

IST 659 Lab Assignment 5

SQL Statements:

```
/*Creating States table*/
CREATE TABLE STATES_table
(
stateAbbr VARCHAR(2) PRIMARY KEY ,
stateName VARCHAR(20) NOT NULL ,a
);

/*Creating CITY table*/
CREATE TABLE CITY_table
(
cityID CHAR(8) PRIMARY KEY ,
cityName VARCHAR(25) NOT NULL ,
stateAbbr VARCHAR(2) FOREIGN KEY(stateAbbr) REFERENCES
STATES_table(stateAbbr) NOT NULL,
);

/*Creating AIRPORT table*/
CREATE TABLE AIRPORT_table
(
airportID CHAR(3) PRIMARY KEY ,
airportName VARCHAR(45) UNIQUE NOT NULL ,
cityID CHAR(8) FOREIGN KEY(cityID) REFERENCES CITY_table(cityID) NOT
NULL,
);
SELECT * FROM AIRPORT_table

/*Creating FLIGHTRoute table*/
CREATE TABLE FLIGHTRoute_table
(
flightNumber VARCHAR(6) PRIMARY KEY ,

departAirport CHAR(3) FOREIGN KEY(departAirport)REFERENCES
AIRPORT_table(airportID),
arriveAirport CHAR(3) FOREIGN KEY(arriveAirport)REFERENCES
AIRPORT_table(airportID),
scheduledDepartTime TIME NOT NULL,
scheduledArrivalTime TIME NOT NULL,
);

/*Creating FLIGHTSTATUS table*/
```

```
CREATE TABLE FLIGHTSTATUS_table
(
statusID CHAR(1) PRIMARY KEY NOT NULL,
CONSTRAINT chk3_statusID CHECK (statusID='O'OR statusID='C' OR
statusID='D'),
description VARCHAR(20) NOT NULL,
);

/*Creating AIRCRAFTSPECS table*/
CREATE TABLE AIRCRAFTSPECS_table
(
aircraftTypeID CHAR(8) PRIMARY KEY NOT NULL,
aircraftVersion VARCHAR(10) NOT NULL,
cabinNumOfSeats INT,
fuelCapacity INT NOT NULL,
);

/*Creating AIRPLANE table*/
CREATE TABLE AIRPLANE_table
(
airplaneID CHAR(8) PRIMARY KEY NOT NULL,
aircraftTypeID CHAR(8) FOREIGN KEY(aircraftTypeID) REFERENCES
AIRCRAFTSPECS_table(aircraftTypeID) NOT NULL,
purchaseDate DATETIME Default '01/02/2014' NOT NULL,
);

/*Creating FLIGHTSCHEDULE table*/
CREATE TABLE FLIGHTSCHEDULE_table
(
flightNumber VARCHAR(6) NOT NULL,
CONSTRAINT FK1_FlightNumber foreign key (flightNumber)REFERENCES
FLIGHTROUTE_table(flightNumber),
flightDate DATE,
CONSTRAINT PK1_xyz PRIMARY KEY (flightDate,flightNumber),
statusID CHAR(1) FOREIGN KEY(statusID) REFERENCES
FLIGHTSTATUS_table(statusID) NOT NULL,
CONSTRAINT ck1_statusID CHECK (statusID='O'OR statusID='C' OR
statusID='D'),
airplaneID CHAR(8) FOREIGN KEY(airplaneID)REFERENCES
AIRPLANE_table(airplaneID) NOT NULL,
delayDepartTime TIME ,
delayArrivalTime TIME,
);
```

```
/*Inserting Values into STATES table*/
INSERT INTO STATES_table
VALUES
('CA', 'California'),
('DC', 'Washington.D.C.'),
('FL', 'Florida'),
('IL', 'Illinois'),
('MA', 'Massachusetts'),
('NY', 'New York'),
('TX', 'Texas')

/*Select all the columns
of all the records
in the STATES table:*/
SELECT * FROM STATES_table

/*Inserting Values into CITY table*/
INSERT INTO CITY_table
VALUES
('C001', 'Los Angeles', 'CA'),
('C002', 'San Francisco', 'CA'),
('C003', 'Washington.D.C.', 'DC'),
('C004', 'Miami', 'FL'),
('C005', 'Orlando', 'FL'),
('C006', 'Chicago', 'IL'),
('C007', 'Boston', 'MA'),
('C008', 'New York', 'NY'),
('C009', 'Syracuse', 'NY')

/*Select all the columns
