | 01/01/2012 | 01/01/2013 |
| U23213874 | Qantas | Flight Attendant | 01/01/2012 | 01/01/2013 |
| T12875093 | Jetstar | Flight Attendant | 01/01/2012 | 01/01/2013 |
| W4729384 | Virgin Airways | Flight Attendant | 01/01/2012 | 01/01/2013 |
| Y20394701 | Jetstar | Pilot | 01/01/2012 | 01/01/2013 |
| I23098401 | Tigerair | Pilot | 01/01/2012 | 01/01/2013 |
| Z10834799 | Qantas | Cleaner | 01/01/2012 | 01/01/2013 |
| M3487192 | Singapore Airlines | Cleaner | 01/01/2012 | 01/01/2013 |

Staff:

| <u>Staff Number</u> | Staff Name | Staff type | Sex | Date Of Birth (DOB) | Home Address | Date Joined |
|---------------------|----------------|------------------|-----|---------------------|---------------------------------------|-------------|
| F50871029 | Diana Dropolis | Flight attendant | F | 21/09/1987 | 4 Jesus st, Tampinese, Singapore | 10/03/2013 |
| G23850971 | Harry Johnston | Flight attendant | M | 11/06/1992 | 159 Ainsley st, Parramatta, Australia | 10/03/2013 |
| A47182840 | Adam Troysan | Flight attendant | M | 16/08/1995 | 48 Kingstrong st, Alabama, US | 10/03/2013 |
| B12749871 | Lee Pinpo | Flight attendant | M | 20/12/1989 | 20 Xiuxan st, Lingho, China | 10/03/2013 |
| P48570203 | Tiki Mane | Flight attendant | M | 6/03/1978 | 29 Murray Way, Nerang, Australia | 11/01/2014 |
| U23213874 | Opa Lulu | Flight attendant | F | 12/05/1996 | 1 Harrison st, Petone, New Zealand | 11/01/2014 |
| T12875093 | Peter Williams | Flight attendant | M | 28/11/1991 | 41 Sington st, Maryborough, Australia | 11/01/2014 |
| W4729384 | Luke Collins | Flight attendant | M | 30/06/1989 | 10 Victop st, Warrick, Australia | 11/01/2014 |
| Y20394701 | Brian Senilu | Pilot | M | 7/10/1988 | 769 Van dyke rd, | 14/06/2012 |

| | | | | | | |
|-----------|-----------------|---------|---|------------|--|------------|
| | | | | | Cedar Falls, US | |
| I23098401 | Jess Terana | Pilot | F | 24/03/1987 | 3352 Arlington Avenue, Stamford US | 20/10/2011 |
| Z10834799 | Tim Turner | Cleaner | M | 13/05/1967 | 20 Begley st, Peeramon, Australia | 1/08/2010 |
| M3487192 | Mariah Miles | Cleaner | F | 27/09/1988 | 68 Begley st, Adelaide, Australia | 2/01/2012 |

Emergency Contacts:

| <i>Staff Number</i> | Name | Email | Address | Relationship | Emergency Contact |
|---------------------|----------------|-----------------------------|---------------------------------------|--------------|-------------------|
| F50871029 | Josh Dropolis | Diana.Dro164@gmail.com | 4 Jesus st, Tampinese, Singapore | Brother | +447700900610 |
| G23850971 | Liam Johnston | Harry.johnston219@gmail.com | 159 Ainsley st, Parramatta, Australia | Brother | +447700900348 |
| A47182840 | Amba Troysan | Adam.troysan391@gmail.com | 48 Kingstrong st, Alabama, US | Mother | +447700900237 |
| B12749871 | Chin Pinpo | Lee.pinpo22@gmail.com | 20 Xiuxan st, Lingho, China | Brother | +447700906930 |
| P48570203 | Lele Mane | Tikima.ne21@gmail.com | 29 Murray Way, Nerang, Australia | Sister | +447700923820 |
| U23213874 | Paka Lulu | Opa.lulu1208@gmail.com | 1 Harrison st, Petone, New Zealand | Sister | +447700958208 |
| T12875093 | Hanna Williams | Petewill1293@gmail.com | 41 Sington st, Maryborough, Australia | Sister | +447700948200 |
| W4729384 | John Collins | Luke.collins12083@gmail.com | 10 Victop st, Warrick, Australia | Father | +447700900484 |

| | | | | | |
|-----------|---------------|---------------------------|--|---------|---------------|
| Y20394701 | Luke Senilu | Briansenilu2309@gmail.com | 769 Van dyke rd, Cedar Falls, US | Brother | +447700900488 |
| I23098401 | Tom Terana | Jess.Terana1308@gmail.com | 3352 Arlington Avenue, Stamford US | Brother | +447700994792 |
| Z10834799 | Amanda Turner | Tim.Turner20384@gmail.com | 20 Begley st, Pearamon, Australia | Sister | +447700900392 |
| M3487192 | Bruce Miles | Mariah.Miles475@gmail.com | 68 Begley st, Adelaide, Australia | Father | +447700900482 |

Training Program:

| <i>Staff Number</i> | <u>Program Code</u> | Program Name | Start Date | End Date | Brief Description |
|---------------------|---------------------|----------------------------------|------------|------------|------------------------------|
| F50871029 | PRC5678 | The future plane assistants | 10/02/2011 | 12/08/2011 | Satisfactory work completed. |
| G23850971 | PRC5677 | The school for flight attendants | 9/02/2011 | 14/08/2011 | Satisfactory work completed. |
| A47182840 | PRC5676 | Flight crew school | 10/02/2011 | 11/08/2011 | Satisfactory work completed. |
| B12749871 | PRC5675 | To fly with you school | 8/02/2011 | 13/08/2011 | Satisfactory work completed. |
| P48570203 | PRC5677 | The school for flight attendants | 1/02/2012 | 5/08/2012 | Satisfactory work completed. |
| U23213874 | PRC5677 | The school for flight attendants | 1/02/2012 | 5/08/2012 | Satisfactory work completed. |
| T12875093 | PRC5675 | To fly with you school | 8/02/2012 | 13/08/2012 | Satisfactory work completed. |
| W4729384 | PRC5678 | The future plane assistants | 10/02/2012 | 12/08/2012 | Satisfactory work completed. |

Ticket:

| <i>Flight Number</i> | <u>Ticket Number</u> | Payment Type | Ticket Type | Ticket Price | Flight Date | Departure City | Arrival City | Date of Purchase |
|----------------------|-----------------------------|--------------|-------------|--------------|-------------|----------------|--------------|------------------|
| TF0001 | TFN123 | VISA | Business | \$2500 | 06/05/2016 | Sydney | New Delhi | 06/01/2016 |
| TF0002 | TFN467 | VISA | Economy | \$600 | 05/05/2016 | Gold Coast | Sydney | 05/01/2016 |
| TF0003 | TFN282 | Cash | Economy | \$800 | 12/06/2016 | New Delhi | Sydney | 12/03/2016 |
| TF0004 | TFN785 | VISA | Economy | \$750 | 19/06/2016 | Sydney | Los Angeles | 19/03/2016 |
| TF0005 | TFN324 | Cash | Business | \$4000 | 14/06/2016 | Los Angeles | Sydney | 14/04/2016 |

