

PROJECT REPORT
Submitted for Database Management System (UCS310)

TOPIC:
Airport Management System
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PROJECT DESCRIPTION

Domain: Airport Management System

1.1 Requirements of the system:

- The system is based on airport management. Airport management system primarily deals with management of airport, airlines and passengers. The system provides broad overview of underlying operational factors that influence the airport management.
- The database system has the data of all commercial service airports.
- An airport is located in a city.
- All International airlines operating through various countries across the world have their offices located in all major cities and airports they cover. Hence, an airport may have many airline offices.
- Every airline is identified uniquely by an airline code. Airline code is a two-letter airline designator. Airline also has three-digit code which is printed on an air ticket.

Airline Code

Airline Name	IATA Airline code/IATA Designator	3-DIGIT CODE
American Airlines	AA	1
Air India Limited	AI	98
Lufthansa	LH	220
British Airways	BA	125
Qatar Airways	QR	157
Jet Airways	9W	589
Emirates	EK	176
Ethiad Airways	EY	607

Reference: <http://www.iata.org/publications/Pages/code-search.aspx>


- Airline companies serve flights.
- Every flight is uniquely identified by a flight code. Flight code is a combination of an airline code and four-digit number.
 - Flight takes off from one airport and lands on another airport. Therefore, most important aspect of a flight is, its source and destination. Source and destination airports are identified using an airport's IATA code.
- International Air Transport Airport code is simply a location identifier. IATA code is a three-letter code designating many airports across the world. These codes are prominently displayed on baggage tags and printed on an air ticket.

Airport Code

Airport Name	IATA Airport code
Louisville International Airport	SDF
Chandigarh International Airport	IXC
Dallas/Fort Worth International Airport	DFW
Indira Gandhi International Airport	DEL
Chhatrapati Shivaji International Airport	BOM
San Francisco International Airport	SFO
Frankfurt Airport	FRA
George Bush Intercontinental Airport	IAH
John F. Kennedy International Airport	JFK
Tampa International Airport	TPA

Reference: <http://www.iata.org/publications/Pages/code-search.aspx>

- Flight has an arrival time, departure time, duration. Flight has three types of classes- business, economy and first class.
- Flight can be of two types such non-stop flight and a connecting flight.
- Connecting flight is a flight which takes intermediate stop and changes a flight possibly change of an airline. But we are assuming that connecting flight does not change a flight that is at each stop, after layover time gets over, passengers aboard the same flight
- Flight serves passengers. Flight carries passengers from source to destination.
- A passenger is uniquely identified by a passenger id and a passport number.
 - Every passenger has details such as name, address, age, sex, phone.
- For a passenger to travel by a flight, he needs a ticket. A ticket or air ticket is used to confirm that an individual has reserved a seat on a flight. With the ticket, a passenger is allowed to board the flight.
 - An air ticket has information such as the passenger's name, the issuing airline, ticket number, source, destination, journey date, seat no, class, fare.
 - Ticket number is the combination of airline's 3-digit code, 4-digit form number, 6-digit serial number.

Date	Description				
Saturday 01-Feb-14	American Airlines Flight: AA1511 Class: Economy Class 	Departure: Dallas/Fort Worth Intl Apt Time: 10:30AM (01-Feb-14)	Arrival: Fort Lauderdale/Hollywood Intl Apt, Terminal 3 Time: 2:10PM (01-Feb-14)		
	Status Confirmed	Aircraft: Boeing 737-800	Flight Duration: 0240		
		Baggage Allowance: 0PC			
	LAST NAME/First Name(s)	Ticket Type	Ticket Number	Airline Ref	Your Ref
	SMITH LISA	Electronic Ticket	001 1234567890	EUJQNR	YIP4A7

- Hence, depending on airline, source, destination, journey date and most importantly class, which a passenger chooses fare or price of an air ticket is determined.
- A passenger can book one or multiple tickets. The day on which he books an air ticket is a booking date. Similarly, a passenger can cancel one or multiple tickets. The day on which he cancels an air ticket is cancellation date and there will be a surcharge that a passenger has to pay after cancelling a ticket.
- Every airport has employees working for it.
 - Every employee is identified by SSN. Every employee has an information such as name, address, phone, age, sex, salary.
 - Employees in the role of administrative support, engineer, traffic controller and airport authority work at the airport.
 - Every airline needs administrative support staff to keep the office running smoothly. The different positions include secretaries, data entry workers, receptionists, communications and PR specialists and human resources department.
 - There are different types of engineers who work specifically with information technologies, electronics, flight structure, environmental regulations, etc.
 - Traffic Monitor works in different shifts such as day or night.
 - There are different positions that airport authorities might work at such as manager, attendee, assistant, pilot, etc.
- Employees working in the role of administrative support may help passengers with various tasks such as booking a flight ticket, solving passenger's questions, etc.

Assumptions:

- We are not considering privately managed airports. We are only considering publicly owned airports.

Several Categories of airports:

(1) Commercial Service airport

These are publicly owned airports that serve aircrafts which provide scheduled passenger service.

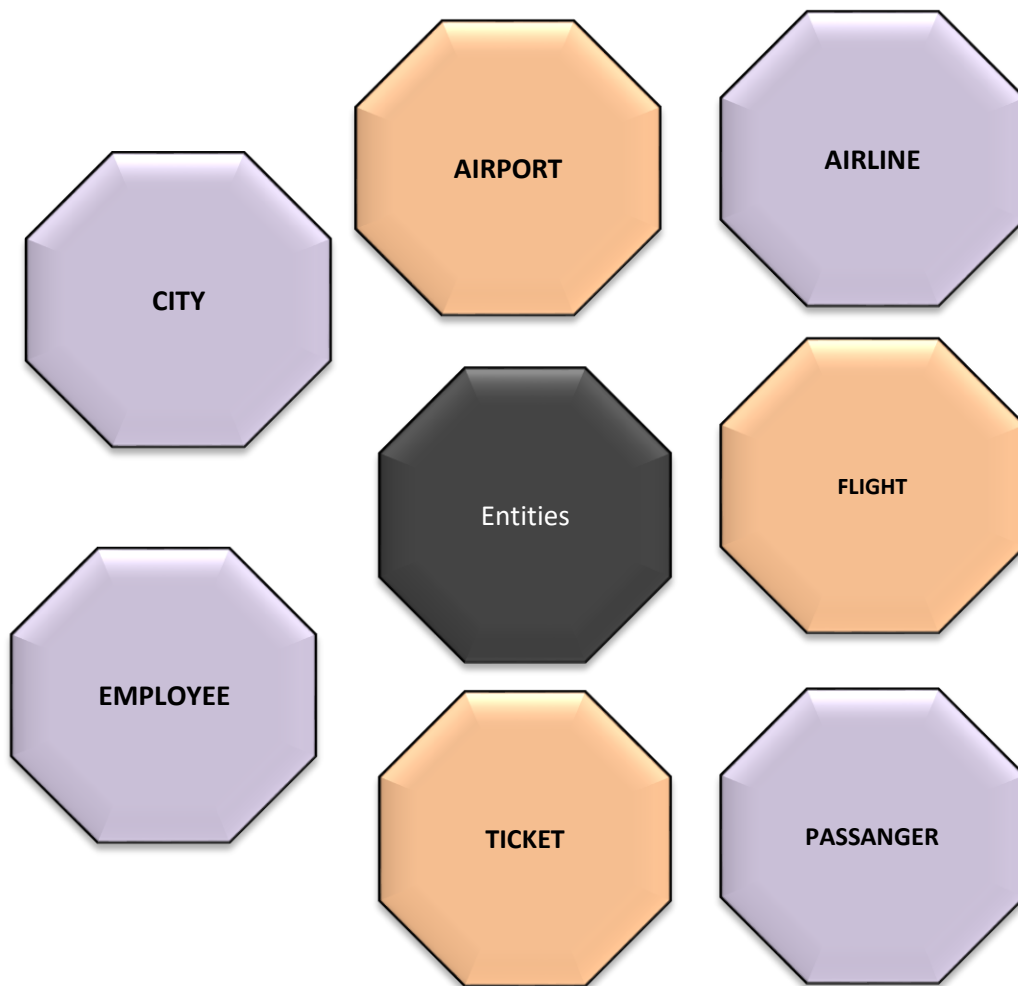
(2) Cargo Service airports

These airports serve aircrafts carrying cargo only

Reference: <http://www.noisequest.psu.edu/aboutairports-typesofairports.html>

- The system is designed only for international flights.
- A city has at most one international airport.
- For Connecting flights, flight and airline remains same at layover stops
- There are different types of jobs available at the airport. For simplicity our system considers a few jobs only.