of all the records
in the CITY table:*/
SELECT * FROM CITY_table

/*Inserting Values into AIRPORT table*/
INSERT INTO AIRPORT_table
VALUES
('BOS', 'Rathod', 'C007'),
('DCA', 'Ronald Reagan National Airport', 'C003'),
('IAD', 'Washington Dulles International Airport', 'C003'),
('JFK', 'John F. Kennedy International Airport', 'C008'),
('LAX', 'Los Angeles International Airport', 'C001'),
('LGA', 'LaGuardia Airport', 'C008'),
('MCO', 'Orlando International Airport', 'C005'),
('MDW', 'Chicago Midway International Airport', 'C006'),
```

```
('MIA','Miami International Airport','C004'),  
('ORD','Chicago O Hare International Airport','C006'),  
('SFO','San Francisco International Airport','C002'),  
('SYR','Syracuse Hancock International Airport','C009')
```

```
/*Select all the columns  
of all the records  
in the AIRPORT table:*/  
SELECT * FROM AIRPORT_table
```

```
/*Inserting Values into FLIGHTRoute table*/  
INSERT INTO FLIGHTRoute_table  
VALUES  
(3310,'SYR','JFK','08:00:00.0000000','09:02:00.0000000'),  
(3312,'JFK','SYR','12:20:00.0000000','13:30:00.0000000'),  
(3426,'LAX','ORD','11:15:00.0000000','15:05:00.0000000'),  
(5063,'BOS','MCO','14:30:00.0000000','18:45:00.0000000')
```

```
/*Select all the columns  
of all the records  
in the FLIGHTRoute table:*/  
SELECT * FROM FLIGHTRoute_table
```

```
/*Inserting Values into FLIGHTSTATUS table*/  
INSERT INTO FLIGHTSTATUS_table  
VALUES  
('C','Cancelled'),  
('D','Delayed'),  
('O','On Time')
```

```
/*Select all the columns  
of all the records  
in the FLIGHTSTATUS table:*/  
SELECT * FROM FLIGHTSTATUS_table
```

```
/*Inserting Values into AIRCRAFTSPECS table*/  
INSERT INTO AIRCRAFTSPECS_table  
VALUES  
('AIR1','A321-200',220,7930),  
('AIR2','737-600ER',132,6875),  
('BOE1','747-400ER',416,63705),  
('BOE2','767-300ER',350,23980),  
('BOE3','737-600ER',132,6875)
```

```
/*Select all the columns  
of all the records  
in the AIRCRAFTSPECS table:*/  
SELECT * FROM AIRCRAFTSPECS_table
```

```
/*Inserting Values into AIRPLANE table*/  
INSERT INTO AIRPLANE_table  
VALUES  
( 'AP098640', 'AIR2', '2013-03-01' ),  
( 'AP239471', 'AIR1', '1900-01-01' ),  
( 'AP309814', 'BOE2', '2012-05-22' ),  
( 'AP629342', 'BOE1', '1900-01-01' ),  
( 'AP872139', 'BOE3', '1900-01-01' ),  
( 'AP998911', 'BOE2', '1900-01-01' )
```

```
/*Select all the columns  
of all the records  
in the AIRPLANE table:*/  
SELECT * FROM AIRPLANE_table
```

```
/*Inserting Values into FLIGHTSCHEDULE table*/  
INSERT INTO FLIGHTSCHEDULE_table  
VALUES  
(3310, '2014-02-10', 'O', 'AP629342', '', ''),  
(3310, '2014-02-11', 'O', 'AP629342', '', ''),  
(3312, '2014-02-10', 'O', 'AP872139', '', ''),  
(3426, '2014-02-12', 'O', 'AP239471', '', ''),  
(5063, '2014-02-  
13', 'D', 'AP309814', '15:40:00.0000000', '20:05:00.0000000')
```

```
/*Select all the columns  
of all the records  
in the FLIGHTSCHEDULE table:*/  
SELECT * FROM FLIGHTSCHEDULE_table
```