Task 3

The tables were made into 3NF to reduce data redundancy. Data redundancy is where there are two columns that agree with a column. An example of this is between flights and planes, where the two entities could've been combined into one. The two entities are related because of a common attribute. If data was deleted from the flight's table that particular row where the data was data would also be deleted but for it's FK in the plane table, no data would be affected. Only one table can be modified, deleted, inserted.

| Table Name | Attributes | Description | Type | Constraint |
|--------------------------|--|--|-------------------------------------|----------------------|
| Airline | AIRLINENAME | Airline Name | CHAR(11 BYTE) | NOT NULL |
| Airplane | PLANETYPE | Type of Plane | CHAR(11) | NOT NULL |
| | FLIGHTRANGE | Flight Range | NUMBER(5,0) | |
| | PASSENGERCAPACITY | Passenger Capacity | NUMBER(3,0) | |
| | CERTIFIEDPLANE | Certified Plane | CHAR(3) | NOT NULL |
| | SERIALNUMBER | Serial Number | CHAR(8) | NOT NULL |
| | FLIGHTNUMBER | Flight Number | CHAR(8) | NOT NULL |
| Booking System | AIRLINENAME FLIGHTNUMBER TICKETS | Airline Name Flight Number Tickets | CHAR(11) CHAR(8) NUMBER(3,0) | NOT NULL NOT NULL |
| Emergency Contact | STAFFNUMBER | Staff Number | CHAR(12) | NOT NULL |
| | NAME | Full Name | VARCHAR2(20) | |
| | EMAIL | Email | VARCHAR2(30) | |
| | ADDRESS | Home Address | VARCHAR2(40) | |
| | RELATIONSHIP | Relationship | CHAR(10) | |
| | EMERGENCYCONTACT | Emergency Contact | NUMBER(15,0) | NOT NULL |
| Flight | FLIGHTNUMBER | Flight Number | CHAR(8) | NOT NULL |
| | FLIGHTDATE | Flight Date | DATE | |
| | ORIGINCITY | Origin City | VARCHAR2(20) | |
| | DEPARTTIME1 | Depart Time 1 | CHAR(6) | |
| | DESTINATIONCITY | Destination City | VARCHAR2(20) | |
| | ARRIVALTIME1 | Arrival Time 1 | CHAR(6) | |
| | STOPOVERCITY | Stop Over City | VARCHAR2(20) | |
| | ARRIVALTIME2 | Arrival Time 2 | CHAR(6) | |
| | DEPARTTIME2 | Depart Time 2 | CHAR(6) | |
| | PLANETYPE | Type of Plane | CHAR(11) | |

| | | | | |
|--------------------------|--|--|--|--|
| Flight Attendant | STAFFNUMBER STAFFNAME | Staff Number Staff Name | CHAR(12) VARCHAR2(20) | NOT NULL |
| Passenger Details | TICKETNUMBER IDNUMBER IDTYPE FIRSTNAME LASTNAME PASSENGERSEX PASSENGEREMAIL CONTACTPHONE ADDRESS | Ticket Number ID Number ID Type First Name Last Name Passenger Sex Passenger Email Contact Phone Home Address | CHAR(6) CHAR(8) CHAR(8) VARCHAR2(20) VARCHAR2(20) CHAR(2) VARCHAR2(30) NUMBER(15,0) VARCHAR2(40) | NOT NULL NOT NULL NOT NULL 'M' OR 'F' |
| Pilot | STAFFNUMBER PLANETYPE DATEOFCERTIFICATION | Staff Number Type of Plane Date of Certification | CHAR(12) VARCHAR2(12) DATE | NOT NULL NOT NULL |
| Previous Work Exp | STAFFNUMBER COMPANY POSITION STARTDATE ENDDATE | Staff Number Company Position Start Date End Date | CHAR(12) CHAR(20) VARCHAR2(20) DATE DATE | NOT NULL |
| Staff | STAFFNUMBER STAFFNAME STAFFTYPE STAFFSEX STAFFDOB HOMEADDRESS DATEJOINEDAIRLINE | Staff Number Staff Name Staff Type Staff Sex Staff Date of Birth Home Address Date Joined Airline | CHAR(12) VARCHAR2(20) VARCHAR2(16) CHAR(2) DATE VARCHAR2(40) DATE | NOT NULL 'M' OR 'F' |
| Ticket | FLIGHTNUMBER TICKETNUMBER PAYMENTTYPE TICKETTYPE TICKETPRICE FLIGHTDATE DEPARTURECITY ARRIVALCITY DATEOFPURCHASE | Flight Number Ticket Number Payment Type Ticket Type Ticket Price Flight Date Departure City Arrival City Date Of Purchase | CHAR(8) CHAR(6) CHAR(4) CHAR(8) NUMBER(5,0) DATE VARCHAR2(20) VARCHAR2(20) DATE | NOT NULL NOT NULL |
| Training Program | STAFFNUMBER PROGRAMCODE PROGRAMNAME | Staff Number Program Code Program Name | CHAR(12) CHAR(7) VARCHAR2(40) | NOT NULL NOT NULL |

| | | | | |
|--|--|--|------------------------------|--|
| | STARTDATE ENDDATE BRIEFDESCRIPTION | Start Date End Date Brief Description | DATE DATE VARCHAR2(30) | |
|--|--|--|------------------------------|--|

Task 4

Query 1: For each airplane (given the serial number), list the type code, type description, capacity and flight range, manufacture date, purchase date, and the next service date.

```
SELECT *
FROM Airplane;
```

Output:

| Plane Type | Flight Range | Passenger Capacity | Certified Plane | Serial Number | Flight Number |
|-------------|--------------|--------------------|-----------------|---------------|---------------|
| Boeing 767 | 50000 | 200 | Yes | BO767 | TF0001 |
| Boeing 747 | 40000 | 150 | Yes | BO747 | TF0002 |
| Boeing 777 | 48000 | 195 | Yes | BO777 | TF0003 |
| Airbus A330 | 60000 | 250 | Yes | AO330 | TF0004 |
| Airbus A380 | 90000 | 400 | Yes | AO380 | TF0005 |