ENTITIES



CITY

CNAME	STATE	COUNTRY
-------	-------	---------

AIPORT

AP_NAME	STATE	COUNTRY
---------	-------	---------

AIRLINE

AIRLINEID	AL_NAME	THREE_DIGIT_CODE
-----------	---------	------------------

FLIGHT

FLIGHT_CODE	SOURCE	DESTINATION	ARRIVAL	DEPARTURE	STATUS	DURATION	FLIGHTTYPE
LAYOVER_TIME	NO_OF_STOPS						

PASSENGER

PID	PASSPORTNO	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX
-----	------------	-------	---	-------	---------	-------	-----	-----

TICKET

TICKET_NUMBER	SOURCE	DESTINATION	DATE_OF_TRAVEL	SEATNO	CLASS	PRICE
---------------	--------	-------------	----------------	--------	-------	-------

EMPLOYEE

SSN	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX	JOBTYPE	SALARY
-----	-------	---	-------	---------	-------	-----	-----	---------	--------

MAPPING ER DIAGRAM TO RELATIONAL SCHEMA

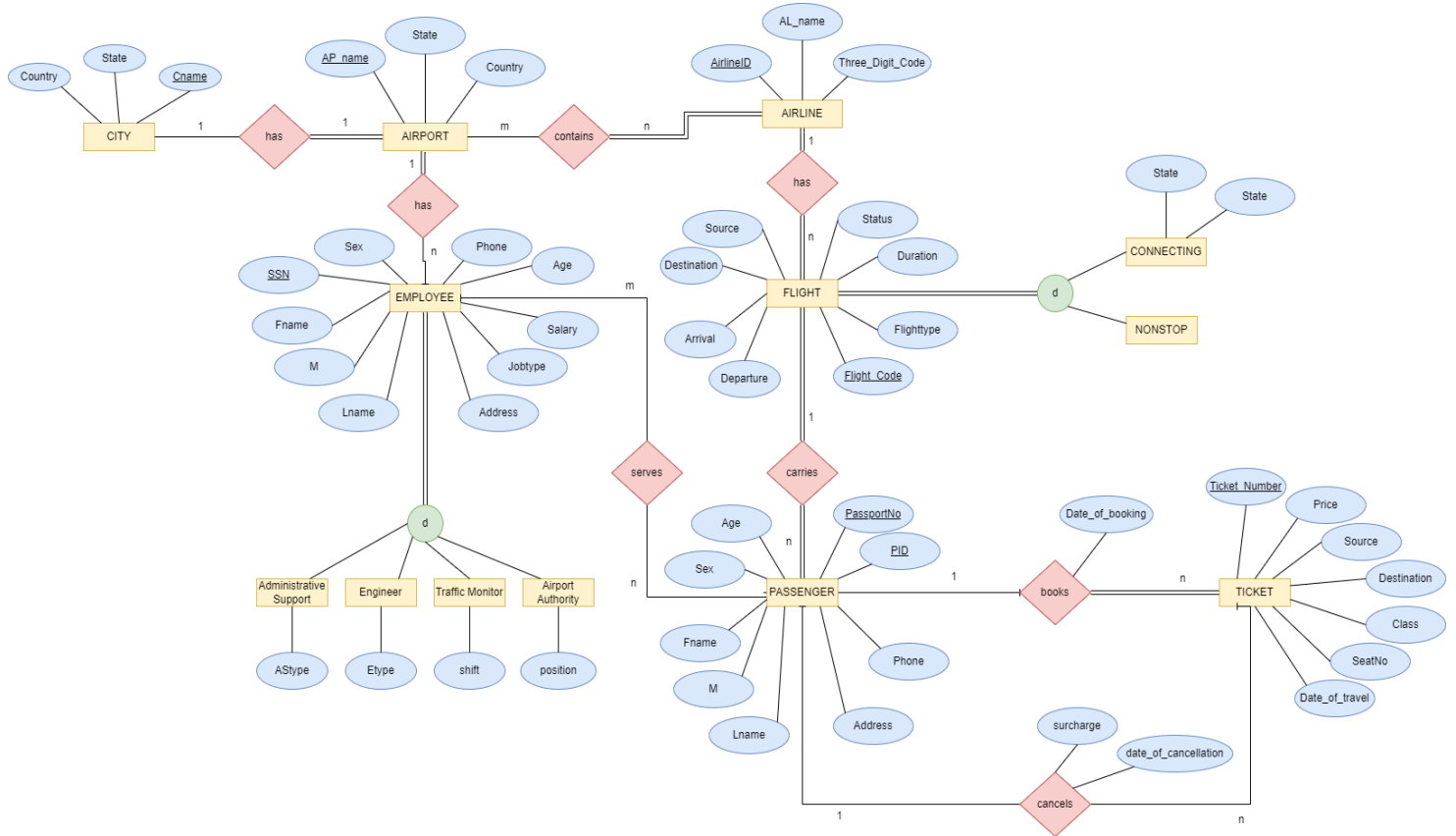


Figure 1: Airport Management System ER Diagram

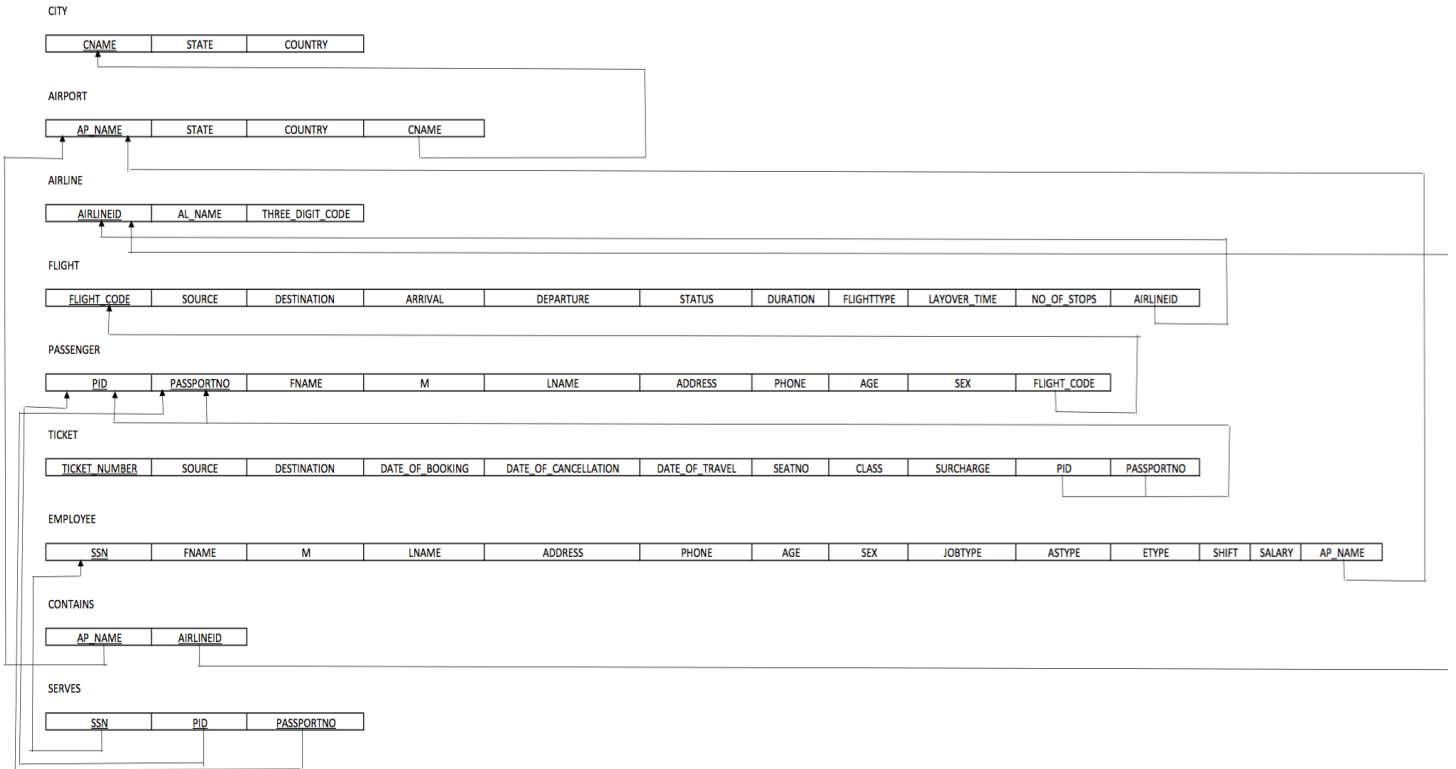
ER/EER DIAGRAM

ER diagram contains following relationships

Entity 1	Name of the Relationship	Entity 2	Cardinality
City	has	Airport	1:1
Airport	contains	Airline	m : n
Airport	has	Employee	1 : n
Airline	has	Flight	1 : n
Flight	carries	Passengers	1 : n
Employee	serves	Passengers	m : n
Passenger	books	Ticket	1 : n
Passenger	cancels	Ticket	1 : n

Type of the binary relationship	Relationships in the system
one-to-one	(1 A city has only one airport.
one-to-many	(1) An airline has multiple flights, that is many flights belong to the same airline company. (2) A flight carries many passengers. (3) A passenger can book one or more tickets. (4) A passenger can cancel one or more tickets.
many-to-many	All International airlines operating through various countries across the world have their offices located in all major cities and airports they cover. Hence, an airport may have many airline offices.

RELATIONAL SCHEMA



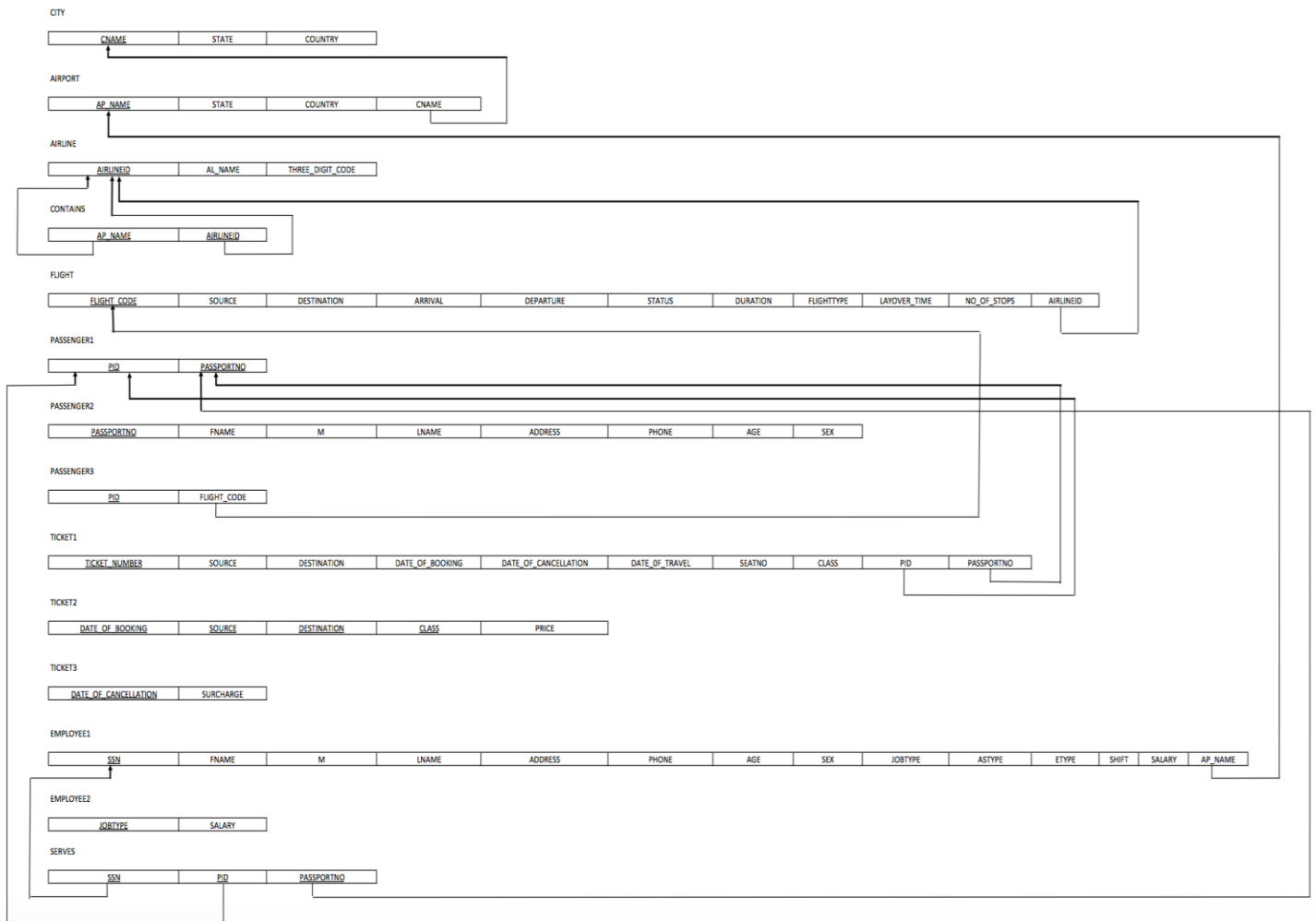
NORMALIZATION RULES ON DATABASE

FUNCTIONAL DEPENDENCIES	
PASSPORTNO -> FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX	Violates 2NF
PID -> FLIGHT_CODE	Violates 2NF
DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS -> PRICE	Violates 3NF
DATE_OF_CANCELLATION -> SURCHARGE	Violates 3NF
JOBTYPE -> SALARY	Violates 3NF

Normalizing tables into 3NF

TABLES	AFTER
NORMALIZATION	
CITY (<u>CNAME</u> , STATE, COUNTRY)	
AIRPORT (<u>AP_NAME</u> , STATE, COUNTRY, CNAME)	