SQL STATEMENTS AND OUTPUT SCREENSHOTS:

STATE table:

```
/*Creating States table*/
CREATE TABLE STATES_table
(
    stateAbbr VARCHAR(2) PRIMARY KEY ,
    stateName VARCHAR(20) NOT NULL ,
);

/*Inserting Values into STATES table*/
INSERT INTO STATES_table
VALUES
('CA','California'),
('DC','Washington.D.C. '),
('FL','Florida'),
('IL','Illinois'),
('MA','Massachusetts'),
('NY','New York'),
('TX','Texas')

/*Select all the columns
of all the records|
in the STATES table:*/
SELECT * FROM STATES_table
```

100 % <

Results Messages

	stateAbbr	stateName
1	CA	California
2	DC	Washington.D.C.
3	FL	Florida
4	IL	Illinois
5	MA	Massachusetts
6	NY	New York
7	TX	Texas

CITY table:

```
/*Creating CITY table*/
CREATE TABLE CITY_table
(
    cityID CHAR(8) PRIMARY KEY ,
    cityName VARCHAR(25) NOT NULL ,
    stateAbbr VARCHAR(2) FOREIGN KEY(stateAbbr) REFERENCES STATES_table(stateAbbr) NOT NULL,
);
```

```
/*Inserting Values into CITY table*/
INSERT INTO CITY_table
VALUES
('C001','Los Angeles','CA'),
('C002','San Francisco','CA'),
('C003','Washington.D.C.','DC'),
('C004','Miami','FL'),
('C005','Orlando','FL'),
('C006','Chicago','IL'),
('C007','Boston','MA'),
('C008','New York','NY'),
('C009','Syracuse','NY')

/*Select all the columns
of all the records
in the CITY table:*/
SELECT * FROM CITY_table
```

100 % <

Results Messages

	cityID	cityName	stateAbbr
1	C001	Los Angeles	CA
2	C002	San Francisco	CA
3	C003	Washington.D.C.	DC
4	C004	Miami	FL
5	C005	Orlando	FL
6	C006	Chicago	IL
7	C007	Boston	MA
8	C008	New York	NY
9	C009	Syracuse	NY

AIRPORT table:

```
/*Creating AIRPORT table*/
CREATE TABLE AIRPORT_table
(
    airportID CHAR(3) PRIMARY KEY ,
    airportName VARCHAR(45) UNIQUE NOT NULL ,
    cityID CHAR(8) FOREIGN KEY(cityID) REFERENCES CITY_table(cityID) NOT NULL,
);
```

```
/*Inserting Values into AIRPORT table*/
INSERT INTO AIRPORT_table
VALUES
('BOS', 'Rathod', 'C007'),
('DCA', 'Ronald Reagan National Airport', 'C003'),
('IAD', 'Washington Dulles International Airport', 'C003'),
('JFK', 'John F. Kennedy International Airport', 'C008'),
('LAX', 'Los Angeles International Airport', 'C001'),
('LGA', 'LaGuardia Airport', 'C008'),
('MCO', 'Orlando International Airport', 'C005'),
('MDW', 'Chicago Midway International Airport', 'C006'),
('MIA', 'Miami International Airport', 'C004'),
('ORD', 'Chicago O Hare International Airport', 'C006'),
('SFO', 'San Francisco International Airport', 'C002'),
('SYR', 'Syracuse Hancock International Airport', 'C009')

/*Select all the columns
of all the records
in the AIRPORT table:*/
SELECT * FROM AIRPORT_table
```

100 % <

Results Messages

	airportID	airportName	cityID
1	BOS	Rathod	C007
2	DCA	Ronald Reagan National Airport	C003
3	IAD	Washington Dulles International Airport	C003
4	JFK	John F. Kennedy International Airport	C008
5	LAX	Los Angeles International Airport	C001
6	LGA	LaGuardia Airport	C008
7	MCO	Orlando International Airport	C005
8	MDW	Chicago Midway International Airport	C006
9	MIA	Miami International Airport	C004
10	ORD	Chicago O Hare International Airport	C006
11	SFO	San Francisco International Airport	C002
12	SYR	Syracuse Hancock International Airport	C009

