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5/26/17

Final Project

Business requirements to solve problem:

- This ***EZTravel.com*** **Airline Reservation System** is designed to allow customers (passengers) or travel agencies (on behalf of the customer/passenger) to conveniently book flights.
- The application is to support dozens of airports in major cities around the world as well as hundreds of flights by various airline companies.
- This website needs to capture information on the following passenger types of passengers:
  - A regular passenger is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and credit card expiration date. Promotional Discount code from other businesses or organizations.
  - Frequent-flyer passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition to Frequent-flyer number, total mileage balance, mileage expiration date. Note that frequent-flyer members get special prices and cannot leverage any promotional discounts from other businesses or organizations.
  - Travel agency passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition, the travel agency ID which booked the flight, travel agency name, agency address, agency phone, agency rep who booked the ticket & travel agency discount code & discount amount.
  - US military passenger who is identified by a passenger identification number, passenger name composed of first, middle & last name. Also, Address which include the following components: address, city, state and zip code. Also, gender, contact phone & email address. We also need to store the credit card information which is composed of the credit card number, credit card company name, and finally credit card expiration date. In addition, US Military ID & Branch of the military (Navy, Airforce, Army Marines, etc.), and Military discount code. Note that military personnel and their family members get special prices & military discounts and cannot leverage any promotional discounts from other businesses or

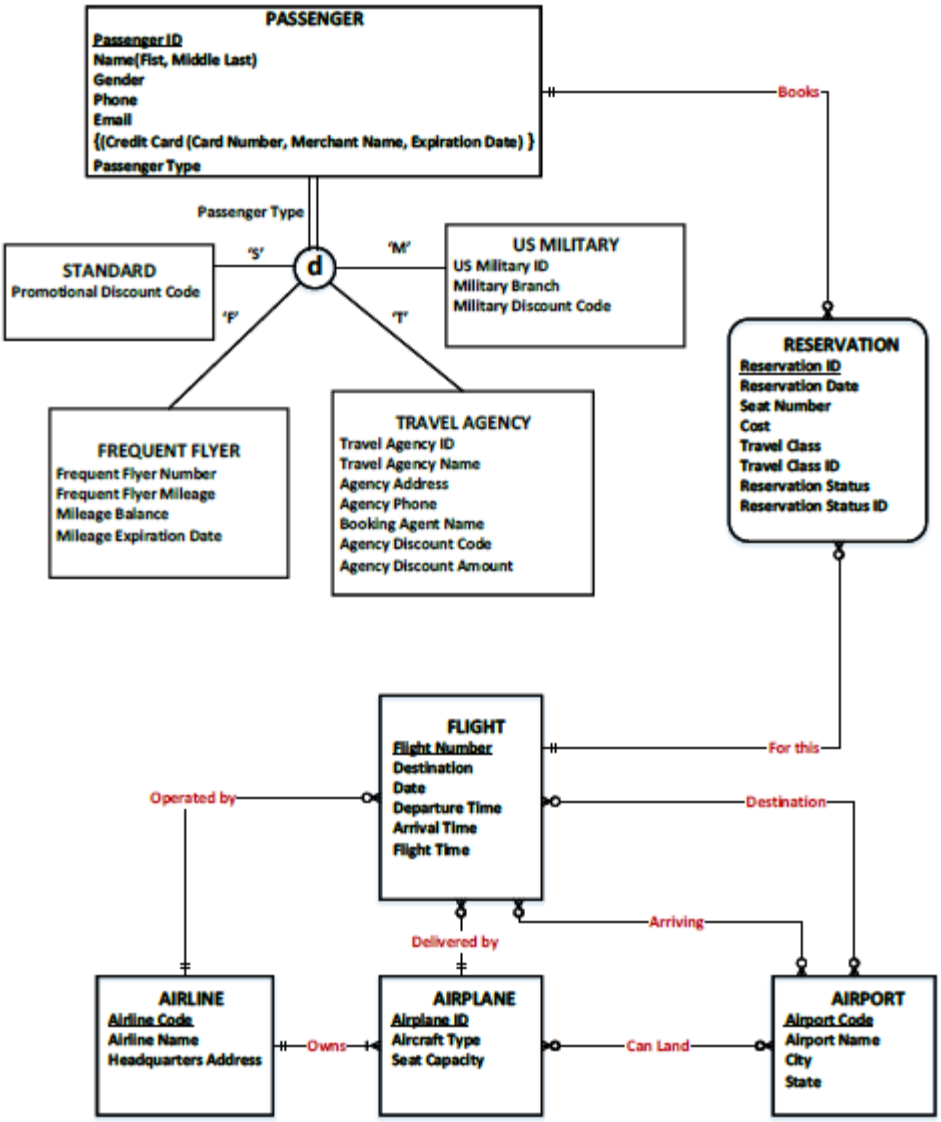
organizations

- Most people have more than one credit card. Therefore, a passenger can use any of the many types of major credit card he or she has. In addition, the credit card can be owned by the passenger, spouse or someone else who co-owns the credit card. Or the card can be owned by the passenger and a corporate entity/company.
- Each of these passenger profiles can make a booking or reservation for a flight via the online system.
- A passenger books or reserves a flight. For each reservation or booking made by a passenger, we wish to capture a reservation ID, booking Date of reservation, seat number for flight, total cost of flight, travel class (economy, business or first class) & travel class ID. In addition, booking status (confirmed, cancelled, stand-by, etc.) & booking status ID.
- A passenger can book many flights, and a flight can be booked by many passengers. But each reservation or booking is for one customer and one flight only
- The flight reserved by a customer is identified by flight number, destination city, flight date, departure time, arrival time, flight time
- A flight is delivered by an Airline. An airline can have many flights but one flight can only be delivered by one airline. A flight will be delivered by an airplane from the airline. A flight is targeted for a destination airport. Or a flight may be arriving from an airport of origin, before it departs to the destination.
- An airplane land in many airports and an airport can receive many planes. Nevertheless, there are restriction were some airlines cannot land in certain airports.
- Airport is identified by Airport code, Name, state, city
- Airplane is identified by Airplane ID & Aircraft Type, Number of seats, Airport in which this type of aircraft can land.
- Airline is identified by Airline code, name, headquarters address.