AIRLINE (<u>AIRLINEID</u> , AL_NAME, THREE_DIGIT_CODE)	
CONTAINS (<u>AIRLINEID</u> , <u>AP_NAME</u>)	
FLIGHT (<u>FLIGHT_CODE</u> , SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)	
PASSENGER1 (<u>PID</u> , <u>PASSPORTNO</u>)	
PASSENGER2(<u>PASSPORTNO</u> , FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)	
PASSENGER3 (<u>PID</u> , FLIGHT_CODE)	
TICKET1 (<u>TICKET_NUMBER</u> , SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_TRAVEL, SEATNO, CLASS, DATE_OF_CANCELLATION, PID, PASSPORTNO)	
TICKET2 (<u>DATE OF BOOKING</u> , <u>SOURCE</u> , <u>DESTINATION</u> , <u>CLASS</u> , PRICE)	
TICKET3 (<u>DATE OF CANCELLATION</u> , SURCHARGE)	
EMPLOYEE1 (<u>SSN</u> , FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPE, ASTYPE, ETYPE, SHIFT, POSITION, AP_NAME)	
EMPLOYEE2(<u>JOBTYPE</u> , SALARY)	
SERVES (<u>SSN</u> , <u>PID</u> , <u>PASSPORTNO</u>)	

NORMALISED RELATIONAL SCHEMA



SQL

-- Inserting Table: CITY--

```
CREATE TABLE CITY
(CNAME VARCHAR2(15) NOT NULL,
STATE VARCHAR2(15),
COUNTRY VARCHAR(30),
PRIMARY KEY(CNAME)
)
```

-- Inserting values of Table: CITY--

```
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Louisville','Kentucky','United States')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES ('Chandigarh','Chandigarh','India')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES ('Fort Worth','Texas','United States')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES('Delhi','Delhi','India')
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Mumbai','Maharashtra','India')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES('San Francisco','California','United States')
INSERT INTO CITY (CNAME, STATE, COUNTRY) VALUES('Frankfurt','Hesse','Germany')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES('Houston','Texas','United States')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES('New York City','New York','United States')
INSERT INTO CITY (CNAME, STATE, COUNTRY)
VALUES('Tampa', 'Florida', 'United States')
```

--Viewing Table--

```
SELECT *FROM CITY
```

CNAME	STATE	COUNTRY
Louisville	Kentucky	United States
Chandigarh	Chandigarh	India
Fort Worth	Texas	United States
Delhi	Delhi	India
Mumbai	Maharashtra	India
San Francisco	California	United States
Frankfurt	Hesse	Germany
Houston	Texas	United States
New York City	New York	United States
Tampa	Florida	United States

10 rows selected.