Query 2: For each pilot (given the staff number), list the pilot name, the type code and description of each of the types of planes on which the pilot is certified.

```
SELECT s.staffnumber, s.STAFFNAME, p.PLANETYPE, p.DATEOFCERTIFICATION
FROM Staff s, Pilot p
WHERE s.staffNumber = p.staffNumber;
```

Output:

| Staff Number | Staff Name | Plane Type | Date Of Certification |
|--------------|--------------|--------------|-----------------------|
| Y20394701 | Brian Senilu | Boeing Class | 01/APR/12 |
| I23098401 | Jess Terana | Airbus Class | 17/SEP/11 |

Query 3: List the flight number, date and airplane serial number for all flights on which the pilot is currently scheduled using the pilot staff number.

```
SELECT f.FLIGHTNUMBER, f.FLIGHTDATE, a.SERIALNUMBER, s.STAFFNUMBER
FROM Flight f, Airplane a, Staff s
WHERE f.PLANETYPE = a.PLANETYPE AND s.stafftype = 'Pilot';
```

Output:

| Flight Number | Flight Date | Serial Number | Staff Number |
|---------------|-------------|---------------|--------------|
| TF0002 | 05/MAY/16 | BO747 | I23098401 |
| TF0002 | 05/MAY/16 | BO747 | Y20394701 |
| TF0001 | 06/MAY/16 | BO767 | I23098401 |
| TF0001 | 06/MAY/16 | BO767 | Y20394701 |
| TF0003 | 12/JUN/16 | BO777 | I23098401 |
| TF0003 | 12/JUN/16 | BO777 | Y20394701 |
| TF0005 | 14/JUN/16 | AO380 | I23098401 |
| TF0005 | 14/JUN/16 | AO380 | Y20394701 |
| TF0004 | 05/JUN/16 | AO330 | I23098401 |
| TF0004 | 05/JUN/16 | AO330 | Y20394701 |

Query 4: For each city served, list the city name, the state, and a description of the airport (we assume each city has only one airport).

```
SELECT ORIGINCITY, STOPOVERCITY
FROM Flight;
```

Output:

| Origin City | Stop Over City |
|-------------|----------------|
| Gold Coast | |
| Sydney | Singapore |
| New Delhi | Singapore |
| Los Angeles | |
| Sydney | |

Query 5: For each city (given the city name), produce a list of the flights scheduled to arrive or depart within the next 24 hours. The list should include the flight number, the time of arrival or departure in ascending order of time.

```
SELECT FLIGHTNUMBER, ORIGINCITY, DEPARTTIME1, DESTINATIONCITY, ARRIVALTIME1,
       STOPOVERCITY, ARRIVALTIME2, DEPARTTIME2
FROM Flight
ORDER BY DEPARTTIME1;
```

Output:

| Flight Number | Origin City | Depart Time 1 | Destination City | Arrival Time 1 | Stop Over City | Arrival Time 2 | Depart Time 2 |
|---------------|-------------|---------------|------------------|----------------|----------------|----------------|---------------|
| TF0003 | New Delhi | 0600 | Sydney | 0300 | Singapore | 1100 | 1600 |
| TF0002 | Gold Coast | 1001 | Sydney | 1101 | | | |
| TF0004 | Sydney | 1030 | Los Angeles | 0200 | | | |
| TF0005 | Los Angeles | 1300 | Sydney | 0900 | | | |
| TF0001 | Sydney | 1645 | New Delhi | 0730 | Singapore | 2345 | 0200 |

Query 6: Given flight number, list origination city, stop-over city (if applicable), and destination city as well as the departure and/or arrival times at these cities.

```
SELECT FLIGHTNUMBER, ORIGINCITY, DEPARTTIME1, DESTINATIONCITY, ARRIVALTIME1,
       STOPOVERCITY, ARRIVALTIME2, DEPARTTIME2
FROM Flight;
```

Output:

| Flight Number | Origin City | Depart Time 1 | Destination City | Arrival Time 1 | Stop Over City | Arrival Time 2 | Depart Time 2 |
|---------------|-------------|---------------|------------------|----------------|----------------|----------------|---------------|
| TF0002 | Gold Coast | 1001 | Sydney | 1101 | | | |
| TF0001 | Sydney | 1645 | New Delhi | 0730 | Singapore | 2345 | 0200 |
| TF0003 | New Delhi | 0600 | Sydney | 0300 | Singapore | 1100 | 1600 |
| TF0005 | Los Angeles | 1300 | Sydney | 0900 | | | |
| TF0004 | Sydney | 1030 | Los Angeles | 0200 | | | |

Query 7: For a scheduled flight, list the captain, the co-pilot, the flight attendants, and the airplane serial number.

```
SELECT distinct(s.STAFFTYPE), s.STAFFNAME, a.SERIALNUMBER
FROM Flight f, Staff s, Airplane a
WHERE f.PLANETYPE = a.PLANETYPE
AND s.STAFFTYPE = 'Pilot'
OR s.STAFFTYPE = 'Flight Attendant'
ORDER BY a.SERIALNUMBER;
```

Output:

| Staff Type | Staff Name | Serial Number |
|------------------|----------------|---------------|
| Flight Attendant | Adam Troysan | AO330 |
| Pilot | Brian Senilu | AO330 |
| Flight Attendant | Diana Dropolis | AO330 |
| Flight Attendant | Harry Johnston | AO330 |
| Pilot | Jess Terana | AO330 |
| Flight Attendant | Lee Pinpo | AO330 |
| Flight Attendant | Luke Collins | AO330 |
| Flight Attendant | Opa Lulu | AO330 |
| Flight Attendant | Peter Williams | AO330 |
| Flight Attendant | Tiki Mane | AO330 |
| Flight Attendant | Adam Troysan | AO380 |
| Pilot | Brian Senilu | AO380 |
| Flight Attendant | Diana Dropolis | AO380 |
| Flight Attendant | Harry Johnston | AO380 |
| Pilot | Jess Terana | AO380 |
| Flight Attendant | Lee Pinpo | AO380 |
| Flight Attendant | Luke Collins | AO380 |
| Flight Attendant | Opa Lulu | AO380 |
| Flight Attendant | Peter Williams | AO380 |
| Flight Attendant | Tiki Mane | AO380 |
| Flight Attendant | Adam Troysan | BO747 |
| Pilot | Brian Senilu | BO747 |
| Flight Attendant | Diana Dropolis | BO747 |
| Flight Attendant | Harry Johnston | BO747 |
| Pilot | Jess Terana | BO747 |
| Flight Attendant | Lee Pinpo | BO747 |
| Flight Attendant | Luke Collins | BO747 |
| Flight Attendant | Opa Lulu | BO747 |