FLIGHT ROUTE table:

```
/*Creating FLIGHTRoute table*/
CREATE TABLE FLIGHTRoute_table
(
    flightNumber VARCHAR(6) PRIMARY KEY ,
    departAirport CHAR(3) FOREIGN KEY(departAirport)REFERENCES AIRPORT_table(airportID),
    arriveAirport CHAR(3) FOREIGN KEY(arriveAirport)REFERENCES AIRPORT_table(airportID),
    scheduledDepartTime TIME NOT NULL,
    scheduledArrivalTime TIME NOT NULL,
);

/*Inserting Values into FLIGHTRoute table*/
INSERT INTO FLIGHTRoute_table
VALUES
(3310, 'SYR', 'JFK', '08:00:00.0000000', '09:02:00.0000000'),
(3312, 'JFK', 'SYR', '12:20:00.0000000', '13:30:00.0000000'),
(3426, 'LAX', 'ORD', '11:15:00.0000000', '15:05:00.0000000'),
(5063, 'BOS', 'MCO', '14:30:00.0000000', '18:45:00.0000000')

/*Select all the columns
of all the records
in the FLIGHTRoute table:*/
SELECT * FROM FLIGHTRoute_table
```

100 % <

Results Messages

	flightNumber	departAirport	arriveAirport	scheduledDepartTime	scheduledArrivalTime
1	3310	SYR	JFK	08:00:00.0000000	09:02:00.0000000
2	3312	JFK	SYR	12:20:00.0000000	13:30:00.0000000
3	3426	LAX	ORD	11:15:00.0000000	15:05:00.0000000
4	5063	BOS	MCO	14:30:00.0000000	18:45:00.0000000

FLIGHT STATUS table:

```
/*Creating FLIGHTSTATUS table*/
CREATE TABLE FLIGHTSTATUS_table
(
    statusID CHAR(1) PRIMARY KEY NOT NULL,
    CONSTRAINT chk3_statusID CHECK (statusID='O' OR statusID='C' OR statusID='D'),
    description VARCHAR(20) NOT NULL,
);
```

```
/*Inserting Values into FLIGHTSTATUS table*/
INSERT INTO FLIGHTSTATUS_table
VALUES
('C', 'Cancelled'),
('D', 'Delayed'),
('O', 'On Time')

/*Select all the columns
of all the records
in the FLIGHTSTATUS table:*/
SELECT * FROM FLIGHTSTATUS_table
```

100 % <

Results Messages

	statusID	description
1	C	Cancelled
2	D	Delayed
3	O	On Time

AIRCRAFTE SPECS table:

```
/*Creating AIRCRAFTSPECS table*/
CREATE TABLE AIRCRAFTSPECS_table
(
aircraftTypeID CHAR(8) PRIMARY KEY NOT NULL,
aircraftVersion VARCHAR(10) NOT NULL,
cabinNumOfSeats INT,
fuelCapacity INT NOT NULL,
);
```

```
/*Inserting Values into AIRCRAFTSPECS table*/
INSERT INTO AIRCRAFTSPECS_table
VALUES
('AIR1', 'A321-200', 220, 7930),
('AIR2', '737-600ER', 132, 6875),
('BOE1', '747-400ER', 416, 63705),
('BOE2', '767-300ER', 350, 23980),
('BOE3', '737-600ER', 132, 6875)

/*Select all the columns
of all the records
in the AIRCRAFTSPECS table:*/
SELECT * FROM AIRCRAFTSPECS_table
```

100 % <

Results Messages

	aircraftTypeID	aircraftVersion	cabinNumOfSeats	fuelCapacity
1	AIR1	A321-200	220	7930
2	AIR2	737-600ER	132	6875
3	BOE1	747-400ER	416	63705
4	BOE2	767-300ER	350	23980
5	BOE3	737-600ER	132	6875