-- Inserting Table: AIRPORT--

```
CREATE TABLE AIRPORT
(AP_NAME VARCHAR2(100) NOT NULL,
STATE VARCHAR2(15),
COUNTRY VARCHAR(30),
CNAME VARCHAR2(15),
PRIMARY KEY(AP_NAME),
FOREIGN KEY(CNAME) REFERENCES CITY(CNAME) ON DELETE CASCADE)
```

--Inserting values for Table: AIRPORT--

```
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Louisville International Airport','Kentucky','United States','Louisville')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Chandigarh International Airport','Chandigarh','India','Chandigarh')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Dallas/Fort Worth International Airport','Texas','United States','Fort Worth')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Indira GandhiInternational Airport','Delhi','India','Delhi')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Chhatrapati Shivaji International Airport','Maharashtra','India','Mumbai')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('San Francisco International Airport','California','United States','San Francisco')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Frankfurt Airport','Hesse','Germany','Frankfurt')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('George Bush Intercontinental Airport','Texas','United States','Houston')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('John F. Kennedy International Airport','New York','United States','New York City')
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME)
VALUES('Tampa International Airport','Florida','United States','Tampa')
```

--Viewing the Table--

```
SELECT *FROM AIRPORT
```

AP_NAME	STATE	COUNTRY	CNAME
Louisville International Airport	Kentucky	United States	Louisville
Chandigarh International Airport	Chandigarh	India	Chandigarh
Dallas/Fort Worth International Airport	Texas	United States	Fort Worth
Indira GandhiInternational Airport	Delhi	India	Delhi
Chhatrapati Shivaji International Airport	Maharashtra	India	Mumbai
San Francisco International Airport	California	United States	San Francisco
Frankfurt Airport	Hesse	Germany	Frankfurt
George Bush Intercontinental Airport	Texas	United States	Houston
John F. Kennedy International Airport	New York	United States	New York City
Tampa International Airport	Florida	United States	Tampa

10 rows selected.

-- Inserting Table: AIRLINE--

```
CREATE TABLE AIRLINE
(AIRLINEID VARCHAR(3) NOT NULL,
AL_NAME VARCHAR2(50),
THREE_DIGIT_CODE VARCHAR(3),
PRIMARY KEY(AIRLINEID))
```

-- Inserting values for Table: AIRLINE --

```
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('AA','American Airlines','001')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('AI','Air India Limited','098')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('LH','Lufthansa','220')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('BA','British Airways','125')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('QR','Qatar Airways','157')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('9W','Jet Airways','589')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('EK','Emirates','176')
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE)
VALUES('EY','Ethiad Airways','607')
```

--Viewing the Table--

```
SELECT *FROM AIRLINE
```

AIRLINEID	AL_NAME	THREE_DIGIT_CODE
AA	American Airlines	001
AI	Air India Limited	098
LH	Lufthansa	220
BA	British Airways	125
QR	Qatar Airways	157
9W	Jet Airways	589
EK	Emirates	176
EY	Ethiad Airways	607

8 rows selected.

-- Inserting Table: CONTAINS—

```
CREATE TABLE CONTAINS
(AIRLINEID VARCHAR(3) NOT NULL,
AP_NAME VARCHAR2(100) NOT NULL,
PRIMARY KEY(AIRLINEID, AP_NAME),
FOREIGN KEY(AIRLINEID) REFERENCES AIRLINE(AIRLINEID) ON DELETE CASCADE,
FOREIGN KEY(AP_NAME) REFERENCES AIRPORT(AP_NAME) ON DELETE CASCADE)
```

-- Inserting values into Table: CONTAINS--

```
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AA','Louisville International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AA','John F. Kennedy International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AA','George Bush Intercontinental Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AA','San Francisco International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AA','Tampa International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AI','Chandigarh International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AI','Dallas/Fort Worth International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AI','Indira Gandhi International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AI','Chhatrapati Shivaji International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('AI','George Bush Intercontinental Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('LH','Chhatrapati Shivaji International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('LH','Frankfurt Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('LH','John F. Kennedy International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('LH','San Francisco International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('LH','Dallas/Fort Worth International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('BA','John F. Kennedy International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('BA','Chhatrapati Shivaji International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('BA','Chandigarh International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('BA','Frankfurt Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('BA','San Francisco International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('QR','Chhatrapati Shivaji International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('QR','Dallas/Fort Worth International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('QR','John F. Kennedy International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('QR','Tampa International Airport')
INSERT INTO CONTAINS (AIRLINEID, AP_NAME)
VALUES('QR','Louisville International Airport')
```


-- Viewing the Table—

AIRLINEID	AP_NAME
AA	George Bush Intercontinental Airport
AA	John F. Kennedy International Airport
AA	Louisville International Airport
AA	San Francisco International Airport
AA	Tampa International Airport
AI	Chandigarh International Airport
AI	Chhatrapati Shivaji International Airport
AI	Dallas/Fort Worth International Airport
AI	George Bush Intercontinental Airport
AI	Indira GandhiInternational Airport
BA	Chandigarh International Airport
BA	Chhatrapati Shivaji International Airport
BA	Frankfurt Airport
BA	John F. Kennedy International Airport
BA	San Francisco International Airport
LH	Chhatrapati Shivaji International Airport
LH	Dallas/Fort Worth International Airport
LH	Frankfurt Airport
LH	John F. Kennedy International Airport
LH	San Francisco International Airport
QR	Chhatrapati Shivaji International Airport
QR	Dallas/Fort Worth International Airport
QR	John F. Kennedy International Airport
QR	Louisville International Airport
QR	Tampa International Airport

25 rows selected.

-- Inserting Table: FLIGHT--

```
CREATE TABLE FLIGHT
(FLIGHT_CODE VARCHAR(10) NOT NULL,
SOURCE VARCHAR(3),
DESTINATION VARCHAR(3),
ARRIVAL VARCHAR2(10),
DEPARTURE VARCHAR2(10),
STATUS VARCHAR(10),
DURATION VARCHAR2(30),
FLIGHTTYPE VARCHAR(10),
LAYOVER_TIME VARCHAR2(30),
NO_OF_STOPS INT,
AIRLINEID VARCHAR(3),
PRIMARY KEY (FLIGHT_CODE),
FOREIGN KEY (AIRLINEID) REFERENCES AIRLINE (AIRLINEID) ON DELETE CASCADE)
```

-- Inserting values into Table: FLIGHT --

```
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('AI2014', 'BOM', 'DFW', '02:10', '03:15', 'On-time', '24hr', 'Connecting', 3, 1, 'AI')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('QR2305', 'BOM', 'DFW', '13:00', '13:55', 'Delayed', '21hr', 'Non-stop', 0, 0, 'QR')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('EY1234', 'JFK', 'TPA', '19:20', '20:05', 'On-time', '16hrs', 'Connecting', 5, 2, 'EY')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('LH9876', 'JFK', 'BOM', '05:50', '06:35', 'On-time', '18hrs', 'Non-stop', 0, 0, 'LH')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('BA1689', 'FRA', 'DEL', '10:20', '10:55', 'On-time', '14hrs', 'Non-stop', 0, 0, 'BA')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('AA4367', 'SFO', 'FRA', '18:10', '18:55', 'On-time', '21hrs', 'Non-stop', 0, 0, 'AA')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('QR1902', 'TXC', 'IAH', '22:00', '22:50', 'Delayed', '28hrs', 'Non-stop', 5, 1, 'QR')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('BA3056', 'BOM', 'DFW', '02:15', '02:55', 'On-time', '29hrs', 'Connecting', 3, 1, 'BA')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('EK3456', 'BOM', 'SFO', '18:50', '19:40', 'On-time', '30hrs', 'Non-stop', 0, 0, 'EK')
INSERT INTO FLIGHT (FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION,
FLIGHTTYPE, LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
VALUES ('9W2334', 'IAH', 'DEL', '23:00', '13:45', 'On-time', '23hrs', 'Direct', 0, 0, '9W')
```