| | | |
|------------------|----------------|-------|
| Flight Attendant | Peter Williams | BO747 |
| Flight Attendant | Tiki Mane | BO747 |
| Flight Attendant | Adam Troysan | BO767 |
| Pilot | Brian Senilu | BO767 |
| Flight Attendant | Diana Dropolis | BO767 |
| Flight Attendant | Harry Johnston | BO767 |
| Pilot | Jess Terana | BO767 |
| Flight Attendant | Lee Pinpo | BO767 |
| Flight Attendant | Luke Collins | BO767 |
| Flight Attendant | Opa Lulu | BO767 |
| Flight Attendant | Peter Williams | BO767 |
| Flight Attendant | Tiki Mane | BO767 |
| Flight Attendant | Adam Troysan | BO777 |
| Pilot | Brian Senilu | BO777 |
| Flight Attendant | Diana Dropolis | BO777 |
| Flight Attendant | Harry Johnston | BO777 |
| Pilot | Jess Terana | BO777 |
| Flight Attendant | Lee Pinpo | BO777 |
| Flight Attendant | Luke Collins | BO777 |
| Flight Attendant | Opa Lulu | BO777 |
| Flight Attendant | Peter Williams | BO777 |
| Flight Attendant | Tiki Mane | BO777 |

Query 8: For each scheduled flight and a departure city, prepare a customer call list, which includes the ID type, ID number, full name, date of birth, address and contact phone number of the passengers booked to board the flight.

```

SELECT f.FLIGHTNUMBER, f.ORIGINCITY, p.IDTYPE, p.IDNUMBER, p.FIRSTNAME,
       p.LASTNAME, p.ADDRESS, p.CONTACTPHONE, t.TICKETNUMBER
FROM Flight f, PassengerDetails p, Ticket t
WHERE f.FLIGHTNUMBER = t.FLIGHTNUMBER
AND t.TICKETNUMBER = p.TICKETNUMBER;

```

Output:

| Flight Number | Origin City | ID Type | ID Number | First Name | Last Name | Address | Contact Phone | Ticket Number |
|---------------|-------------|----------|-----------|------------|-----------|----------------------------------|---------------|---------------|
| TF0002 | Gold Coast | Passport | P6544785 | Jack | Santias | 69 Blaze St. Downtown, USA | 61422222222 | TFN467 |

| | | | | | | | | |
|--------|-------------|----------|----------|---------|------------|---------------------------------------|-------------|--------|
| TF0001 | Sydney | Passport | P1278381 | John | Chen | 123 Fake St. Central 2916, USA | 61426897587 | TFN123 |
| TF0003 | New Delhi | Passport | P3284591 | Jackie | Dillon | 1 Heidel Circuit, Australia | 61439285739 | TFN282 |
| TF0005 | Los Angeles | Passport | P3792311 | Jordan | Shibinoski | 12 Clear Crescent Armadale, Australia | 61428937293 | TFN324 |
| TF0004 | Sydney | Passport | P1239874 | Jessica | So | 23 Stringy St., New Zealand | 61452441522 | TFN785 |

Query 9: Given a date, an origination city and a destination city, list all scheduled flights and the number of available seats on each flight.

```
SELECT f.FLIGHTDATE, f.ORIGINCITY, f.DESTINATIONCITY, f.FLIGHTNUMBER,
       (a.PASSENGERCAPACITY - b.TICKETS) As FreeSeats
FROM BookingSystem b, Airplane a, Flight f
WHERE b.FLIGHTNUMBER = f.FLIGHTNUMBER
AND f.FLIGHTNUMBER = a.FLIGHTNUMBER;
```

Output:

| Flight Date | Origin City | Destination City | Flight Number | Free Seats |
|-------------|-------------|------------------|---------------|------------|
| 06/MAY/16 | Sydney | New Delhi | TF0001 | 13 |
| 05/MAY/16 | Gold Coast | Sydney | TF0002 | 1 |
| 12/JUN/16 | New Delhi | Sydney | TF0003 | 45 |
| 05/JUN/16 | Sydney | Los Angeles | TF0004 | 49 |
| 14/JUN/16 | Los Angeles | Sydney | TF0005 | 31 |

Query 10: For a given passenger (identified by ID type and ID number), list the flights he or she has been booked on, including the departure/arrival city and time.

```
SELECT p.IDTYPE, p.IDNUMBER, p.TICKETNUMBER, f.FLIGHTNUMBER, f.ORIGINCITY,
       f.DESTINATIONCITY, f.ARRIVALTIME1
FROM PassengerDetails p, Flight f, Ticket t
WHERE p.TICKETNUMBER = t.TICKETNUMBER AND f.FLIGHTNUMBER = t.FLIGHTNUMBER;
```

Output:

| ID Type | ID Number | Ticket Number | Flight Number | Origin City | Destination City | Arrival Time 1 |
|----------|-----------|---------------|---------------|-------------|------------------|----------------|
| Passport | P6544785 | TFN467 | TF0002 | Gold Coast | Sydney | 1101 |
| Passport | P1278381 | TFN123 | TF0001 | Sydney | New Delhi | 0730 |
| Passport | P3284591 | TFN282 | TF0003 | New Delhi | Sydney | 0300 |
| Passport | P3792311 | TFN324 | TF0005 | Los Angeles | Sydney | 0900 |
| Passport | P1239874 | TFN785 | TF0004 | Sydney | Los Angeles | 0200 |

Query 11: For a staff member, list the details of the emergency contact person.

```
SELECT *
FROM EmergencyContact;
```

Output:

| Staff Number | Name | Email | Address | Relationship | Emergency Contact |
|--------------|----------------|-----------------------------|---------------------------------------|--------------|-------------------|
| F50871029 | Josh Dropolis | Diana.Dro164@gmail.com | 4 Jesus St. Tampinese, Singapore | Brother | 447700900610 |
| G23850971 | Liam Johnston | Harry.johnston219@gmail.com | 159 Ainsley St. Parramatta, Australia | Brother | 447700900348 |
| A47182840 | Amba Troysan | Adam.Troysan391@gmail.com | 48 Kingstrong St. Alabama, US | Mother | 447700900237 |
| B12749871 | Chin Pinpo | lee.pinpo22@gmail.com | 20 Xiuxan St. Lingho, China | Brother | 447700906930 |
| P48570203 | Lele Mane | Tikima.ne21@gmail.com | 29 Murray Way, Nerang, Australia | Sister | 447700923820 |
| U23213874 | Paka Lulu | Opa.lulu1208@gmail.com | 1 Harrison St. Petone, New Zealand | Sister | 447700958208 |
| T12875093 | Hanna Williams | Peterwill1293@gmail.com | 41 Sington St. Maryborough, Australia | Sister | 447700948200 |

| | | | | | |
|-----------|------------------|---------------------------|--|---------|--------------|
| Y20394701 | Luke Senilu | Briansenilu2309@gmail.com | 769 Van dyke Rd. Cedar Falls, US | Brother | 447700900488 |
| I23098401 | Tom Terana | Jess.Terana1308@gmail.com | 3352 Arlington Avenue, Stamford, US | Brother | 447700994792 |
| Z10834799 | Amanda Turner | Tim.Turner20384@gmail.com | 20 Begley St. Peeramom, Australia | Sister | 447700900392 |
| M3487192 | Bruce Miles | Mariah.Miles475@gmail.com | 68 Begley St. Adelaide, Australia | Father | 447700900482 |