AIRPLANE table:

```
/*Creating AIRPLANE table*/
CREATE TABLE AIRPLANE_table
(
  airplaneID CHAR(8) PRIMARY KEY NOT NULL,
  aircraftTypeID CHAR(8) FOREIGN KEY(aircraftTypeID) REFERENCES AIRCRAFTSPECS_table(aircraftTypeID) NOT NULL,
  purchaseDate DATETIME Default '01/02/2014' NOT NULL,
);
```

```
/*Inserting Values into AIRPLANE table*/
INSERT INTO AIRPLANE_table
VALUES
('AP098640','AIR2','2013-03-01'),
('AP239471','AIR1','1900-01-01'),
('AP309814','BOE2','2012-05-22'),
('AP629342','BOE1','1900-01-01'),
('AP872139','BOE3','1900-01-01'),
('AP998911','BOE2','1900-01-01')

/*Select all the columns
of all the records
in the AIRPLANE table:*/
SELECT * FROM AIRPLANE_table
```

100 % <

Results Messages

	airplaneID	aircraftTypeID	purchaseDate
1	AP098640	AIR2	2013-03-01 00:00:00.000
2	AP239471	AIR1	1900-01-01 00:00:00.000
3	AP309814	BOE2	2012-05-22 00:00:00.000
4	AP629342	BOE1	1900-01-01 00:00:00.000
5	AP872139	BOE3	1900-01-01 00:00:00.000
6	AP998911	BOE2	1900-01-01 00:00:00.000

FLIGHT SCHEDULE table:

```
/*Creating FLIGHTSCHEDULE table*/
CREATE TABLE FLIGHTSCHEDULE_table
(
flightNumber VARCHAR(6) NOT NULL,
CONSTRAINT FK1_FlightNumber foreign key (flightNumber)REFERENCES FLIGHTRoute_table(flightNumber),
flightDate DATE,
CONSTRAINT PK1_xyz PRIMARY KEY (flightDate,flightNumber),
statusID CHAR(1) FOREIGN KEY(statusID) REFERENCES FLIGHTSTATUS_table(statusID) NOT NULL,
CONSTRAINT ck1_statusID CHECK (statusID='O'OR statusID='C' OR statusID='D'),
airplaneID CHAR(8) FOREIGN KEY(airplaneID)REFERENCES AIRPLANE_table(airplaneID) NOT NULL,
delayDepartTime TIME ,
delayArrivalTime TIME,
);
```

```
/*Inserting Values into FLIGHTSCHEDULE table*/
INSERT INTO FLIGHTSCHEDULE_table
VALUES
(3310, '2014-02-10', 'O', 'AP629342', '', ''),
(3310, '2014-02-11', 'O', 'AP629342', '', ''),
(3312, '2014-02-10', 'O', 'AP872139', '', ''),
(3426, '2014-02-12', 'O', 'AP239471', '', ''),
(5063, '2014-02-13', 'D', 'AP309814', '15:40:00.0000000', '20:05:00.0000000')

/*Select all the columns|
of all the records
in the FLIGHTSCHEDULE table:*/
SELECT * FROM FLIGHTSCHEDULE_table
```

100 %

Results Messages

	flightNumber	flightDate	statusID	airplaneID	delayDepartTime	delayArrivalTime
1	3310	2014-02-10	O	AP629342	00:00:00.0000000	00:00:00.0000000
2	3312	2014-02-10	O	AP872139	00:00:00.0000000	00:00:00.0000000
3	3310	2014-02-11	O	AP629342	00:00:00.0000000	00:00:00.0000000
4	3426	2014-02-12	O	AP239471	00:00:00.0000000	00:00:00.0000000
5	5063	2014-02-13	D	AP309814	15:40:00.0000000	20:05:00.0000000

Queries:

1. Find all aircrafts whose fuel capacity is less than 63705. Show aircraft id, cabin number of seats and fuel capacity.

```
/*aircrafts whose fuel capacity is less than 63705 form AIRCRAFTSPECS
TABLE*/
SELECT      aircraftTypeID,      cabinNumOfSeats, fuelCapacity      FROM
AIRCRAFTSPECS_table
WHERE fuelCapacity < 63705;
```

```
/*aircrafts whose fuel capacity is less than 63705 form AIRCRAFTSPECS TABLE*/  
SELECT aircraftTypeID, cabinNumOfSeats, fuelCapacity FROM AIRCRAFTSPECS_table --selecting  
WHERE fuelCapacity < 63705;
```