--Viewing Table--

SELECT *FROM FLIGHT

FLIGHT_CODE	SOURCE	DESTINATION	ARRIVAL	DEPARTURE	STATUS	DURATION	FLIGHTTYPE	LAYOVER_TIME	NO_OF_STOPS	AIRLINEID
AI2014	BOM	DFW	02:10	03:15	On-time	24hr	Connecting	3	1	AI
QR2305	BOM	DFW	13:00	13:55	Delayed	21hr	Non-stop	0	0	QR
EY1234	JFK	TPA	19:20	20:05	On-time	16hrs	Connecting	5	2	EY
LH9876	JFK	BOM	05:50	06:35	On-time	18hrs	Non-stop	0	0	LH
BA1689	FRA	DEL	10:20	10:55	On-time	14hrs	Non-stop	0	0	BA
AA4367	SFO	FRA	18:10	18:55	On-time	21hrs	Non-stop	0	0	AA
QR1902	IXC	IAH	22:00	22:50	Delayed	28hrs	Non-stop	5	1	QR
BA3056	BOM	DFW	02:15	02:55	On-time	29hrs	Connecting	3	1	BA
EK3456	BOM	SFO	18:50	19:40	On-time	30hrs	Non-stop	0	0	EK
9W2334	IAH	DEL	23:00	13:45	On-time	23hrs	Direct	0	0	9W

10 rows selected.

-- Inserting Table: PASSENGER1--

CREATE TABLE PASSENGER1

(PID INT NOT NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(PID, PASSPORTNO))

-- Inserting values in table: PASSENGER1--

INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(1,'A1234568')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(2,'B9876541')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(3,'C2345698')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(4,'D1002004')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(5,'X9324666')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(6,'B8765430')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(7,'J9801235')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(8,'A1122334')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(9,'Q1243567')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(10,'S1243269')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(11,'E3277889')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(12,'K3212322')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(13,'P3452390')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(14,'W7543336')
INSERT INTO PASSENGER1(PID, PASSPORTNO)
VALUES(15,'R8990566')

-- Viewing Table--

```
SELECT *FROM PASSENGER1
```

PID	PASSPORTNO
1	A1234568
2	B9876541
3	C2345698
4	D1002004
5	X9324666
6	B8765430
7	J9801235
8	A1122334
9	Q1243567
10	S1243269
11	E3277889
12	K3212322
13	P3452390
14	W7543336
15	R8990566

15 rows selected

--Inserting Table: Passenger2--

```
CREATE TABLE PASSENGER2
(PASSPORTNO VARCHAR(10) NOT NULL,
FNAME VARCHAR2(20),
M VARCHAR(1),
LNAME VARCHAR2(20),
ADDRESS VARCHAR2(100),
PHONE INT,
AGE INT,
SEX VARCHAR(1),
PRIMARY KEY(PASSPORTNO))
```

--Inserting VALUES IN TABLE: PASSENGER2--

```
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('A1234568','ALEN','M','SMITH','2230 NORTHSIDE, APT 11, ALBANY, NY',8080367290,30,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('B9876541','ANKITA','V','AHIR','3456 VIKAS APTS, APT 102,DOMBIVLI, INDIA',8080367280,26,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
```

```

VALUES('C2345698','KHYATI','A','MISHRA','7820 MCCALLUM COURTS, APT 234, AKRON, OH','8082267280,30,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('D1002004','ANKITA','S','PATIL','7720 MCCALLUM BLVD, APT 1082, DALLAS, TX','9080367266,23,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('X9324666','TEJASHREE','B','PANDIT','9082,ESTAE OF RICHARDSON, RICHARDSON, TX','9004360125,28,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('B8765430','LAKSHMI','P','SHARMA','1110 FIR HILLS, APT 903, AKRON, OH','7666190505,30,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('J9801235','AKHILESH','D','JOSHI','345 CHATHAM COURTS, APT 678, MUMBAI, INDIA','9080369290,29,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('A1122334','MANAN','S','LAKHANI','558 CHTHAM REFLECTIONS, APT 349 HOUSTON, TX','9004335126,25,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('Q1243567','KARAN','M','MOTANI','4444 FRANKFORDVILLA, APT 77, GUILDERLAND, NY','9727626643,22,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('S1243269','ROM','A','SOLANKI','7720 MCCALLUM BLVD, APT 2087, DALLAS, TX','9004568903,60,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('E3277889','John','A','GATES','1234 BAKER APTS, APT 59, HESSE, GERMANY','9724569986,10,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('K3212322','SARA','B','GOMES','6785 SPLITSVILLA, APT 34, MIAMI, FL','9024569226,15,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('P3452390','ALIA','V','BHAT','548 MARKET PLACE, SAN Francisco, CA','9734567800,10,'F')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('W7543336','JOHN','P','SMITH','6666 ROCK HILL, APT 2902, TAMPA, FL','4624569986,55,'M')
INSERT INTO PASSENGER2(PASSPORTNO,FNAME,M,LNAME,ADDRESS,PHONE,AGE,SEX)
VALUES('R8990566','RIA','T','GUPTA','3355 PALENCIA, APT 2065, MUMBAI, INDIA','4724512343,10,'M')

```

--Viewing TABLE--

SELECT *FROM PASSENGER2

PASSPORTNO	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX
A1234568	ALEN	M	SMITH	2230 NORTHSIDE, APT 11, ALBANY, NY	8080367290	30	M
B9876541	ANKITA	V	AHIR	3456 VIKAS APTS, APT 102,DOMBIVLI, INDIA	8080367280	26	F
C2345698	KHYATI	A	MISHRA	7820 MCCALLUM COURTS, APT 234, AKRON, OH	8082267280	30	F
D1002004	ANKITA	S	PATIL	7720 MCCALLUM BLVD, APT 1082, DALLAS, TX	9080367266	23	F
X9324666	TEJASHREE	B	PANDIT	9082 ESTAES OF RICHARDSON, RICHARDSON, TX	9004360125	28	F
B8765430	LAKSHMI	P	SHARMA	1110 FIR HILLS, APT 903, AKRON, OH	7666190505	30	F
J9801235	AKHILESH	D	JOSHI	345 CHATHAM COURTS, APT 678, MUMBAI, INDIA	9080369290	29	M
A1122334	MANAN	S	LAKHANI	5589 CHTHAM REFLECTIONS, APT 349 HOUSTON, TX	9004335126	25	F
Q1243567	KARAN	M	MOTANI	4444 FRANKFORD VILLA, APT 77, GUILDERLAND, NY	9727626643	22	M
S1243269	ROM	A	SOLANKI	7720 MCCALLUM BLVD, APT 2087, DALLAS, TX	9004568903	60	M
E3277889	John	A	GATES	1234 BAKER APTS, APT 59, HESSE, GERMANY	9724569986	10	M
K3212322	SARA	B	GOMES	6785 SPLITSVILLA, APT 34, MIAMI, FL	9024569226	15	F
P3452390	ALIA	V	BHAT	548 MARKET PLACE, SAN Francisco, CA	9734567800	10	F
W7543336	JOHN	P	SMITH	6666 ROCK HILL, APT 2902, TAMPA, FL	4624569986	55	M
R8990566	RIA	T	GUPTA	3355 PALENCIA, APT 2065, MUMBAI, INDIA	4724512343	10	M

15 rows selected.