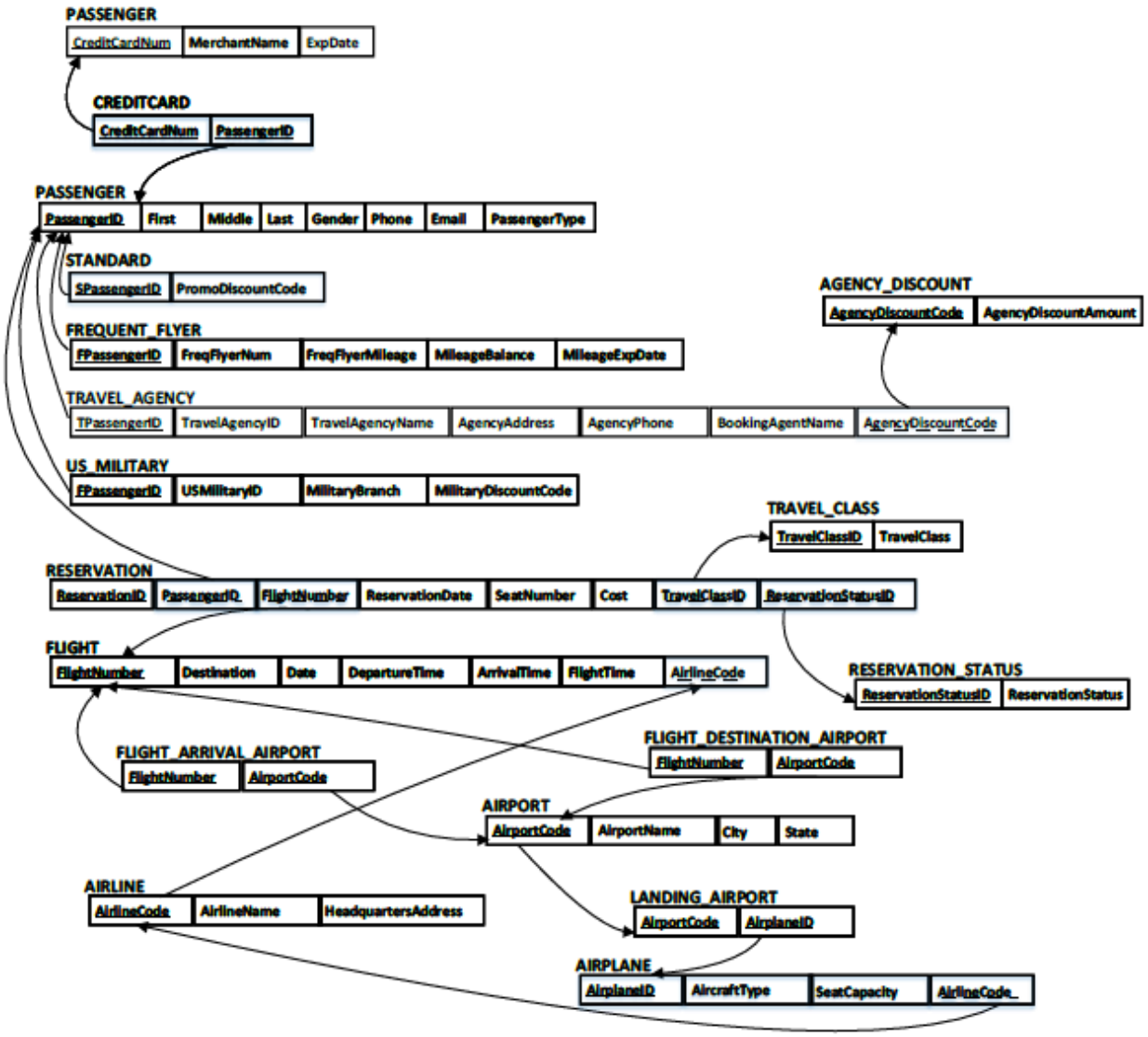
Additional requirements and assumptions:

- In this scenario, we are assuming each flight has only a route with one leg only. In other words, we are dealing with non-stop only flights. Future version of this project will add features for multiple stops or legs.

EER DIAGRAM BASED ON REQUIREMENTS:



NORMALIZED LOGICAL MODEL:



DATA DICTIONARY:

Passenger	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Passenger_ID	Number	NUMBER	5	Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger.	Y
First	Variable Character	VARCHAR2	20	NOT-NULL	Passenger's first name.	Y
Middle	Variable Character	VARCHAR2	20	NULL	Passenger's middle name.	N
Last	Variable Character	VARCHAR2	20	NOT-NULL	Passenger's last name.	Y
Gender	Variable Character	CHAR	1	NOT-NULL	Passenger's Gender.	Y
Phone	Variable Character	VARCHAR2	30	NOT-NULL	Passenger's phone number.	Y
Email	Variable Character	VARCHAR2	50	NULL	Passenger's email.	N
CreditCardNum	Variable Character	VARCHAR2	20	UNIQUE NOT-NULL	Credit card used by passenger.	Y
MerchantName	Variable Character	VARCHAR2	20	NOT-NULL	Credit card company name	Y
ExpDate	Character	CHAR	4	NOT-NULL	Credit card expire date.	Y
Passenger_Type	Character	CHAR	1	NOT-NULL	Discriminator of passenger type	Y

CREDITCARD	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
CreditCardNum	Variable Character	VARCHAR2	20	COMPOSITE PRIMARY KEY NOT-NULL	Credit card used by passenger. Composite key from passenger table.	Y
Passenger_ID	Number	NUMBER	5	Composite Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger. Composite key from passenger table.	Y

STANDARD	Column1	Column2	Column3	Column4	Column5
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**
Passenger_ID	Number	NUMBER	5	Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger.
PromoDiscountCode	Variable Character	VARCHAR2	20	NULL	Standard Passenger's discount code.

FREQUENT_FLYER	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Passenger_ID	Number	NUMBER	5	Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger.	Y
FreqFlyerNum	Variable Character	VARCHAR2	20	NOT-NULL	Identifier for a passenger's frequent flyer membership.	Y
FreqFlyerMilage	Number	NUMBER	9	NOT-NULL	Amount of miles traveled by	Y

					passenger	
MilageBalance	Number	NUMBER	9	NOT-NULL	Miles available for passenger	Y
MilageExpDate	Date	DATE	N/A	NOT-NULL	Date Unused miles will expire	Y

TRAVEL_AGENCY	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Passenger_ID	Number	NUMBER	5	Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger.	Y
TravelAgencyID	Number	NUMBER	5	NOT-NULL	Identifier for the travel agency	Y
TravelAgencyName	Variable Character	VARCHAR2	20	NOT-NULL	Travel Agency Name	Y
AgencyAddress	Variable Character	VARCHAR2	75	NOT-NULL	Agency Address	Y
AgencyPhone	Variable Character	VARCHAR2	30	NOT-NULL	Agency Phone Number.	Y
BookingAgentName	Variable Character	VARCHAR2	30	NOT-NULL	Booking Agent Name	Y
AgencyDiscountCode	Variable Character	VARCHAR2	10	Foreign Key NOT-NULL	Agency's discount code	Y

AGENCY_DISCOUNT	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
AgencyDiscountCode	Variable Character	VARCHAR2	10	Primary Key NOT-NULL	Agency's discount code	Y
AgencyDiscountAmount	Number	NUMBER	5	NOT-NULL	Discount Amount	Y

US_MILITARY	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Passenger_ID	Number	NUMBER	5	Primary Key NOT-NULL	PassengerID. Unique Identifier for a passenger.	Y
USMilitaryID	Number	NUMBER	5	NOT-NULL	ID for military passenger	Y
MilitaryBranch	Variable Character	VARCHAR2	10	NOT-NULL	Branch of military for passenger	Y
MilitaryDiscountCode	Variable Character	VARCHAR2	10	NOT-NULL	Discount code from military	Y