Query 12: For a given date, list the airplanes scheduled for flights and those not scheduled for flights.

```
SELECT *
FROM Flight;
```

Output:

| Flight Number | Flight Date | Origin City | Depart Time 1 | Destination City | Arrival Time 1 | Stop Over City | Arrival Time 2 | Depart Time 2 | Plane Type |
|------------------|----------------|----------------|------------------|---------------------|-------------------|-------------------|-------------------|------------------|----------------|
| TF0002 | 05/MAY/16 | Gold Coast | 1001 | Sydney | 1101 | | | | Boeing 747 |
| TF0001 | 06/MAY/16 | Sydney | 1645 | New Delhi | 0730 | Singapore | 2345 | 0200 | Boeing 767 |
| TF0003 | 12/JUN/16 | New Delhi | 0600 | Sydney | 0300 | Singapore | 1100 | 1600 | Boeing 777 |
| TF0005 | 14/JUN/16 | Los Angeles | 1300 | Sydney | 0900 | | | | Airbus A380 |
| TF0004 | 05/JUN/16 | Sydney | 1030 | Los Angeles | 0200 | | | | Airbus A330 |

Query 13: For each flight attendant, find his/her work experiences and details of trainings he/she received.

```
SELECT s.STAFFNUMBER, s.STAFFNAME, s.STAFFTYPE, p.COMPANY, p.STARTDATE,
       p.ENDDATE, t.PROGRAMCODE, t.PROGRAMNAME, t.STARTDATE, t.ENDDATE,
       t.BRIEFDESCRIPTION
FROM Staff s, PreviousWorkExp p, TrainingProgram t
WHERE s.STAFFNUMBER = p.STAFFNUMBER
AND s.STAFFNUMBER = t.STAFFNUMBER
AND s.STAFFTYPE = 'Flight Attendant';
```

Output:

| Staff Number | Staff Name | Staff Type | Company | Start Date | End Date | Program Code | Program Name | Start Date | End Date | Brief Description |
|--------------|----------------|------------------|----------------|------------|-----------|--------------|----------------------------------|------------|-----------|------------------------------|
| F50871029 | Diana Dropolis | Flight Attendant | Qantas | 01/JAN/12 | 01/JAN/13 | PRC5671 | The Future plane assistants | 10/FEB/11 | 12/AUG/11 | Satisfactory work completed. |
| G23850971 | Harry Johnston | Flight Attendant | Jetstar | 01/JAN/12 | 01/JAN/13 | PRC5672 | The school for flight attendants | 09/FEB/11 | 14/AUG/11 | Satisfactory work completed. |
| A47182840 | Adam Troysan | Flight Attendant | Tigerair | 01/JAN/12 | 01/JAN/13 | PRC5673 | Flight crew school | 10/FEB/11 | 11/AUG/11 | Satisfactory work completed. |
| B12749871 | Lee Pinpo | Flight Attendant | Virgin Airways | 01/JAN/12 | 01/JAN/13 | PRC5674 | To fly with you school | 08/FEB/11 | 13/AUG/11 | Satisfactory work completed. |
| P48570203 | Tiki Mane | Flight Attendant | Qantas | 01/JAN/12 | 01/JAN/13 | PRC5675 | The school for flight attendants | 01/FEB/12 | 05/AUG/12 | Satisfactory work completed. |
| U23213874 | Opa Lulu | Flight Attendant | Qantas | 01/JAN/12 | 01/JAN/13 | PRC5676 | The school for flight attendants | 01/FEB/12 | 05/AUG/12 | Satisfactory work completed. |
| T12875093 | Peter Williams | Flight Attendant | Jetstar | 01/JAN/12 | 01/JAN/13 | PRC5677 | To fly with you school | 08/FEB/12 | 13/AUG/12 | Satisfactory work completed. |

Query 14: For each airplane (given the serial number), list its scheduled flights (departure and arrival city as well as time) today.

```
SELECT      a.SERIALNUMBER,      a.PLANETYPE,      f.FLIGHTDATE,      f.ORIGINCITY,
            f.DEPARTTIME1, f.DESTINATIONCITY, f.ARRIVALTIME1
FROM Flight f, Airplane a
WHERE f.PLANETYPE = a.PLANETYPE;
```

Output:

| Serial Number | Plane Type | Flight Date | Origin City | Depart Time 1 | Destination City | Arrival Time 1 |
|---------------|-------------|-------------|-------------|---------------|------------------|----------------|
| BO767 | Boeing 767 | 06/MAY/16 | Sydney | 1645 | New Delhi | 0730 |
| BO747 | Boeing 747 | 05/MAY/16 | Gold Coast | 1001 | Sydney | 1101 |
| BO777 | Boeing 777 | 12/JUN/16 | New Delhi | 0600 | Sydney | 0300 |
| AO330 | Airbus A330 | 05/JUN/16 | Sydney | 1030 | Los Angeles | 0200 |
| AO380 | Airbus A380 | 14/JUN/16 | Los Angeles | 1300 | Sydney | 0900 |

Appendix

Task Allocation Table:

| Task Number | Allocated Author/s | Completed by Author/s | Comments |
|-------------|-----------------------|--------------------------|-------------------|
| 1.0 | Akhil/John | Akhil/John | Completed on time |
| 2.0 | Akhil/John | Akhil/John | Completed on time |
| 3.0 | Akhil/John | Akhil/John | Completed on time |
| 4.0 | Akhil/John | Akhil/John | Completed on time |