-- Inserting Table: PASSENGER3--

```
CREATE TABLE PASSENGER3
(PID INT NOT NULL,
FLIGHT_CODE VARCHAR(10),
PRIMARY KEY(PID),
FOREIGN KEY(FLIGHT_CODE) REFERENCES FLIGHT(FLIGHT_CODE) ON DELETE CASCADE)
```

-- Inserting values into Table: PASSENGER3--

```
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(1,'AI2014')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(2,'LH9876')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(3,'9W2334')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(4,'QR1902')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(5,'EY1234')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(6,'BA3056')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(7,'9W2334')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(8,'AA4367')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(9,'QR1902')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(10,'EK3456')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(11,'BA1689')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(12,'QR1902')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(13,'AI2014')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(14,'BA1689')
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(15,'QR2305')
```

-- Viewing Table—

```
SELECT *FROM PASSENGER3
```

PID	FLIGHT_CODE
1	AI2014
2	LH9876
3	9W2334
4	QR1902
5	EY1234
6	BA3056
7	9W2334
8	AA4367
9	QR1902
10	EK3456
11	BA1689
12	QR1902
13	AI2014
14	BA1689
15	QR2305

15 rows selected.

-- Inserting Table: EMPLOYEE1—

```

CREATE TABLE EMPLOYEE1
(SSN INT NOT NULL,
FNAME VARCHAR2(20),
M VARCHAR(1),
LNAME VARCHAR2(20),
ADDRESS VARCHAR2(100),
PHONE INT,
AGE INT,
SEX VARCHAR(1),
JOBTYP VARCHAR2(30),
ASTYPE VARCHAR2(30),
ETYPE VARCHAR2(30),
SHIFT VARCHAR2(20),
POSITION VARCHAR2(30),
AP_NAME VARCHAR2(100),
PRIMARY KEY(SSN),
FOREIGN KEY(AP_NAME) REFERENCES AIRPORT(AP_NAME) ON DELETE CASCADE)

```

-- Inserting values in table: EMPLOYEE1 --

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(123456789,'LINDA','M','GOODMAN','731 Fondren, Houston, TX',4356789345, 35, 'F',
'ADMINISTRATIVE SUPPORT','RECEPTIONIST',' ',' ','LouisvilleInternationalAirport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(333445555,'JOHNY','N','PAUL','638 Voss, Houston, TX',9834561995, 40, 'M',
'ADMINISTRATIVE SUPPORT','SECRETARY',' ',' ','LouisvilleInternationalAirport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(999887777,'JAMES','P','BOND','3321 Castle, Spring, TX',9834666995, 50, 'M','ENGINEER',' ',
'RADIO ENGINEER',' ',' ','Louisville International Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(987654321,'SHERLOCK','A','HOLMES','123 TOP HILL, SAN Francisco,CA',8089654321, 47, 'M',
'TRAFFIC MONITOR',' ','DAY',' ','San Francisco International Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(666884444,'SHELDON','A','COOPER','345 CHERRY PARK, HESSE,GERMANY',1254678903, 55, 'M',
'TRAFFIC MONITOR',' ','NIGHT',' ','Frankfurt Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(453453453,'RAJ','B','SHARMA','345 FLOYDS, MUMBAI,INDIA',4326789031, 35, 'M',
'AIRPORT AUTHORITY',' ',' ','MANAGER','Chhatrapati Shivaji International Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(987987987,'NIKITA','C','PAUL','110 SYNERGY PARK, DALLAS,TX',5678904325, 33, 'F','ENGINEER',' ',
'AIRPORT CIVIL ENGINEER',' ',' ','Dallas/Fort Worth International Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(888665555,'SHUBHAM','R','GUPTA','567 CHANDANI CHOWK, DELHI, INDIA',8566778890, 39, 'M',

```

```

'ADMINISTRATIVE SUPPORT','DATA ENTRY WORKER',' ',' ','Indira GandhiInternational Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,
POSITION, AP_NAME)
VALUES(125478909,'PRATIK','T','GOMES','334 VITRUVIAN PARK, ALBANY, NY',4444678903, 56, 'M',
'TRAFFIC MONITOR',' ','DAY',' ','John F. Kennedy International Airport')

```

```

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYP, ASTYPE, ETYPE, SHIFT,

```

POSITION, AP_NAME)
VALUES(324567897,'ADIT','P','DESAI','987 SOMNATH, CHANDIGARH, INDIA',2244658909, 36, 'M',
'TRAFFIC MONITOR','DAY','','','Chandigarh International Airport')

-- Viewing Table--

SELECT *FROM EMPLOYEE1

SSN	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX	JOBTYPE	ASTYPE	ETYPE	SHIFT	POSITION	AP_NAME
123456789	LINDA	M	GOODMAN	731 Fondren, Houston, TX	4356789345	35	F	ADMINISTRATIVE SUPPORT	RECEPTIONIST	-	-	-	Louisville International Airport
333445555	JOHNY	N	PAUL	638 Voss, Houston, TX	9834561995	40	M	ADMINISTRATIVE SUPPORT	SECRETARY	-	-	-	Louisville International Airport
999887777	JAMES	P	BOND	3321 Castle, Spring, TX	9834666995	50	M	ENGINEER	-	RADIO ENGINEER	-	-	Louisville International Airport
987654321	SHERLOCK	A	HOLMES	123 TOP HILL, SAN Francisco,CA	8089654321	47	M	TRAFFIC MONITOR	-	-	DAY	-	San Francisco International Airport
666884444	SHELDON	A	COOPER	345 CHERRY PARK, HESSE,GERMANY	1254678903	55	M	TRAFFIC MONITOR	-	NIGHT	-	-	Frankfurt Airport
453453453	RAJ	B	SHARMA	345 FLOYDS, MUMBAI,INDIA	4326789031	35	M	AIRPORT AUTHORITY	-	-	-	MANAGER	Chhatrapati Shivaji International Airport
987987987	NIKITA	C	PAUL	110 SYNERGY PARK, DALLAS,TX	5678904325	33	F	ENGINEER	-	AIRPORT CIVIL ENGINEER	-	-	Dallas/Fort Worth International Airport
888665555	SHUBHAM	R	GUPTA	567 CHANDANI CHOWK, DELHI, INDIA	8566778890	39	M	ADMINISTRATIVE SUPPORT	DATA ENTRY WORKER	-	-	-	Indira Gandhi International Airport
125478909	PRATIK	T	GOMES	334 VITRUVIAN PARK, ALBANY, NY	4444678903	56	M	TRAFFIC MONITOR	-	DAY	-	-	John F. Kennedy International Airport
324567897	ADIT	P	DESAI	987 SOMNATH, CHANDIGARH, INDIA	2244658909	36	M	TRAFFIC MONITOR	-	DAY	-	-	Chandigarh International Airport

10 rows selected.

-- Inserting Table: EMPLOYEE2 --
CREATE TABLE EMPLOYEE2
(JOBTYPE VARCHAR2(30) NOT NULL,
SALARY INT,
PRIMARY KEY(JOBTYPE))

-- Inserting Values in Table: EMPLOYEE2 --
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('ADMINISTRATIVE SUPPORT',50000)
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('ENGINEER',70000)
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('TRAFFIC MONITOR',80000)
INSERT INTO EMPLOYEE2(JOBTYPE, SALARY)VALUES('AIRPORT AUTHORITY',90000)

-- Viewing Table—

SELECT *FROM EMPLOYEE2

JOBTYPE	SALARY
ADMINISTRATIVE SUPPORT	50000
ENGINEER	70000
TRAFFIC MONITOR	80000
AIRPORT AUTHORITY	90000

4 rows selected.

-- Inserting Table: SERVES --

```
CREATE TABLE SERVES
(SSN INT NOT NULL,
PID INT NOT NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(SSN, PID, PASSPORTNO),
FOREIGN KEY(SSN) REFERENCES EMPLOYEE1(SSN) ON DELETE CASCADE,
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE)
```

-- INSERTING VALUES INTO TABLE: SERVES --

```
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,1,'A1234568')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,15,'R8990566')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,9,'Q1243567')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,4,'D1002004')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,13,'P3452390')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,10,'S1243269')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,12,'K3212322')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,12,'K3212322')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,7,'J9801235')
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,7,'J9801235')
```

-- Viewing Table--

```
SELECT *FROM SERVES
```

SSN	PID	PASSPORTNO
123456789	1	A1234568
123456789	7	J9801235
123456789	9	Q1243567
123456789	15	R8990566
333445555	10	S1243269
333445555	12	K3212322
888665555	4	D1002004
888665555	7	J9801235
888665555	12	K3212322
888665555	13	P3452390

-- Inserting Table: TICKET1 --

