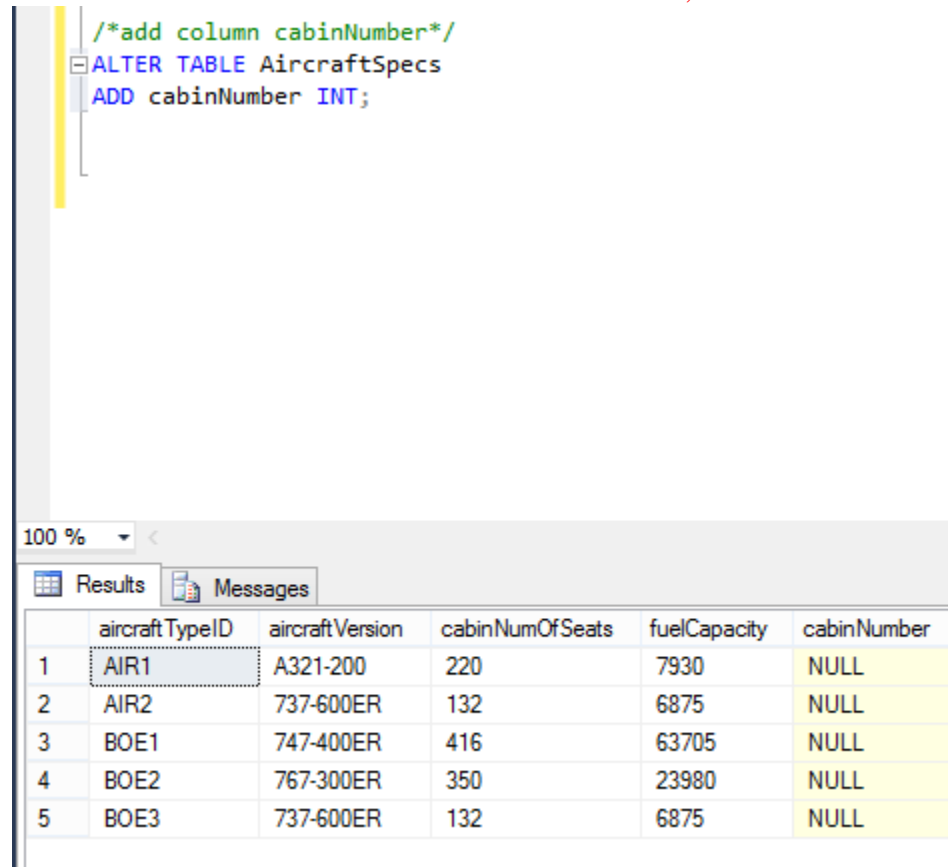**Name:** _____Pan Chen_____

Lab 6 Exercise   due on Sunday, 12:00 NOON

Problem Description (the same as lab 4)

1. Alter table "AircraftSpecs" to add one more columns for number of cabins. Name the column as "cabinNumber". The column data type is INT, and it can be null.
   ALTER TABLE AircraftSpecs
   ADD cabinNumber INT NOT NULL;

```
/*add column cabinNumber*/
ALTER TABLE AircraftSpecs
ADD cabinNumber INT;
```

100 %

Results   Messages

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

2. Update information in table "AircraftSpecs". For planes whose "fuelCapacity" is 63705, change their "fuelCapacity" to be 73705.
   UPDATE AircraftSpecs
   SET fuelCapacity =73705
   WHERE fuelCapacity =63705;

```
/*Update AircraftSpecs data*/
UPDATE AircraftSpecs
SET fuelCapacity =73705
WHERE fuelCapacity =63705;
```

100 %

Results | Messages

	aircraftTypeID	aircraftVersion	cabinNumOfSeats	fuelCapacity	cabinNumber
1	AIR1	A321-200	220	7930	NULL
2	AIR2	737-600ER	132	6875	NULL
3	BOE1	747-400ER	416	73705	NULL
4	BOE2	767-300ER	350	23980	NULL
5	BOE3	737-600ER	132	6875	NULL

3. Simple data questions
   a) Find out all flight schedule information of flight "3310". Make sure to show all the fields.
      SELECT * FROM flightSchedule
      WHERE flightNumber = 3310;

```
/*view all the FlightSchedule info of flight 3310*/
SELECT * FROM FlightSchedule
WHERE flightNumber = 3310;
```

100 %

Results | Messages

	flightNumber	flightDATE	statusID	airplaneID	delayDepartTime	delayArrivalTime
1	3310	2014-02-10	O	AP629342	NULL	NULL
2	3310	2014-02-11	O	AP629342	NULL	NULL

   b) Find all flights departing from LAX airport. Show flight number, arrival airport, and depart time.
      SELECT flightNumber, arriveAirport, scheduledDepartTime
      FROM flightRoute
      WHERE departAirport LIKE 'LAX';

```
/*b)    Find all flights departing from LAX airport. Show flight number, arrival airport,
and depart time.*/
SELECT flightNumber, arriveAirport, scheduledDepartTime
FROM flightRoute
WHERE departAirport LIKE 'LAX';
```

	flightNumber	arriveAirport	scheduledDepartTime
1	3426	ORD	11:15:00.0000000

c) Find all planes purchased in March 2013. Show airplane ID and purchase date only.
   SELECT airplaneID, purchaseDate
   FROM Airplane
   WHERE purchaseDate LIKE '2013-03%';

```
/*Find all planes purchased in March 2013. Show airplane ID and purchase date only.*/
SELECT airplaneID, purchaseDate
FROM Airplane
WHERE purchaseDate LIKE '2013-03%';
```

	airplaneID	purchaseDate
1	AP098640	2013-03-01

d) Find all flights that are of status "Delay". Show flight number, flight date, and delay
   arrive time only.
   SELECT flightNumber, flightDATE, delayArrivalTime
   FROM FlightSchedule
   WHERE statusID='D';

```
/*  Find all flights that are of status "Delay".
 Show flight number, flight date, and delay arrive time only.*/
SELECT flightNumber, flightDATE, delayArrivalTime
 FROM FlightSchedule
 WHERE statusID='D';
```

100 %

Results   Messages

	flightNumber	flightDATE	delayArrivalTime
1	5063	2014-02-13	20:05:00.0000000

e) Find all aircraft types whose number of seats is less than 250. Show aircraft version only.