RESERVATION	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Reservation_ID	Number	NUMBER	5	Primary Key NOT-NULL	ReservationID. Unique Identifier for a reservation.	Y
Passenger_ID	Number	NUMBER	5	Foreign Key NOT-NULL	PassengerID. Unique Identifier for a passenger.	Y
Flight_Number	Number	NUMBER	5	Foreign Key NOT-NULL	FlightNumber. Unique Identifier for a flight	Y
ReservationDate	Date	DATE	N/A	NOT-NULL	Date of Reservation	Y
SeatNumber	Character	CHAR	4	NOT-NULL	Seat on Flight	Y
Cost	Number	NUMBER(X,Y)	X.Y	NOT-NULL	Cost of Flight	Y
TravelClassID	Number	NUMBER	5	Foreign Key NOT-	ID of travel class	Y

				NULL		
ReservationStatusID	Number	NUMBER	5	Foreign Key NOT-NULL	ID of Reservation Status	Y

TRAVEL_CLASS	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
TravelClassID	Number	NUMBER	5	Primary Key NOT-NULL	ID of travel class	Y
TravelClass	Variable Character	VARCHAR2	10	NOT-NULL	Name of Travel Class	Y

RESERVATION_STATUS	Column1	Column2	Column3	Column4	Column5
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**
ReservationStatusID	Number	NUMBER	5	Primary Key NOT-NULL	ID of Reservation Status
ReservationStatus	Variable Character	VARCHAR2	10	NOT-NULL	Status of Reservation

FLIGHT	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Flight_Number	Number	NUMBER	5	Primary Key NOT-NULL	Number of flight	Y
Destination	Variable Character	VARCHAR2	25	NOT-NULL	Flight destination	Y
FlightDate	Date	DATE	N/A	NOT-NULL	Date of flight	Y
DepartureTime	Variable Character	VARCHAR2	4	NOT-NULL	flight departure time	Y
ArrivalTime	Variable Character	VARCHAR2	4	NOT-NULL	Flight arrival time	Y
FlightTime	Variable Character	VARCHAR2	10	NOT-NULL	Flight duration	Y
AirlineCode	Variable Character	VARCHAR2	10	Foreign Key NOT-NULL	Code of Airline	Y

FLIGHT_ARRIVAL_AIRPORT	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/ Size /Format**	**Constraints**	**Description**	**Required?**
Flight_Number	Number	NUMBER	5	Primary Key NOT-NULL	Number of flight	Y
AirportCode	Variable Character	VARCHAR2	5	Primary Key NOT-NULL	Code of Arrival Airport	Y

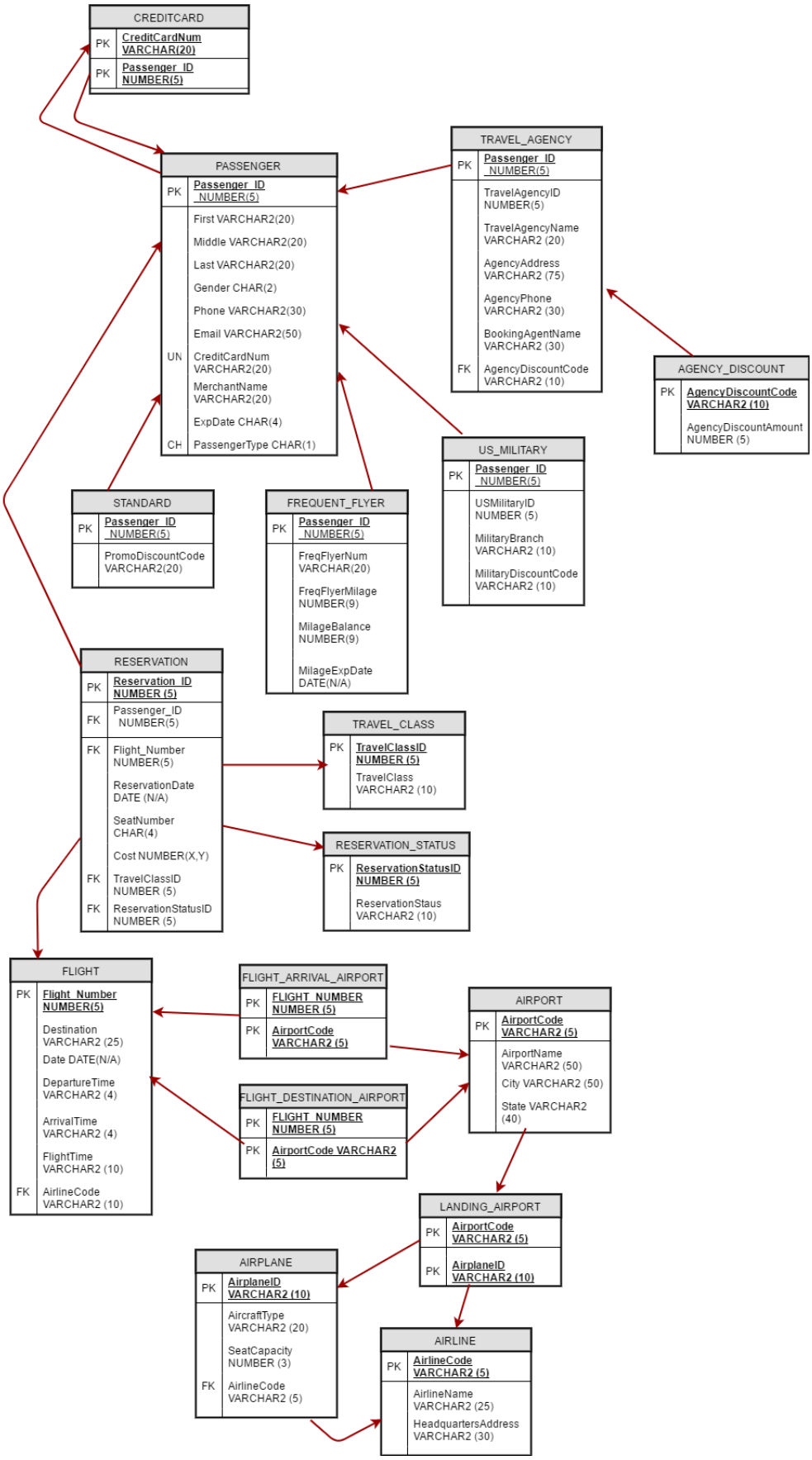
FLIGHT_DESTINATION_AIRPORT	Column 1	Column2	Column3	Column4	Column5	Column 6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
Flight_Number	Number	NUMBER	5	Primary Key NOT-NULL	Number of flight	Y
AirportCode	Variable Character	VARCHAR2	5	Primary Key NOT-NULL	Code of Destination Airport	Y

AIRPORT	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
AirportCode	Variable Character	VARCHAR2	5	Primary Key NOT-NULL	Code of Airport	Y
AirportName	Variable Character	VARCHAR2	50	NOT-NULL	Name of Airport	Y
City	Variable Character	VARCHAR2	50	NOT-NULL	Airport city location	Y
State	Variable Character	VARCHAR2	40	NOT-NULL	Airport state location	Y