```
CREATE TABLE TICKET1
(TICKET_NUMBER INT NOT NULL,
SOURCE VARCHAR(3),
DESTINATION VARCHAR(3),
DATE_OF_BOOKING DATE,
DATE_OF_TRAVEL DATE,
SEATNO VARCHAR(5),
CLASS VARCHAR2(15),
DATE_OF_CANCELLATION DATE,
PID INT,
PASSPORTNO VARCHAR(10),
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE)
```

-- Inserting values into Table: TICKET1--

```
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(0011234111122,'BOM','DFW','11-MAY-16','15-DEC-16','32A','ECONOMY',1,'A1234568')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(0984567222299,'JFK','BOM','11-JUN-16','10-DEC-16','20-DEC-16','45D','ECONOMY',2,'B9876541')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1768901333273,'IAH','DEL','21-AUG-16','25-DEC-16','1A','BUSINESS',3,'C2345698')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5890987441464,'IXC','IAH','10-AUG-16','12-JAN-17','20C','FIRST-CLASS',4,'D1002004')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1577654664266,'JFK','TPA','13-JUN-16','10-DEC-16','54E','ECONOMY',5,'X9324666')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(2206543545545,'BOM','DFW','11-NOV-16','12-FEB-17','43B','ECONOMY',6,'B8765430')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(7064321779737,'IAH','DEL','15-NOV-16','25-DEC-16','27B','FIRST-CLASS',7,'J9801235')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1571357215116,'SFO','FRA','15-OCT-16','18-DEC-16','34E','ECONOMY',8,'A1122334')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1570864987655,'IXC','IAH','12-NOV-16','30-DEC-16','54C','ECONOMY',9,'Q1243567')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1579283997799,'BOM','SFO','22-JAN-16','15-DEC-16','38A','ECONOMY',10,'S1243269')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1255701876107,'FRA','DEL','19-OCT-16','31-DEC-16','57F','ECONOMY',11,'E3277889')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1251334499699,'IXC','IAH','20-NOV-16','12-JAN-17','45D','ECONOMY',12,'K3212322')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1258776199490,'BOM','DFW','13-MAY-16','25-MAY-16','15-DEC-16','37C','ECONOMY',13,'P3452390')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5891155114477,'FRA','DEL','26-JUN-16','23-DEC-16','55C','ECONOMY',14,'W7543336')
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING,
DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5893069766787,'BOM','DFW','11-AUG-16','22-DEC-16','33F','ECONOMY',15,'R8990566')
```

-- Viewing Table --

TICKET_NUMBER	SOURCE	DESTINATION	DATE_OF_BOOKING	DATE_OF_TRAVEL	SEATNO	CLASS	DATE_OF_CANCELLATION	PID	PASSPORTNO
11234111122	BOM	DFW	11-MAY-16	15-DEC-16	32A	ECONOMY	-	1	A1234568
98456722299	JFK	BOM	11-JUN-16	20-DEC-16	45D	ECONOMY	10-DEC-16	2	B9876541
176890133273	IAH	DEL	21-AUG-16	25-DEC-16	1A	BUSINESS	-	3	C2345698
5890987441464	IXC	IAH	10-AUG-16	12-JAN-17	20C	FIRST-CLASS	-	4	D1002004
1577654664266	JFK	TPA	13-JUN-16	10-DEC-16	54E	ECONOMY	-	5	X9324666
2206543545545	BOM	DFW	11-NOV-16	12-FEB-17	43B	ECONOMY	-	6	B8765430
7064321779737	IAH	DEL	15-NOV-16	25-DEC-16	27B	FIRST-CLASS	-	7	J9801235
1571357215116	SFO	FRA	15-OCT-16	18-DEC-16	34E	ECONOMY	-	8	A1122334
1570864987655	IXC	IAH	12-NOV-16	30-DEC-16	54C	ECONOMY	-	9	Q1243567
1579283997799	BOM	SFO	22-JAN-16	15-DEC-16	38A	ECONOMY	-	10	S1243269
1255701876107	FRA	DEL	19-OCT-16	31-DEC-16	57F	ECONOMY	-	11	E3277889
1251334499699	IXC	IAH	20-NOV-16	12-JAN-17	45D	ECONOMY	-	12	K3212322
1258776199490	BOM	DFW	13-MAY-16	15-DEC-16	37C	ECONOMY	25-MAY-16	13	P3452390
5891155114477	FRA	DEL	26-JUN-16	23-DEC-16	55C	ECONOMY	-	14	W7543336
5893069766787	BOM	DFW	11-AUG-16	22-DEC-16	33F	ECONOMY	-	15	R8990566

15 rows selected.

-- Inserting Table: TICKET2--

```
CREATE TABLE TICKET2
(DATE_OF_BOOKING DATE NOT NULL,
SOURCE VARCHAR(3) NOT NULL,
DESTINATION VARCHAR(3) NOT NULL,
CLASS VARCHAR2(15) NOT NULL,
PRICE INT,
PRIMARY KEY (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS))
```

-- Inserting Values into: TICKET2 --

```
VALUES('15-OCT-16','SFO','FRA','ECONOMY',170000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('12-NOV-16','IXC','IAH','ECONOMY',140000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('22-JAN-16','BOM','SFO','ECONOMY',45000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('19-OCT-16','FRA','DEL','ECONOMY',100000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('20-NOV-16','IXC','IAH','ECONOMY',120000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('13-MAY-16','BOM','DFW','ECONOMY',65000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('26-JUN-16','FRA','DEL','ECONOMY',80000)
INSERT INTO TICKET2 (DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-AUG-16','BOM','DFW','ECONOMY',98000)
```

-- Viewing Table--

SELECT *FROM TICKET2

DATE_OF_BOOKING	SOURCE	DESTINATION	CLASS	PRICE
11-MAY-16	BOM	DFW	ECONOMY	95000
11-JUN-16	JFK	BOM	ECONOMY	100000
21-AUG-16	IAH	DEL	BUSINESS	200000
10-AUG-16	IXC	IAH	FIRST-CLASS	150000
13-JUN-16	JFK	TPA	ECONOMY	98000
11-NOV-16	BOM	DFW	ECONOMY	125000
15-NOV-16	IAH	DEL	FIRST-CLASS	195000
15-OCT-16	SFO	FRA	ECONOMY	170000
12-NOV-16	IXC	IAH	ECONOMY	140000
22-JAN-16	BOM	SFO	ECONOMY	45000
19-OCT-16	FRA	DEL	ECONOMY	100000
20-NOV-16	IXC	IAH	ECONOMY	120000
13-MAY-16	BOM	DFW	ECONOMY	65000
26-JUN-16	FRA	DEL	ECONOMY	80000
11-AUG-16	BOM	DFW	ECONOMY	98000

15 rows selected.

-- Inserting Table: TICKET3 --

```
CREATE TABLE TICKET3  
(DATE_OF_CANCELLATION DATE NOT NULL,  
SURCHARGE INT,  
PRIMARY KEY(DATE_OF_CANCELLATION))
```

-- INSERTING VALUES INTO TABLE: TICKET3 --

```
INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('10-DEC-16',75000)  
INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('25-MAY-16',25000)
```

-- Viewing Table—

DATE_OF_CANCELLATION	SURCHARGE
10-DEC-16	75000
25-MAY-16	25000

2 rows selected.

PROCEDURES

```
CREATE OR REPLACE PROCEDURE DFWECONOMYPASSENGERS
IS
CURSOR ECOPASSDETAILS IS
SELECT al.AL_NAME, fl.FLIGHT_CODE, p2.FNAME, p2.LNAME, p2.PASSPORTNO, t.CLASS, t.DATE_OF_TRAVEL, t.DESTINATION,
t.SOURCE, t.SEATNO, t.TICKET_NUMBER
FROM Airline al
JOIN Flight fl ON al.AIRLINEID = fl.AIRLINEID
JOIN PASSENGER3 p3 ON fl.FLIGHT_CODE = p3.FLIGHT_CODE
JOIN PASSENGER1 p1 ON p1.PID = p3.PID
JOIN PASSENGER2 p2 ON p2.PASSPORTNO = p1.PASSPORTNO
JOIN TICKET1 t ON t.PASSPORTNO = p2.PASSPORTNO
WHERE t.CLASS='ECONOMY' AND t.DESTINATION='DFW';

PASSDETAILS ECOPASSDETAILS%ROWTYPE;

BEGIN
OPEN ECOPASSDETAILS ;
LOOP
FETCH ECOPASSDETAILS INTO PASSDETAILS;
EXIT WHEN ECOPASSDETAILS%NOTFOUND;
DBMS_OUTPUT.PUT_LINE(PASSDETAILS.AL_NAME || ' ' || PASSDETAILS.FLIGHT_CODE || ' ' || PASSDETAILS.FNAME || ' ' ||
PASSDETAILS.LNAME || ' ' || PASSDETAILS.PASSPORTNO || ' ' || PASSDETAILS.CLASS || ' ' || PASSDETAILS.SOURCE || ' ' ||
PASSDETAILS.SEATNO || ' ' || PASSDETAILS.TICKET_NUMBER);
END LOOP;
CLOSE ECOPASSDETAILS;
END DFWECONOMYPASSENGERS;
```

Procedure created.