All SQL Commands:

```
drop table Airline cascade constraints;
create table Airline (
    airlineName char(11),
    CONSTRAINT Airline_PK PRIMARY KEY(airlineName));

drop table Staff cascade constraints;
create table Staff (
    staffNumber      char(12) not null,
    staffName        varchar2(20),
    staffType        varchar2(16),
    staffSex         char(2) not null check (staffSex in ('M', 'F')),
    staffDOB         Date,
    homeAddress      varchar2(40),
    dateJoinedAirline Date,
    CONSTRAINT Staff_PK PRIMARY KEY(staffNumber));

drop table Flight cascade constraints;
create table Flight (
    flightNumber      char(8) not null,
    flightDate        Date,
    originCity        varchar2(20),
    departTime1       char(6),
    destinationCity   varchar2(20),
    arrivalTime1      char(6),
    stopOverCity      varchar2(20) null,
    arrivalTime2      char(6) null,
    departTime2       char(6) null,
    planeType         char(11),
    CONSTRAINT Flight_PK PRIMARY KEY(flightNumber),
    CONSTRAINT Flight_FK FOREIGN KEY(planeType) references Airplane(planeType) on delete set null);

drop table Airplane cascade constraints;
create table Airplane (
    planeType         char(11),
    flightRange       Number(5),
    passengerCapacity Number(3),
    certifiedPlane     char(3) not null check (certifiedPlane in ('Yes', 'No')),
    serialNumber      char(8) not null,
    flightNumber      char(8) not null,
    CONSTRAINT Airplane_PK PRIMARY KEY(planeType),
    CONSTRAINT Airplane_FK FOREIGN KEY(flightNumber) references Flight(flightNumber) on delete set
    null);

drop table BookingSystem cascade constraints;
create table BookingSystem (
    airlineName      char(11) not null,
    flightNumber     char(8),
    Tickets          Number(3),
    CONSTRAINT BookingSystem_PK PRIMARY KEY(flightNumber),
    CONSTRAINT BookingSystem_FK FOREIGN KEY(airlineName) references Airline(airlineName) on delete
    set null);
```

```

drop table Ticket cascade constraints;
create table Ticket (
    flightNumber    char(8) not null,
    ticketNumber    char(6) not null,
    paymentType     char(4),
    ticketType      char(8),
    ticketPrice     number(5),
    flightDate      Date,
    departureCity   varchar2(20),
    arrivalCity     varchar2(20),
    dateOfPurchase  Date,
    CONSTRAINT Ticket_PK PRIMARY KEY(ticketNumber),
    CONSTRAINT Ticket_FK FOREIGN KEY(flightNumber) references Flight(flightNumber) on delete set
        null);

drop table PassengerDetails cascade constraints;
create table PassengerDetails (
    ticketNumber    char(6) not null,
    IDNumber        char(8) not null,
    IDType          char(8) not null,
    firstName       varchar2(20),
    lastName        varchar2(20),
    passengerSex    char(2) not null check (passengerSex in ('M', 'F')),
    passengerEmail  varchar2(30),
    contactPhone    number(15),
    Address         varchar2(40),
    CONSTRAINT PassengerDetails_PK PRIMARY KEY(IDNumber),
    CONSTRAINT PassengerDetails_FK FOREIGN KEY(ticketNumber) references Ticket(ticketNumber) on
        delete set null);

drop table FlightAttendant cascade constraints;
create table FlightAttendant (
    staffNumber     char(12) not null,
    staffName       varchar2(20),
    CONSTRAINT FlightAttendant_FK FOREIGN KEY(staffNumber) references Staff(staffNumber) on delete
        set null);

drop table Pilot cascade constraints;
create table Pilot (
    staffNumber     char(12) not null,
    planeType       varchar(12),
    dateOfCertification date not null,
    CONSTRAINT Pilot_FK FOREIGN KEY(staffNumber) references Staff(staffNumber) on delete set null);

drop table TrainingProgram cascade constraints;
create table TrainingProgram (
    staffNumber     char(12) not null,
    programCode     char(7) not null,
    programName     varchar2(40),
    startDate       date,
    endDate         date,
    briefDescription varchar2(30),
    CONSTRAINT TrainingProgram_PK PRIMARY KEY(programCode),
    CONSTRAINT TrainingProgram_FK FOREIGN KEY(staffNumber) references Staff(staffNumber) on delete
        set null);

drop table EmergencyContact cascade constraints;
create table EmergencyContact (
    staffNumber     char(12) not null,
    Name            varchar2(20),
    Email           varchar2(30),
    Address         varchar2(40),
    Relationship     char(10),
    emergencyContact Number(15) not null,
    CONSTRAINT EmergencyContact_PK PRIMARY KEY(emergencyContact),
    CONSTRAINT EmergencyContact_FK FOREIGN KEY(staffNumber) references Staff(staffNumber) on delete
        set null);

drop table PreviousWorkExp cascade constraints;
create table PreviousWorkExp (
    staffNumber     char(12) not null,
    Company         char(20),
    Position        varchar2(20),
    startDate       date,
    endDate         date,

```

CONSTRAINT PreviousWorkExp_FK FOREIGN KEY(staffNumber) references Staff(staffNumber) on delete set null);

Insert into Airline values ('Terra Firma');

Insert into Staff values ('F50871029', 'Diana Dropolis', 'Flight Attendant', 'F', '21-Sep-1987', '4 Jesus St. Tampinese, Singapore', '10-Mar-2013');
Insert into Staff values ('G23850971', 'Harry Johnston', 'Flight Attendant', 'M', '11-Jun-1992', '159 Ainsley St. Parramatta, Australia', '10-Mar-2013');
Insert into Staff values ('A47182840', 'Adam Troysan', 'Flight Attendant', 'M', '16-Aug-1995', '48 Kingstrong St. Alabama, US', '10-Mar-2013');
Insert into Staff values ('B12749871', 'Lee Pinpo', 'Flight Attendant', 'M', '20-Dec-1989', '20 Xiuxan St. Lingho, China', '10-Mar-2013');
Insert into Staff values ('P48570203', 'Tiki Mane', 'Flight Attendant', 'M', '06-Mar-1978', '29 Murray Way, Nerang, Australia', '11-Jan-2014');
Insert into Staff values ('U23213874', 'Opa Lulu', 'Flight Attendant', 'F', '12-May-1996', '1 Harrison St. Petone, New Zealand', '11-Jan-2014');
Insert into Staff values ('T12875093', 'Peter Williams', 'Flight Attendant', 'M', '28-Nov-1991', '41 Sington St. Maryborough Australia', '11-Jan-2014');
Insert into Staff values ('W47293847', 'Luke Collins', 'Flight Attendant', 'M', '30-Jun-1989', '10 Victop St. Warrick, Australia', '11-Jan-2014');
Insert into Staff values ('Y20394701', 'Brian Senilu', 'Pilot', 'M', '07-Oct-1988', '769 Van dyke Rd. Cedar Falls, US', '14-Jun-2012');
Insert into Staff values ('I23098401', 'Jess Terana', 'Pilot', 'F', '24-Mar-1987', '3352 Arlington Avenue, Stamford, US', '20-Oct-2011');
Insert into Staff values ('Z10834799', 'Tim Turner', 'Cleaner', 'M', '13-May-1967', '20 Begley St. Peeramon, Australia', '01-Aug-2010');
Insert into Staff values ('M3487192', 'Mariah Miles', 'Cleaner', 'F', '27-Sep-1988', '68 Begley St. Adelaide, Australia', '02-Jan-2012');