LANDING_AIRPORT	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
AirportCode	Variable Character	VARCHAR2	5	Primary Key NOT-NULL	Code of Authorized Landing Airport	Y
AirplaneID	Variable Character	VARCHAR2	10	Primary Key NOT-NULL	ID of Airplane	Y

AIRPLANE	Column1	Column2	Column3	Column4	Column5	Column6
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
AirplaneID	Variable Character	VARCHAR2	10	Primary Key NOT-NULL	ID of Airplane	Y
AircraftType	Variable Character	VARCHAR2	20	NOT-NULL	Type of aircraft	Y
SeatCapacity	Number	Number	3	NOT-NULL	Seat Capacity on Airplane	Y
AirlineCode	Variable Character	VARCHAR2	5	Foreign Key NOT-NULL	Code of Airline	Y

AIRLINE	**Column1**	**Column2**	**Column3**	**Column4**	**Column5**	**Column6**
Attribute Name	**Data Type**	**Oracle Data Type**	**Length/Size /Format**	**Constraints**	**Description**	**Required?**
AirlineCode	Variable Character	VARCHAR2	5	Primary Key NOT-NULL	Code of Airline	Y
AirlineName	Variable Character	VARCHAR2	25	NOT-NULL	Name of Airline	Y
HeadquartersAddress	Variable Character	VARCHAR2	30	NOT-NULL	Address of airline headquarters	Y


CREDITCARD
PK CreditCardNum VARCHAR(20)
PK Passenger_ID NUMBER(5)
PASSENGER
PK Passenger_ID _NUMBER(5)
First VARCHAR2(20)
Middle VARCHAR2(20)
Last VARCHAR2(20)
Gender CHAR(2)
Phone VARCHAR2(30)
Email VARCHAR2(50)
UN CreditCardNum VARCHAR2(20)
MerchantName VARCHAR2(20)
ExpDate CHAR(4)
CH PassengerType CHAR(1)
TRAVEL_AGENCY
PK Passenger_ID _NUMBER(5)
TravelAgencyID NUMBER(5)
TravelAgencyName VARCHAR2 (20)
AgencyAddress VARCHAR2 (75)
AgencyPhone VARCHAR2 (30)
BookingAgentName VARCHAR2 (30)
FK AgencyDiscountCode VARCHAR2 (10)
AGENCY_DISCOUNT
PK AgencyDiscountCode VARCHAR2 (10)
AgencyDiscountAmount NUMBER (5)
US_MILITARY
PK Passenger_ID _NUMBER(5)
USMilitaryID NUMBER (5)
MilitaryBranch VARCHAR2 (10)
MilitaryDiscountCode VARCHAR2 (10)
STANDARD
PK Passenger_ID _NUMBER(5)
PromoDiscountCode VARCHAR2(20)
FREQUENT_FLYER
PK Passenger_ID _NUMBER(5)
FreqFlyerNum VARCHAR(20)
FreqFlyerMilage NUMBER(9)
MilageBalance NUMBER(9)
MilageExpDate DATE(N/A)
RESERVATION
PK Reservation_ID NUMBER (5)
FK Passenger_ID NUMBER(5)
FK Flight_Number NUMBER(5)
ReservationDate DATE (N/A)
SeatNumber CHAR(4)
Cost NUMBER(X,Y)
FK TravelClassID NUMBER (5)
FK ReservationStatusID NUMBER (5)
TRAVEL_CLASS
PK TravelClassID NUMBER (5)
TravelClass VARCHAR2 (10)
RESERVATION_STATUS
PK ReservationStatusID NUMBER (5)
ReservationStaus VARCHAR2 (10)
FLIGHT
PK Flight_Number NUMBER(5)
Destination VARCHAR2 (25)
Date DATE(N/A)
DepartureTime VARCHAR2 (4)
ArrivalTime VARCHAR2 (4)
FlightTime VARCHAR2 (10)
FK AirlineCode VARCHAR2 (10)
FLIGHT_ARRIVAL_AIRPORT
PK FLIGHT_NUMBER NUMBER (5)
PK AirportCode VARCHAR2 (5)
FLIGHT_DESTINATION_AIRPORT
PK FLIGHT_NUMBER NUMBER (5)
PK AirportCode VARCHAR2 (5)
AIRPORT
PK AirportCode VARCHAR2 (5)
AirportName VARCHAR2 (50)
City VARCHAR2 (50)
State VARCHAR2 (40)
LANDING_AIRPORT
PK AirportCode VARCHAR2 (5)
PK AirplaneID VARCHAR2 (10)
AIRPLANE
PK AirplaneID VARCHAR2 (10)
AircraftType VARCHAR2 (20)
SeatCapacity NUMBER (3)
FK AirlineCode VARCHAR2 (5)
AIRLINE
PK AirlineCode VARCHAR2 (5)
AirlineName VARCHAR2 (25)
HeadquartersAddress VARCHAR2 (30)

PHYSICAL SCHEMA SHOWN ABOVE

DDL STATEMENTS TO CREATE TABLES:

```
CREATE TABLE Passenger
(
Passenger_ID NUMBER(5) PRIMARY KEY,
First        VARCHAR2(20) NOT NULL,
Middle       VARCHAR2(20) NULL,
Last         VARCHAR2(20) NOT NULL,
Gender       CHAR(1)      NOT NULL,
Phone        VARCHAR(30)  NOT NULL,
Email        VARCHAR(50)  NOT NULL,
CreditCardNum VARCHAR(20) UNIQUE,
MerchantName  VARCHAR(20) NOT NULL,
ExpDate       CHAR(4)     NOT NULL,
Passenger_Type CHAR(1)    NOT NULL
);
```

```
--Create Credit Card table
Create table CreditCard
(
CreditCardNum VARCHAR(20),
Passenger_ID NUMBER(5),
constraint c_pk PRIMARY KEY (CreditCardNum,Passenger_ID)
);

--Create Standard Passenger Table
create table Standard
(
Passenger_ID NUMBER(5) PRIMARY KEY,
PromoDiscountCode VARCHAR2(20) NULL
);
```

```
--create frequent flyer table
create table Frequent_Flyer
(
Passenger_ID NUMBER(5) PRIMARY KEY,
FreqFlyerNum varchar2(20) not null,
FreqFlyerMilage number(9) not null,
MilageBalance number(9) not null,
MilageExpDate date not null
);

--create agency discount table
create table Agency_Discount
(
AgencyDiscountCode varchar2(10) primary key,
AgencyDiscountAmount number(5) not null
);
```

```
create table Travel_Agency
(
Passenger_ID number(5) primary key,
TravelAgencyID number(5) not null,
TravelAgencyName varchar2(20) not null,
AgencyAddress varchar2(75) not null,
AgencyPhone varchar2(30) not null,
BookingAgentName varchar2(30) not null,
AgencyDiscountCode varchar2(20) not null,

constraint AgencyDiscountCode_FK
foreign key (AgencyDiscountCode)
references Agency_Discount(AgencyDiscountCode)
);
```

```
--create us military table
create table US_Military
(
Passenger_ID number(5) primary key,
USMilitaryID number(5) not null,
MilitaryBranch varchar2(10) not null,
MilitaryDiscountCode varchar2(10) not null
);

--I begin to create the later tables first to add foreign keys later
--create airline table
create table Airline
(
AirlineCode varchar2(5) primary key,
AirlineName varchar2(25) not null,
HeadquartersAddress varchar2(30) not null
);
```

```
--create flight table
create table Flight
(
Flight_Number number(5) primary key,
Destination varchar2(25) not null,
FlightDate date not null,
DepartureTime varchar2(4) not null,
ArrivalTime varchar2(4) not null,
FlightTime varchar2(10) not null,
AirlineCode varchar2(5) not null,

constraint AirlineCode_FK
foreign key (AirlineCode)
references Airline(AirlineCode)
);
```

```
--create travel class table
create table Travel_Class
(
TravelClassID number(5) primary key,
TravelClass varchar2(10) not null
);

--create table reservation status
create table Reservation_Status
(
ReservationStatusID number(5) primary key,
ReservationStatus varchar2(10) not null
);
```