100 %

Results Messages

	aircraftTypeID	cabinNumOfSeats	fuelCapacity
1	AIR1	220	7930
2	AIR2	132	6875
3	BOE2	350	23980
4	BOE3	132	6875

2. Find all airplanes which were on time or delayed. Show only airplane ID, flight date and statusID.

```
/*all airplanes which were on time or delayed from FLIGHTSCHEDULE table*/  
SELECT airplaneID, flightDate, statusID from FLIGHTSCHEDULE_table  
WHERE statusID='O' or statusID='D';
```

```
/*all airplanes which were on time or delayed from FLIGHTSCHEDULE table*/  
SELECT airplaneID, flightDate, statusID from FLIGHTSCHEDULE_table  
WHERE statusID='O' or statusID='D';
```

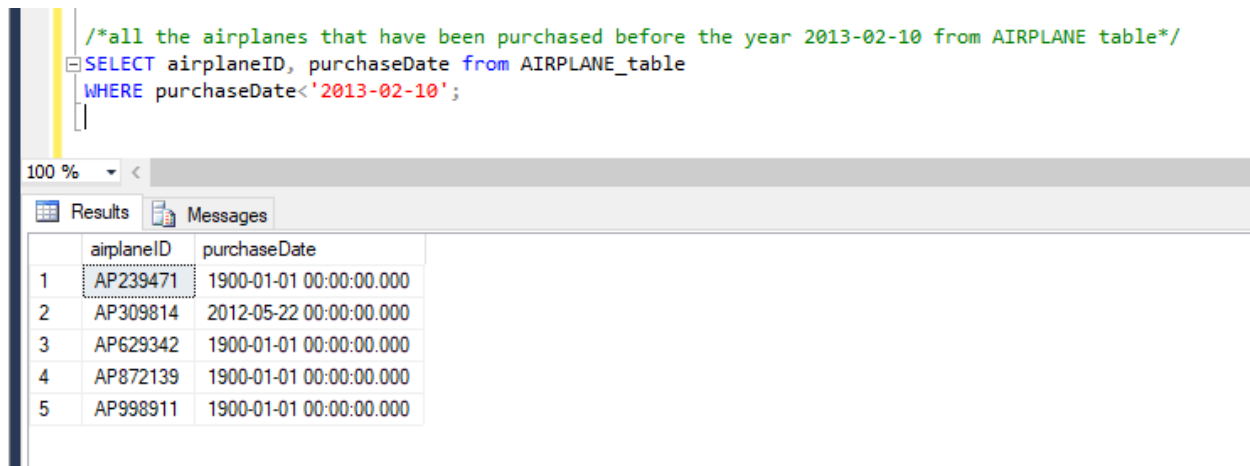
100 %

Results Messages

	airplaneID	flightDate	statusID
1	AP629342	2014-02-10	O
2	AP872139	2014-02-10	O
3	AP629342	2014-02-11	O
4	AP239471	2014-02-12	O
5	AP309814	2014-02-13	D

3. Find all the airplanes that have been purchased before the year 2013-02-10. Show airplane id and the purchase Date.

```
/*all the airplanes that have been purchased before the year 2013-02-10  
from AIRPLANE table*/  
SELECT airplaneID, purchaseDate from AIRPLANE_table  
WHERE purchaseDate<'2013-02-10';
```



The screenshot shows a SQL query editor with a query window and a results window. The query window contains the following SQL code:

```
/*all the airplanes that have been purchased before the year 2013-02-10 from AIRPLANE table*/  
SELECT airplaneID, purchaseDate from AIRPLANE_table  
WHERE purchaseDate<'2013-02-10';
```

The results window shows the following data:

	airplaneID	purchaseDate
1	AP239471	1900-01-01 00:00:00.000
2	AP309814	2012-05-22 00:00:00.000
3	AP629342	1900-01-01 00:00:00.000
4	AP872139	1900-01-01 00:00:00.000
5	AP998911	1900-01-01 00:00:00.000