```
BEGIN
DFWECONOMYPASSENGERS();
END;
```

Statement processed.

Air India Limited AI2014 ALEN SMITH A1234568 ECONOMY BOM 32A 11234111122

Air India Limited AI2014 ALIA BHAT P3452390 ECONOMY BOM 37C 1258776199490

British Airways BA3056 LAKSHMI SHARMA B8765430 ECONOMY BOM 43B 2206543545545

Qatar Airways QR2305 RIA GUPTA R8990566 ECONOMY BOM 33F 5893069766787

CREATE OR REPLACE PROCEDURE FLIGHTSBYSTATUS

```
(  
  IN_STATUS IN VARCHAR2  
) AS
```

CURSOR fSTATUS is

```
select distinct f.FLIGHT_CODE ,al.AL_NAME ,f.ARRIVAL,f.departure,f.SOURCE,f.DESTINATION,f.STATUS,f.FLIGHTTYPE  
from Airline al ,Airport ap,flight f  
where al.AIRLINEID=f.AIRLINEID  
and f.STATUS =IN_STATUS;
```

FlightStatus fSTATUS%rowtype;

BEGIN

Open fSTATUS ;

LOOP

fetch fSTATUS into FlightStatus;

EXIT WHEN fSTATUS%NOTFOUND;

```
dbms_output.put_line (FlightStatus.FLIGHT_CODE || ' ' || FlightStatus.AL_NAME || ' ' || FlightStatus.ARRIVAL || ' ' ||  
FlightStatus.departure|| ' ' ||FlightStatus.Source || ' ' || FlightStatus.DESTINATION || ' ' || FlightStatus.STATUS || ' ' ||  
FlightStatus.FLIGHTTYPE);
```

END LOOP;

close fSTATUS;

END FLIGHTSBYSTATUS;

Procedure created.

BEGIN

FLIGHTSBYSTATUS('Delayed');

END;

Statement processed.

QR2305 Qatar Airways 13:00 13:55 BOM DFW Delayed Non-stop

QR1902 Qatar Airways 22:00 22:50 IXC IAH Delayed Non-stop

BEGIN

FLIGHTSBYSTATUS('On-time');

END;

Statement processed.

LH9876 Lufthansa 05:50 06:35 JFK BOM On-time Non-stop

AI2014 Air India Limited 02:10 03:15 BOM DFW On-time Connecting

EY1234 Ethiad Airways 19:20 20:05 JFK TPA On-time Connecting

AA4367 American Airlines 18:10 18:55 SFO FRA On-time Non-stop

9W2334 Jet Airways 23:00 13:45 IAH DEL On-time Direct

EK3456 Emirates 18:50 19:40 BOM SFO On-time Non-stop

BA1689 British Airways 10:20 10:55 FRA DEL On-time Non-stop

BA3056 British Airways 02:15 02:55 BOM DFW On-time Connecting

TRIGGERS

```
( CREATE TABLE "DELAYED_FLIGHTS"  
  "FLIGHT_CODE" VARCHAR2(20 BYTE),  
  "DESTINATION" VARCHAR2(20 BYTE),  
  "SOURCE" VARCHAR2(20 BYTE),  
  "AIRLINEID" VARCHAR2(20 BYTE),  
  "REPORT_TIME" DATE  
)
```

```
INSERT INTO FLIGHT(FLIGHT_CODE, SOURCE, DESTINATION, ARRIVAL, DEPARTURE, STATUS, DURATION, FLIGHTTYPE,  
LAYOVER_TIME, NO_OF_STOPS, AIRLINEID)
```

```
VALUES('AI127','BOM','DFW','02:10','03:15','Delayed','24hr','Connecting',3,1,'AI')
```

```
SELECT *FROM FLIGHT
```

FLIGHT_CODE	SOURCE	DESTINATION	ARRIVAL	DEPARTURE	STATUS	DURATION	FLIGHTTYPE	LAYOVER_TIME	NO_OF_STOPS	AIRLINEID
AI127	BOM	DFW	02:10	03:15	Delayed	24hr	Connecting	3	1	AI
AI2014	BOM	DFW	02:10	03:15	On-time	24hr	Connecting	3	1	AI
QR2305	BOM	DFW	13:00	13:55	Delayed	21hr	Non-stop	0	0	QR
EY1234	JFK	TPA	19:20	20:05	On-time	16hrs	Connecting	5	2	EY
LH9876	JFK	BOM	05:50	06:35	On-time	18hrs	Non-stop	0	0	LH
BA1689	FRA	DEL	10:20	10:55	On-time	14hrs	Non-stop	0	0	BA
AA4367	SFO	FRA	18:10	18:55	On-time	21hrs	Non-stop	0	0	AA
QR1902	IXC	IAH	22:00	22:50	Delayed	28hrs	Non-stop	5	1	QR
BA3056	BOM	DFW	02:15	02:55	On-time	29hrs	Connecting	3	1	BA
EK3456	BOM	SFO	18:50	19:40	On-time	30hrs	Non-stop	0	0	EK
9W2334	IAH	DEL	23:00	13:45	On-time	23hrs	Direct	0	0	9W

```
BEGIN
if updating('STATUS')
then
```

if up
then

```
CREATE TABLE TICKET_PRICE_HISTORY
(DATE_OF_BOOKING DATE NOT NULL,
SOURCE VARCHAR(3) NOT NULL,
DESTINATION VARCHAR(3) NOT NULL,
CLASS VARCHAR2(15) NOT NULL,
PRICE INT,
```

```
CREATE OR REPLACE TRIGGER UPDATEDSalary AFTER
INSERT OR
UPDATE OF SALARY ON EMPLOYEE2
FOR EACH ROW
DECLARE
JOBTYPE EMPLOYEE2.JOBTYPE%TYPE;
BEGIN
CASE
WHEN (JOBTYPE= 'Administrative Support') THEN
UPDATE EMPLOYEE2 SET SALARY=SALARY+SALARY*.10;
WHEN (JOBTYPE= 'ENGINEER') THEN
UPDATE EMPLOYEE2 SET SALARY=SALARY+SALARY*.05;
```

```
WHEN (JOBTYP= 'TRAFFIC MONITOR') THEN
  UPDATE EMPLOYEE2 SET SALARY=SALARY+SALARY*.25;
WHEN (JOBTYP= 'AIRPORT AUTHORITY') THEN
  UPDATE EMPLOYEE2 SET SALARY=SALARY+SALARY*.45;
END CASE;
END;
```

Trigger created.

```
CREATE OR REPLACE TRIGGER TICKET_PRICE_HISTORY
BEFORE UPDATE OF PRICE
ON TICKET2
FOR EACH ROW
```

```
BEGIN
INSERT INTO TICKET_PRICE_HISTORY
VALUES(:OLD.DATE_OF_BOOKING, :OLD.SOURCE, :OLD.DESTINATION, :OLD.CLASS, :OLD.PRICE);
END;
```

--LET'S UPDATE A PRICE OR FARE OF AN AIR TICKET --

```
UPDATE TICKET2
SET PRICE=150000
WHERE DATE_OF_BOOKING ='11-NOV-16'
AND SOURCE='BOM'
AND DESTINATION='DFW'
AND CLASS='ECONOMY'
```

1 row(s) updated.