SELECT aircraftVersion
FROM AircraftSpecs
WHERE cabinNumOfSeats < 250;

```
/*Find all aircraft types whose number of seats is less than 250.
 Show aircraft version only.*/
SELECT aircraftVersion
 FROM AircraftSpecs
 WHERE cabinNumOfSeats < 250;
```

100 %

Results   Messages

	aircraftVersion
1	A321-200
2	737-600ER
3	737-600ER

4. Use aggregate functions to answer data questions
   a) Count the number of flights departing each day. Show the date and the number of flights.

SELECT flightDate, COUNT(flightDate) as totalFlights
FROM FlightSchedule
GROUP BY flightDate;

```
/*Count the number of flights departing each day. Show the date and the number of flights. */
SELECT flightDate, COUNT(flightDate) as totalFlights
FROM FlightSchedule
GROUP BY flightDate;
```

100 %

Results | **Messages**

	flightDate	totalFlights
1	2014-02-10	2
2	2014-02-11	1
3	2014-02-12	1
4	2014-02-13	1

b) Sort AircraftSpecs table by fuel capacity in ascending order. Show the result with aircraft version and fuel capacity.
SELECT aircraftVersion, fuelCapacity
FROM AircraftSpecs
ORDER BY fuelCapacity ASC;

```
/*Sort AircraftSpecs table by fuel capacity in ascending order.
  Show the result with aircraft version and fuel capacity. */
SELECT aircraftVersion, fuelCapacity
FROM AircraftSpecs
ORDER BY fuelCapacity ASC;
```

100 %

Results | **Messages**

	aircraftVersion	fuelCapacity
1	737-600ER	6875
2	737-600ER	6875
3	A321-200	7930
4	767-300ER	23980
5	747-400ER	73705

c) Calculate the average, min, and max value of cabin seats numbers for aircraft spec. Show average seat numbers, min seat numbers, and max seat numbers.
SELECT AVG (cabinNumOfSeats) as AvgNumOfSeats, MIN(cabinNumOfSeats) as MinNumOfSeats,

Max (cabinNumOfSeats) as MaxNumOfSeats
FROM AircraftSpecs;

```
/* Calculate the average, min, and max value of cabin seats numbers for aircraft spec.
   Show average seat numbers, min seat numbers, and max seat numbers.*/
SELECT AVG (cabinNumOfSeats) as AvgNumOfSeats, MIN(cabinNumOfSeats) as MinNumOfSeats,
   Max (cabinNumOfSeats) as MaxNumOfSeats
   FROM AircraftSpecs;
```

100 %

Results | Messages

	AVGNumOfSeats	MinNumOfSeats	MaxNumOfSeats
1	250	132	416

d) Show the average fuel capacity of airplanes from Boeing and Airbus separately.
SELECT AVG (fuelCapacity) as BOEAvgFuelCapacity
FROM AircraftSpecs
WHERE aircraftTypeID LIKE 'BOE%'
SELECT AVG (fuelCapacity) as AIRAvgFuelCapacity
FROM AircraftSpecs
WHERE aircraftTypeID LIKE 'AIR%'

```
/*Show the average fuel capacity of airplanes from Boeing and Airbus separately. */
SELECT AVG (fuelCapacity) as BOEAvgFuelCapacity
FROM AircraftSpecs
where aircraftTypeID LIKE 'BOE%'
SELECT AVG (fuelCapacity) as AIRAvgFuelCapacity
FROM AircraftSpecs
where aircraftTypeID LIKE 'AIR%'
```

100 %

Results | Messages

	BOEAvgFuelCapacity
1	34853

	AIRAvgFuelCapacity
1	7402

5. Open ended Questions:

1. From the Flight Schedule Table, show how many flight are delayed and how many
   flights are on time
   SELECT statusID, COUNT(statusID) as NoFlights

FROM FlightSchedule
GROUP BY statusID;

```
/*Show how many flight are delayed and how many flights are on time*/
SELECT statusID, COUNT(statusID) as NoFlights
FROM FlightSchedule
GROUP BY statusID;
```

100 %

Results   Messages

	statusID	NoFlights
1	D	1
2	O	4

2. From the Flight Schedule Table, show how many flight are on time from different flights
SELECT flightNumber, COUNT(statusID) as NoFlightsOnTime
FROM FlightSchedule
WHERE statusID = 'O'
GROUP BY flightNumber;

```
/*Show how many flight are on time from different flights*/
SELECT flightNumber, COUNT(statusID) as NoFlightsOnTime
FROM FlightSchedule
WHERE statusID = 'O'
GROUP BY flightNumber;
```

100 %

Results   Messages

	flightNumber	NoFlightsOnTime
1	3310	2
2	3312	1
3	3426	1

Submission instruction

Please submit your lab report in **one PDF** file to BlackBoard. Name your file in this format
"IST659-Lab6-Lastname-Firstname.pdf".

After each question, copy and paste your SQL statement, followed by the screenshot to show that
your SQL statement has been successfully executed. Remember to add comments to your SQL
statements to explain the purpose of the code blocks.