Insert into Flight values ('TF0002', '05-May-2016', 'Gold Coast', '1001', 'Sydney', '1101', null, null, null, 'Boeing 747');
Insert into Flight values ('TF0001', '06-May-2016', 'Sydney', '1645', 'New Delhi', '0730', 'Singapore', '2345', '0200', 'Boeing 767');
Insert into Flight values ('TF0003', '12-Jun-2016', 'New Delhi', '0600', 'Sydney', '0300', 'Singapore', '1100', '1600', 'Boeing 777');
Insert into Flight values ('TF0005', '14-Jun-2016', 'Los Angeles', '1300', 'Sydney', '0900', null, null, null, 'Airbus A380');
Insert into Flight values ('TF0004', '05-Jun-2016', 'Sydney', '1030', 'Los Angeles', '0200', null, null, null, 'Airbus A330');

Insert into Airplane values ('Boeing 767', '50000', '200', 'Yes', 'BO767', 'TF0001');
Insert into Airplane values ('Boeing 747', '40000', '150', 'Yes', 'BO747', 'TF0002');
Insert into Airplane values ('Boeing 777', '48000', '195', 'Yes', 'BO777', 'TF0003');
Insert into Airplane values ('Airbus A330', '60000', '250', 'Yes', 'AO330', 'TF0004');
Insert into Airplane values ('Airbus A380', '90000', '400', 'Yes', 'AO380', 'TF0005');

Insert into BookingSystem values ('Terra Firma', 'TF0001', '187');
Insert into BookingSystem values ('Terra Firma', 'TF0002', '149');
Insert into BookingSystem values ('Terra Firma', 'TF0003', '150');
Insert into BookingSystem values ('Terra Firma', 'TF0004', '201');
Insert into BookingSystem values ('Terra Firma', 'TF0005', '369');

Insert into Ticket values ('TF0001', 'TFN123', 'VISA', 'Business', '2500', '06-May-2016', 'Sydney', 'New Delhi', '06-Jan-2016');
Insert into Ticket values ('TF0002', 'TFN467', 'VISA', 'Economy', '600', '05-May-2016', 'Sydney', 'New Delhi', '05-Jan-2016');
Insert into Ticket values ('TF0003', 'TFN282', 'Cash', 'Economy', '800', '12-Jun-2016', 'Sydney', 'New Delhi', '12-Mar-2016');
Insert into Ticket values ('TF0004', 'TFN785', 'VISA', 'Economy', '750', '19-Jun-2016', 'Sydney', 'New Delhi', '19-Mar-2016');
Insert into Ticket values ('TF0005', 'TFN324', 'Cash', 'Business', '4000', '14-Jun-2016', 'Sydney', 'New Delhi', '14-Apr-2016');

Insert into PassengerDetails values ('TFN123', 'P1278381', 'Passport', 'John', 'Chen', 'M', 'j.m@hotmail.com', '61426897587', '123 Fake St. Central 2916, USA');
Insert into PassengerDetails values ('TFN467', 'P6544785', 'Passport', 'Jack', 'Santias', 'M', 'j.s@gmail.com', '61422222222', '69 Blaze St. Downtown, USA');
Insert into PassengerDetails values ('TFN282', 'P3284591', 'Passport', 'Jackie', 'Dillon', 'M', 'j.d@yahoo.com', '61439285739', '1 Heidel Circuit, Australia');

```

Insert into PassengerDetails values ('TFN785', 'P1239874', 'Passport', 'Jessica', 'So', 'M',
'j.s1@gmail.com', '61452441522', '23 Stringy St., New Zealand');
Insert into PassengerDetails values ('TFN324', 'P3792311', 'Passport', 'Jordan', 'Shibinoski',
'M', 'j.s2@gmail.com', '61428937293', '12 Clear Crescent Armadale, Austrlaia');

Insert into FlightAttendant values ('F50871029', 'Diana Dropolis');
Insert into FlightAttendant values ('G23850971', 'Harry Johnston');
Insert into FlightAttendant values ('A47182840', 'Adam Troysan');
Insert into FlightAttendant values ('B12749871', 'Lee Pinpo');
Insert into FlightAttendant values ('P48570203', 'Tiki Mane');
Insert into FlightAttendant values ('U23213874', 'Opa Lulu');
Insert into FlightAttendant values ('T12875093', 'Peter Williams');
Insert into FlightAttendant values ('W47293847', 'Luke Collins');

Insert into Pilot values ('Y20394701', 'Boeing Class', '01-Apr-2012');
Insert into Pilot values ('I23098401', 'Airbus Class', '17-Sep-2011');

Insert into TrainingProgram values ('F50871029', 'PRC5671', 'The Future plane assistants', '10-
Feb-2011', '12-Aug-2011', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('G23850971', 'PRC5672', 'The school for flight attendants',
'09-Feb-2011', '14-Aug-2011', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('A47182840', 'PRC5673', 'Flight crew school', '10-Feb-2011',
'11-Aug-2011', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('B12749871', 'PRC5674', 'To fly with you school', '08-Feb-
2011', '13-Aug-2011', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('P48570203', 'PRC5675', 'The school for flight attendants',
'01-Feb-2012', '05-Aug-2012', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('U23213874', 'PRC5676', 'The school for flight attendants',
'01-Feb-2012', '05-Aug-2012', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('T12875093', 'PRC5677', 'To fly with you school', '08-Feb-
2012', '13-Aug-2012', 'Satisfactory work completed. ');
Insert into TrainingProgram values ('W47293847', 'PRC5678', 'The Future plane assistants', '10-
Feb-2012', '12-Aug-2012', 'Satisfactory work completed. ');

Insert into EmergencyContact values ('F50871029', 'Josh Dropolis', 'Diana.Dro164@gmail.com', '4
Jesus St. Tampinese, Singapore', 'Brother', '447700900610');
Insert into EmergencyContact values ('G23850971', 'Liam Johnston',
'Harry.johnston219@gmail.com', '159 Ainsley St. Parramatta, Australia', 'Brother',
'447700900348');
Insert into EmergencyContact values ('A47182840', 'Amba Troysan', 'Adam.Troysan391@gmail.com',
'48 Kingstrong St. Alabama, US', 'Mother', '447700900237');
Insert into EmergencyContact values ('B12749871', 'Chin Pinpo', 'lee.pinpo22@gmail.com', '20
Xiuxan St. Lingho, China', 'Brother', '447700906930');
Insert into EmergencyContact values ('P48570203', 'Lele Mane', 'Tikima.ne21@gmail.com', '29
Murray Way, Nerang, Australia', 'Sister', '447700923820');
Insert into EmergencyContact values ('U23213874', 'Paka Lulu', 'Opa.lulu1208@gmail.com', '1
Harrison St. Petone, New Zealand', 'Sister', '447700958208');
Insert into EmergencyContact values ('T12875093', 'Hanna Williams', 'Peterwill11293@gmail.com',
'41 Sington St. Maryborough, Australia', 'Sister', '447700948200');
Insert into EmergencyContact values ('W4729384', 'John Collins', 'luke.collins12083@gmail.com',
'10 Victop St. Warrick, Australia', 'Father', '447700900484');
Insert into EmergencyContact values ('I23098401', 'Luke Senilu', 'Briansenilu2309@gmail.com',
'769 Van dyke Rd. Cedar Falls, US', 'Brother', '447700900488');
Insert into EmergencyContact values ('I23098401', 'Tom Terana', 'Jess.Terana1308@gmail.com',
'3352 Arlington Avenue, Stamford, US', 'Brother', '447700994792');
Insert into EmergencyContact values ('Z10834799', 'Amanda Turner', 'Tim.Turner20384@gmail.com',
'20 Begley St. Peeramon, Australia', 'Sister', '447700900392');
Insert into EmergencyContact values ('M3487192', 'Bruce Miles', 'Mariah.Miles475@gmail.com',
'68 Begley St. Adelaide, Australia', 'Father', '447700900482');

Insert into PreviousWorkExp values ('F50871029', 'Qantas', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');
Insert into PreviousWorkExp values ('G23850971', 'Jetstar', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');
Insert into PreviousWorkExp values ('A47182840', 'Tigerair', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');
Insert into PreviousWorkExp values ('B12749871', 'Virgin Airways', 'Flight Attendant', '01-Jan-
2012', '01-Jan-2013');
Insert into PreviousWorkExp values ('P48570203', 'Qantas', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');
Insert into PreviousWorkExp values ('U23213874', 'Qantas', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');