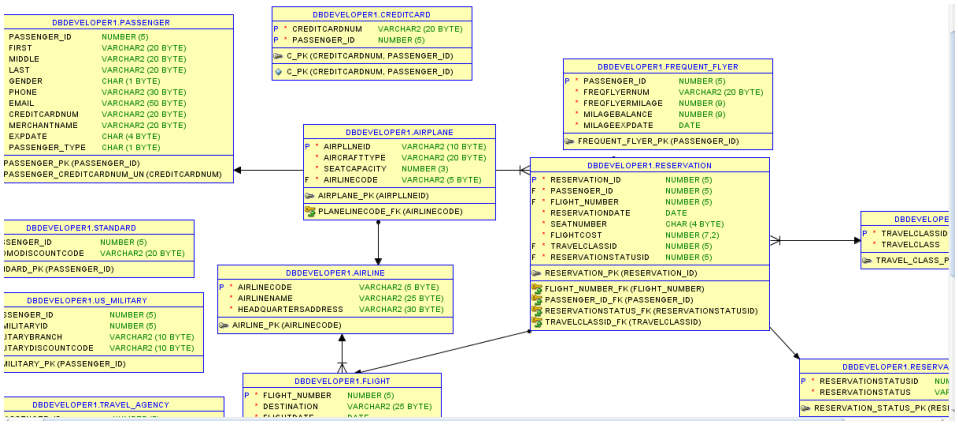
```
create table Reservation
(
Reservation_ID number(5) primary key,
Passenger_ID number(5) not null,
Flight_Number number(5) not null,
ReservationDate date not null,
SeatNumber char(4) not null,
FlightCost number(7,2) not null,
TravelClassID number(5) not null,
ReservationStatusID number(5) not null,

constraint Passenger_ID_FK
foreign key (Passenger_ID)
references Passenger(Passenger_ID),

constraint Flight_Number_FK
foreign key (Flight_Number)
references Flight(Flight_Number),

constraint TravelClassID_FK
foreign key (TravelClassID)
references Travel_Class(TravelClassID),

constraint ReservationStatus_FK
foreign key (ReservationStatusID)
references Reservation_Status(ReservationStatusID)
```

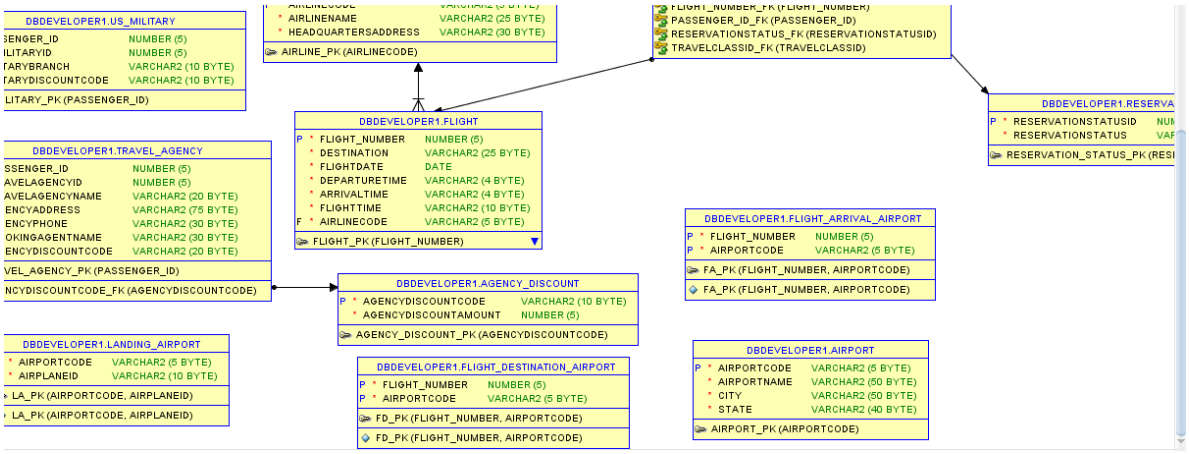
```
create table Flight_Arrival_Airport
(
Flight_Number number(5),
AirportCode varchar2(5),
constraint fa_pk primary key (Flight_Number, Ai
);

--create destination airport flight table
create table Flight_Destination_Airport
(
Flight_Number number(5),
AirportCode varchar2(5),
constraint fd_pk primary key (Flight_Number, Ai
);

--create airport table
create table Airport
(
AirportCode varchar2(5) primary key,
AirPortName varchar2(50) not null,
City varchar2(50) not null,
State varchar2(40) not null
);
```

```
--create landing airport table
create table Landing_Airport
(
AirportCode varchar2(5),
AirPlaneID varchar2(10),
constraint la_pk primary key (AirportCode, AirplaneID)
);

--create airplane table
create table Airplane
(
AirpllneID varchar2(10) primary key,
AircraftType varchar2(20) not null,
SeatCapacity number(3) not null,
AirlineCode varchar2(5) not null,

constraint planelinecode_fk
foreign key (AirlineCode)
references Airline(AirlineCode)
);
```

```
                                        Table PASSENGER created.


Table CREDITCARD created.


Table STANDARD created.


Table FREQUENT_FLYER created.
                                Table FLIGHT_ARRIVAL_AIRPORT created.
Table AGENCY_DISCOUNT created.
                                Table TRAVEL_CLASS created.
Table TRAVEL_AGENCY created.
                                Table RESERVATION created.
Table US_MILITARY created.
                                Table FLIGHT_DESTINATION_AIRPORT created.
Table AIRLINE created.

                                Table AIRPORT created.
Table FLIGHT created.

                                Table LANDING_AIRPORT created.
Table RESERVATION_STATUS created.
```

DATABASE SCHEMA DIAGRAM:


DBDEVELOPER1.PASSENGER
PASSENGER_ID NUMBER (5)
FIRST VARCHAR2 (20 BYTE)
MIDDLE VARCHAR2 (20 BYTE)
LAST VARCHAR2 (20 BYTE)
GENDER CHAR (1 BYTE)
PHONE VARCHAR2 (30 BYTE)
EMAIL VARCHAR2 (50 BYTE)
CREDITCARDNUM VARCHAR2 (20 BYTE)
MERCHANTNAME VARCHAR2 (20 BYTE)
EXPDATE CHAR (4 BYTE)
PASSENGER_TYPE CHAR (1 BYTE)
PASSENGER_PK (PASSENGER_ID)
PASSENGER_CREDITCARDNUM_UN (CREDITCARDNUM)
DBDEVELOPER1.CREDITCARD
P * CREDITCARDNUM VARCHAR2 (20 BYTE)
P * PASSENGER_ID NUMBER (5)
C_PK (CREDITCARDNUM, PASSENGER_ID)
C_PK (CREDITCARDNUM, PASSENGER_ID)
DBDEVELOPER1.FREQUENT_FLYER
P * PASSENGER_ID NUMBER (5)
* FREQFLYERNUM VARCHAR2 (20 BYTE)
* FREQFLYERMILAGE NUMBER (9)
* MILAGEBALANCE NUMBER (9)
* MILAGEEXPDATE DATE
FREQUENT_FLYER_PK (PASSENGER_ID)
DBDEVELOPER1.AIRPLANE
P * AIRPLLNEID VARCHAR2 (10 BYTE)
* AIRCRAFTTYPE VARCHAR2 (20 BYTE)
* SEATCAPACITY NUMBER (3)
F * AIRLINECODE VARCHAR2 (5 BYTE)
AIRPLANE_PK (AIRPLLNEID)
PLANELINECODE_FK (AIRLINECODE)
DBDEVELOPER1.RESERVATION
P * RESERVATION_ID NUMBER (5)
F * PASSENGER_ID NUMBER (5)
F * FLIGHT_NUMBER NUMBER (5)
* RESERVATIONDATE DATE
* SEATNUMBER CHAR (4 BYTE)
* FLIGHTCOST NUMBER (7,2)
F * TRAVELCLASSID NUMBER (5)
F * RESERVATIONSTATUSID NUMBER (5)
RESERVATION_PK (RESERVATION_ID)
FLIGHT_NUMBER_FK (FLIGHT_NUMBER)
PASSENGER_ID_FK (PASSENGER_ID)
RESERVATIONSTATUS_FK (RESERVATIONSTATUSID)
TRAVELCLASSID_FK (TRAVELCLASSID)
DBDEVELOPER1.STANDARD
SENGER_ID NUMBER (5)
MODISCOUNTCODE VARCHAR2 (20 BYTE)
DARD_PK (PASSENGER_ID)
DBDEVELOPER1.AIRLINE
P * AIRLINECODE VARCHAR2 (5 BYTE)
* AIRLINENAME VARCHAR2 (25 BYTE)
* HEADQUARTERSADDRESS VARCHAR2 (30 BYTE)
AIRLINE_PK (AIRLINECODE)
DBDEVELOPER1.US_MILITARY
SENGER_ID NUMBER (5)
ILITARYID NUMBER (5)
TARYBRANCH VARCHAR2 (10 BYTE)
TARYDISCOUNTCODE VARCHAR2 (10 BYTE)
ILITARY_PK (PASSENGER_ID)
DBDEVELOPER1.FLIGHT
P * FLIGHT_NUMBER NUMBER (5)
* DESTINATION VARCHAR2 (25 BYTE)
DBDEVELOPER1.TRAVEL_AGENCY
DBDEVELOPE
P * TRAVELCLASSID
* TRAVELCLASS
TRAVEL_CLASS_P
DBDEVELOPER1.RESERVA
P * RESERVATIONSTATUSID NUM
* RESERVATIONSTATUS VAR
RESERVATION_STATUS_PK (RESI


DBDEVELOPER1.US_MILITARY
SENGER_ID NUMBER (5)
ILITARYID NUMBER (5)
TARYBRANCH VARCHAR2 (10 BYTE)
TARYDISCOUNTCODE VARCHAR2 (10 BYTE)
LITARY_PK (PASSENGER_ID)
* AIRLINENAME VARCHAR2 (25 BYTE)
* HEADQUARTERSADDRESS VARCHAR2 (30 BYTE)
AIRLINE_PK (AIRLINECODE)
PASSENGER_ID_FK (PASSENGER_ID)
RESERVATIONSTATUS_FK (RESERVATIONSTATUSID)
TRAVELCLASSID_FK (TRAVELCLASSID)
DBDEVELOPER1.RESERVA
P * RESERVATIONSTATUSID NUM
* RESERVATIONSTATUS VAR
RESERVATION_STATUS_PK (RESI
DBDEVELOPER1.FLIGHT
P * FLIGHT_NUMBER NUMBER (5)
* DESTINATION VARCHAR2 (25 BYTE)
* FLIGHTDATE DATE
* DEPARTURETIME VARCHAR2 (4 BYTE)
* ARRIVALTIME VARCHAR2 (4 BYTE)
* FLIGHTTIME VARCHAR2 (10 BYTE)
F * AIRLINECODE VARCHAR2 (5 BYTE)
FLIGHT_PK (FLIGHT_NUMBER)
DBDEVELOPER1.TRAVEL_AGENCY
SSENGER_ID NUMBER (5)
AVELAGENCYID NUMBER (5)
AVELAGENCYNAME VARCHAR2 (20 BYTE)
ENCYADDRESS VARCHAR2 (75 BYTE)
ENCYPHONE VARCHAR2 (30 BYTE)
OKINGAGENTNAME VARCHAR2 (30 BYTE)
ENCYDISCOUNTCODE VARCHAR2 (20 BYTE)
VEL_AGENCY_PK (PASSENGER_ID)
NCYDISCOUNTCODE_FK (AGENCYDISCOUNTCODE)
DBDEVELOPER1.AGENCY_DISCOUNT
P * AGENCYDISCOUNTCODE VARCHAR2 (10 BYTE)
* AGENCYDISCOUNTAMOUNT NUMBER (5)
AGENCY_DISCOUNT_PK (AGENCYDISCOUNTCODE)
DBDEVELOPER1.FLIGHT_ARRIVAL_AIRPORT
P * FLIGHT_NUMBER NUMBER (5)
P * AIRPORTCODE VARCHAR2 (5 BYTE)
FA_PK (FLIGHT_NUMBER, AIRPORTCODE)
FA_PK (FLIGHT_NUMBER, AIRPORTCODE)
DBDEVELOPER1.LANDING_AIRPORT
* AIRPORTCODE VARCHAR2 (5 BYTE)
* AIRPLANEID VARCHAR2 (10 BYTE)
LA_PK (AIRPORTCODE, AIRPLANEID)
LA_PK (AIRPORTCODE, AIRPLANEID)
DBDEVELOPER1.FLIGHT_DESTINATION_AIRPORT
P * FLIGHT_NUMBER NUMBER (5)
P * AIRPORTCODE VARCHAR2 (5 BYTE)
FD_PK (FLIGHT_NUMBER, AIRPORTCODE)
FD_PK (FLIGHT_NUMBER, AIRPORTCODE)
DBDEVELOPER1.AIRPORT
P * AIRPORTCODE VARCHAR2 (5 BYTE)
* AIRPORTNAME VARCHAR2 (50 BYTE)
* CITY VARCHAR2 (50 BYTE)
* STATE VARCHAR2 (40 BYTE)
AIRPORT_PK (AIRPORTCODE)

