**Lab 8 Exercise *DUE ON SUNDAY NOON***

In labs 5 and 6, we have modeled a database for Syracuse Airways to track planes and flights. In this lab we will be taking a completed database schema and executing transactions against it as well as create and query views which will make it easier for an analyst to use the system.



**Recall (***from Labs 5 and 6***):**

*As the model shows: the company has many airplanes which are of different specifications (e.g. Boeing 777, Airbus A320, and so on). Each aircraft specification has the same attributes, such as aircraftVersion, cabin number of seats and fuel capacity. The airplanes are assigned to diverse flight routes. Each flight route has a unique flight number, departs and arrives at particular airport at different cities in scheduled time. Every day the airplanes work according to their flight routes, but the flight schedule may be affected by flight statuses (on time, delay, or cancelled).*

**INSTRUCTION**

Execute the file Lab8\_setup.sql. This will create the schema and populate the tables with values. The rest of the lab will require you to execute transactions, create a view, and query.

**QUESTIONS** (*Please be aware that the tables in this lab all end in “****…\_t****”*)

Transactions

Directions:

For each transaction question, write a **separate SQL transaction statement** (*with XACT\_ABORT ON*). After each transaction, submit the following in your solution:

* SQL script which executes the transaction
* SQL Script(s) which select the new transactions from the effected tables.
  + i.e. if you added a new airplane to Airplane\_t, then:
    - *SELECT \* FROM Airplane\_t WHERE airplane\_id = …*
* Screenshots of the results from the SELECT queries

Questions:

1. Two new flights are scheduled to leave from *BOS* to *ORD* airports.
   * The first flight (*flightId 1111*) will be on airplane *AP098640* departing on-time at 2018-11-05 12:00:00 and arriving on-time at 2018-11-05 14:30:00.
   * The second flight (*flightId 1112*) will be on airplane *AP432379* departing on-time at 2018-11-05 22:00:00 and arriving on-time at 2018-11-06 00:30:00.
2. Due to forecasted inclement weather, the new flights’ **statuses** have changed.
   * The earlier new flight from *BOS* to *ORD (flightId 1111)* has been ***delayed*** by 10 hours.
   * The later new flight from *BOS* to *ORD (flightId 1112)* hasbeen ***canceled***.
   * **NOTE:** DO NOT commit this transaction *(i.e. COMMIT TRANSACTION …;)*
3. The weather has improved and the two flight are back to the original statuses (*question 1*).
   * ROLLBACK the last transaction (2)
   * ***NOTE****: If you committed the transaction in (2), you’ll be unable to Rollback.* Revert instead using a new transaction with update statements.
4. There is a new flightRoute between Portland, OR (*cityID C010*) and Seattle, WA (*cityID C011*).
   * The Portland airport is airportId *PDX* and is named *Portland International Airport*.
   * The Seattle airport is airportId *SEA* and is named *Seattle–Tacoma International Airport*.
   * The flight from PDX to SEA *(flightID 1003*) is scheduled to depart at *08:00:00 and arrive at 09:15:00.*
   * The flight from SEA to PDX (*flightID 1004*) is scheduled to depart at *14:00:00 and arrive at 15:15:00*.
   * ***NOTE:*** *No flights have been scheduled yet for this flightRoute.*

Views

Directions:

Create a view based on the criteria in question (1). Take a screenshot of the SQL query which generated the view and take a screenshot of the result table when you **SELECT \* FROM *view***.

1. An operations analyst is interested in understanding flight capacity at each airport. In order to do so, they need to continually monitor how many departing and arriving flights occur at each airport.

To assist the analyst, create a **VIEW** called *Airport\_Capacity* with the following columns:

* *airportId, airportName, cityId, cityName, stateAbbr, StateName*
* View contains the total number of departing and arriving flights for each airport
* The view **excludes** airports which have no departing and arriving flights

1. Query the *Airport\_Capacity* view and return the distinct states (*DISTINCT stateAbbr*) where the number of departures is greater than or equal to the number of arrivals.

**GRADING CRITERIA:**

* Attempt every question -1 for each un-attempted question
* -0.25 for each wrong query/result
* -0.25 for each missing screenshots of queries/ results