```

```

Insert into PreviousWorkExp values ('T12875093', 'Jetstar', 'Flight Attendant', '01-Jan-2012',
'01-Jan-2013');
Insert into PreviousWorkExp values ('W4729384', 'Virgin Airways', 'Flight Attendant', '01-Jan-
2012', '01-Jan-2013');
Insert into PreviousWorkExp values ('Y20394701', 'Jetstar', 'Pilot', '01-Jan-2012', '01-Jan-
2013');
Insert into PreviousWorkExp values ('I23098401', 'Tigerair', 'Pilot', '01-Jan-2012', '01-Jan-
2013');
Insert into PreviousWorkExp values ('Z10834799', 'Qantas', 'Cleaner', '01-Jan-2012', '01-Jan-
2013');
Insert into PreviousWorkExp values ('M3487192', 'Singapore Airlines', 'Cleaner', '01-Jan-2012',
'01-Jan-2013');

/*Query 1*/
SELECT *
FROM Airplane;

/*Query 2*/
SELECT s.staffnumber, s.STAFFNAME, p.PLANETYPE, p.DATEOFCERTIFICATION
FROM Staff s, Pilot p
WHERE s.staffNumber = p.staffNumber;

/*Query 3*/
SELECT f.FLIGHTNUMBER, f.FLIGHTDATE, a.SERIALNUMBER, s.STAFFNUMBER
FROM Flight f, Airplane a, Staff s
WHERE f.PLANETYPE = a.PLANETYPE
AND s.stafftype = 'Pilot';

/*Query 4*/
SELECT ORIGINCITY, STOPOVERCITY
FROM Flight;

/*Query 5*/
SELECT FLIGHTNUMBER, ORIGINCITY, DEPARTTIME1, DESTINATIONCITY, ARRIVALTIME1, STOPOVERCITY,
ARRIVALTIME2, DEPARTTIME2
FROM Flight
ORDER BY DEPARTTIME1;

/*Query 6*/
SELECT FLIGHTNUMBER, ORIGINCITY, DEPARTTIME1, DESTINATIONCITY, ARRIVALTIME1, STOPOVERCITY,
ARRIVALTIME2, DEPARTTIME2
FROM Flight;

/*Query 7*/
SELECT distinct(s.STAFFTYPE), s.STAFFNAME, a.SERIALNUMBER
FROM Flight f, Staff s, Airplane a
WHERE f.PLANETYPE = a.PLANETYPE
AND s.STAFFTYPE = 'Pilot'
OR s.STAFFTYPE = 'Flight Attendant'
ORDER BY a.SERIALNUMBER;

/*Query 8*/
SELECT f.FLIGHTNUMBER, f.ORIGINCITY, p.IDTYPE, p.IDNUMBER, p.FIRSTNAME, p.LASTNAME, p.ADDRESS,
p.CONTACTPHONE, t.TICKETNUMBER
FROM Flight f, PassengerDetails p, Ticket t
WHERE f.FLIGHTNUMBER = t.FLIGHTNUMBER
AND t.TICKETNUMBER = p.TICKETNUMBER;

/*Query 9*/
SELECT f.FLIGHTDATE, f.ORIGINCITY, f.DESTINATIONCITY, f.FLIGHTNUMBER, (a.PASSENGERCAPACITY -
b.TICKETS) As FreeSeats
FROM BookingSystem b, Airplane a, Flight f
WHERE b.FLIGHTNUMBER = f.FLIGHTNUMBER
AND f.FLIGHTNUMBER = a.FLIGHTNUMBER;

/*Query 10*/
SELECT p.IDTYPE, p.IDNUMBER, p.TICKETNUMBER, f.FLIGHTNUMBER, f.ORIGINCITY, f.DESTINATIONCITY,
f.ARRIVALTIME1
FROM PassengerDetails p, Flight f, Ticket t
WHERE p.TICKETNUMBER = t.TICKETNUMBER
AND f.FLIGHTNUMBER = t.FLIGHTNUMBER;

/*Query 11*/
SELECT *
FROM EmergencyContact;

```



```

/*Query 12*/
SELECT *
FROM Flight;

/*Query 13*/
SELECT    s.STAFFNUMBER,    s.STAFFNAME,    s.STAFFTYPE,    p.COMPANY,    p.STARTDATE,    p.ENDDATE,
          t.PROGRAMCODE, t.PROGRAMNAME, t.STARTDATE, t.ENDDATE, t.BRIEFDESCRIPTION
FROM Staff s, PreviousWorkExp p, TrainingProgram t
WHERE s.STAFFNUMBER = p.STAFFNUMBER
AND s.STAFFNUMBER = t.STAFFNUMBER
AND s.STAFFTYPE = 'Flight Attendant';

/*Query 14*/
SELECT    a.SERIALNUMBER,    a.PLANETYPE,    f.FLIGHTDATE,    f.ORIGINCITY,    f.DEPARTTIME1,
          f.DESTINATIONCITY, f.ARRIVALTIME1
FROM Flight f, Airplane a
WHERE f.PLANETYPE = a.PLANETYPE;

```