INSERTING IN TO TABLE GROUP (PASSENGER, RESERVATION, FLIGHT)

Inserting and displaying Passenger table:

Worksheet | Query Builder

```
--Inserting Records into Passenger Table
insert into Passenger
(Passenger_ID, First, Middle, Last, Gender, Phone, Email,
CreditCardNum, MerchantName, ExpDate, Passenger_Type)
values
(5576,'Kelly','Rhodam','Chen','F','718-555-0999','kchen@gmail.com',
'0000111432332454','Master Card','1217','S');
insert into Passenger
(Passenger_ID, First, Middle, Last, Gender, Phone, Email,
CreditCardNum, MerchantName, ExpDate, Passenger_Type)
values
(5811,'Julie','Keller','William','F','718-555-0123','JWill@gmail.com',
'000013334235453','Visa','0521','F');
```

Script Output | Query Result

SQL | All Rows Fetched: 5 in 0.203 seconds

	PASSENGER_ID	FIRST	MIDDLE	LAST	GENDER	PHONE	EMAIL	CREDITCARDNUM	MERCHANTNAME	EXPDATE	PASSENGER_TYPE
1	5576	Kelly	Rhodam	Chen	F	718-555-0999	kchen@gmail.com	0000111432332454	Master Card	1217	S
2	5811	Julie	Keller	William	F	718-555-0123	JWill@gmail.com	000013334235453	Visa	0521	F
3	1718	John	C	Jays	M	347-555-0999	JJ@gmail.com	123400032332454	American Express	0519	T
4	9207	Kevin	K	Dwyer	M	718-222-0999	kdwy@gmail.com	1234555522224444	American Express	0922	M
5	1033	Kobe	Bean	Bryant	M	216-555-0999	kbryant@gmail.com	242411145555454	Visa	0224	S

Inserting and displaying flight table:

Oracle SQL Developer : C:\Users\Zachery\AppData\Roaming\SQL Developer\QueryTest.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections: AIRLINE, AIRPLANE, AIRPORT, CREDITCARD, FLIGHT, FLIGHT_ARRIVA, FLIGHT_DESTIN, FREQUENT_FLYI, LANDING_AIRPO, PASSENGER, RESERVATION, RESERVATI, PASSENGER, FLIGHT_NUI, RESERVATI, SEATNUMBE, FLIGHTCOS, TRAVELCLA, RESERVATI, RESERVATION_, STANDARD, TRAVEL_AGENC, TRAVEL_CLASS, US_MILITARY, Views, Editioning Views, Indexes, Packages, Procedures, Functions, Queues, Queues Tables, Triggers

QueryTest.sql

SQL Worksheet | History

OracleXE_DBMS_DBDeveloper1_Connection

Worksheet | Query Builder

```
ArrivalTime, FlightTime, AirlineCode)
values
(1055,'California','11-JUL-17','0640','1230','6 Hours','JB');
insert into Flight
(Flight_Number, Destination, FlightDate, DepartureTime,
ArrivalTime, FlightTime, AirlineCode)
values
(0263,'Texas','4-JUL-17','0245','0530',' Hours','JB');
insert into Flight
(Flight_Number, Destination, FlightDate, DepartureTime,
ArrivalTime, FlightTime, AirlineCode)
values
(2324,'Canada','15-AUG-17','1200','0730','7 Hours','UA');
insert into Flight
(Flight_Number, Destination, FlightDate, DepartureTime,
ArrivalTime, FlightTime, AirlineCode)
values
(1359,'Las Vegas','9-JUN-17','0100','0600','5 Hours','AA');
--Verifying Flight Data
select * from Flight;
```

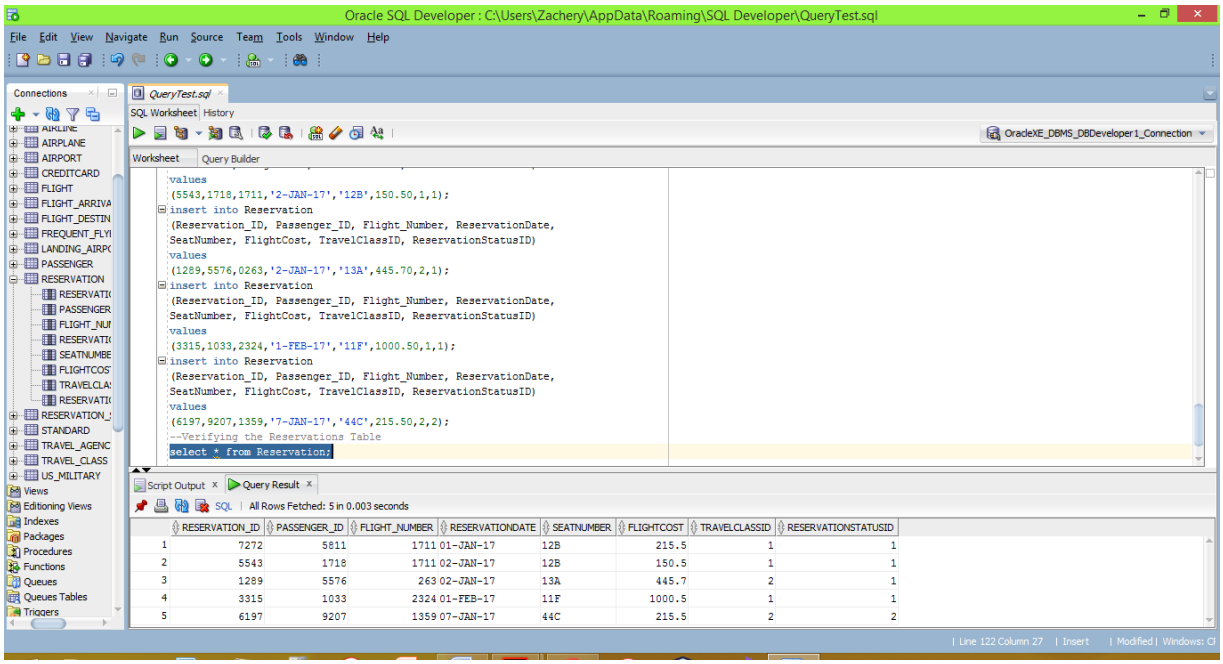
Script Output | Query Result

SQL | All Rows Fetched: 4 in 0.003 seconds

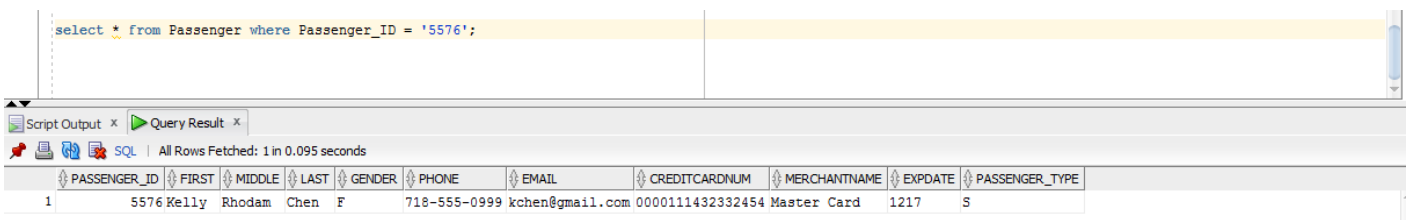
	FLIGHT_NUMBER	DESTINATION	FLIGHTDATE	DEPARTURETIME	ARRIVALTIME	FLIGHTTIME	AIRLINECODE
1	1711	New York	04-JUN-17	0730	1030	4 Hours	AA
2	263	Texas	04-JUL-17	0245	0530	Hours	JB
3	2324	Canada	15-AUG-17	1200	0730	7 Hours	UA
4	1359	Las Vegas	09-JUN-17	0100	0600	5 Hours	AA

Line 74 Column 22 | Insert | Modified | Windows: CI

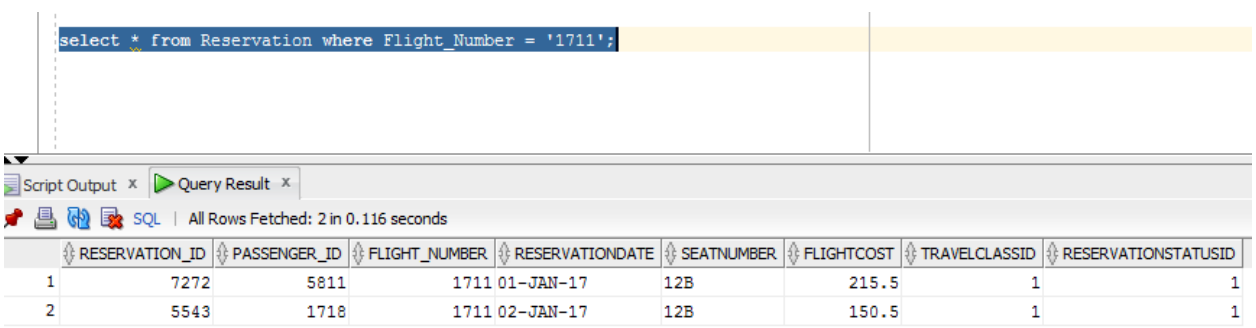
Inserting and displaying reservation table:



Query Based only on primary key for passenger table:



Query for multiple records in one table:



Query on all three tables of group:

```
select First, Last from Passenger where Passenger_ID in (select Passenger_ID from Reservation where Flight_Number = '0263');
```

Script Output | Query Result

SQL | All Rows Fetched: 1 in 0.012 seconds

	FIRST	LAST
1	Kelly	Chen

Updating record in passenger table to change first and last name:

```
update Passenger
set First = 'Zach', Last = 'Channer'
where Passenger_ID = 9207;
```

Script Output | Query Result

Task completed in 0.181 seconds

```
1 row inserted.

1 row updated.
```

Updated Passenger table:

```
select * from Passenger;
```

Script Output | Query Result

SQL | All Rows Fetched: 5 in 0.098 seconds

	PASSENGER_ID	FIRST	MIDDLE	LAST	GENDER	PHONE	EMAIL	CREDITCARDNUM	MERCHANTNAME	EXPDATE	PASSENGER_TYPE
1	5576	Kelly	Rhodam	Chen	F	718-555-0999	kchen@gmail.com	0000111432332454	Master Card	1217	S
2	5811	Julie	Keller	William	F	718-555-0123	JWill@gmail.com	000013334235453	Visa	0521	F
3	1718	John	C	Jays	M	347-555-0999	JJ@gmail.com	123400032332454	American Express	0519	T
4	9207	Zach	K	Channer	M	718-222-0999	kdwy@gmail.com	1234555522224444	American Express	0922	M
5	1033	Kobe	Bean	Bryant	M	216-555-0999	kbryant@gmail.com	242411145555454	Visa	0224	S

Updating record in Reservation to change seat number and travel class:

```
update Reservation
set SeatNumber = '12C', TravelClassID = 1
where Passenger_ID = 1718;
```

Script Output | Query Result

Task completed in 0.192 seconds

```
1 row updated.
```

```
1 row updated.
```

Updated Reservation Table:

```
select * from Reservation;
```

Script Output | Query Result

SQL | All Rows Fetched: 5 in 0.025 seconds

	RESERVATION_ID	PASSENGER_ID	FLIGHT_NUMBER	RESERVATIONDATE	SEATNUMBER	FLIGHTCOST	TRAVELCLASSID	RESERVATIONSTATUSID
1	7272	5811	1711	01-JAN-17	12B	215.5	1	1
2	5543	1718	1711	02-JAN-17	12C	150.5	1	1
3	1289	5576	263	02-JAN-17	13A	445.7	2	1
4	3315	1033	2324	01-FEB-17	11F	1000.5	1	1
5	6197	9207	1359	07-JAN-17	44C	215.5	2	2

Attempting to delete a record from Passenger table:

```
select * from passenger;
```

Script Output | Query Result

SQL | All Rows Fetched: 6 in 0.047 seconds

	PASSENGER_ID	FIRST	MIDDLE	LAST	GENDER	PHONE	EMAIL	CREDITCARDNUM	MERCHANTNAME	EXPDATE	PASSENGER_TYPE
2	5811	Julie	Keller	William	F	718-555-0123	JWill@gmail.com	000013334235453	Visa	0521	F
3	1718	John	C	Jays	M	347-555-0999	JJ@gmail.com	123400032332454	American Express	0519	T
4	9207	Zach	K	Channer	M	718-222-0999	kdwy@gmail.com	1234555522224444	American Express	0922	M
5	1033	Kobe	Bean	Bryant	M	216-555-0999	kbryant@gmail.com	242411145555454	Visa	0224	S
6	9977	Welson	J	Jones	M	718-554-0523	Jonesy@gmail.com	004533334235453	Visa	0521	F

Deletion is successful as no constraints are violated:

```
select * from passenger;

delete from passenger
where Passenger_ID = 9977;
```

Script Output | Query Result | Task completed in 0.40

```
1 row inserted.


1 row deleted.
```

Deletion of record in Reservation table where ReservationID = 7272

```
delete from Reservation
where Reservation_ID = 7272;
```

Script Output | Query Result | Task completed in 0.1 seconds

```
1 row deleted.


1 row deleted.
```

No record found with ReservationID 7272:

```
select * from Reservation;
```

Script Output | Query Result

SQL | All Rows Fetched: 4 in 0.004 seconds

	RESERVATION_ID	PASSENGER_ID	FLIGHT_NUMBER	RESERVATIONDATE	SEATNUMBER	FLIGHTCOST	TRAVELCLASSID	RESERVATIONSTATUSID
1	5543	1718	1711	02-JAN-17	12C	150.5	1	1
2	1289	5576	263	02-JAN-17	13A	445.7	2	1
3	3315	1033	2324	01-FEB-17	11F	1000.5	1	1
4	6197	9207	1359	07-JAN-17	44C	215.5	2	2