IST 659 LAB Assignment NO -8

1) Two new flights are scheduled to leave from *BOS* to *ORD* airports.

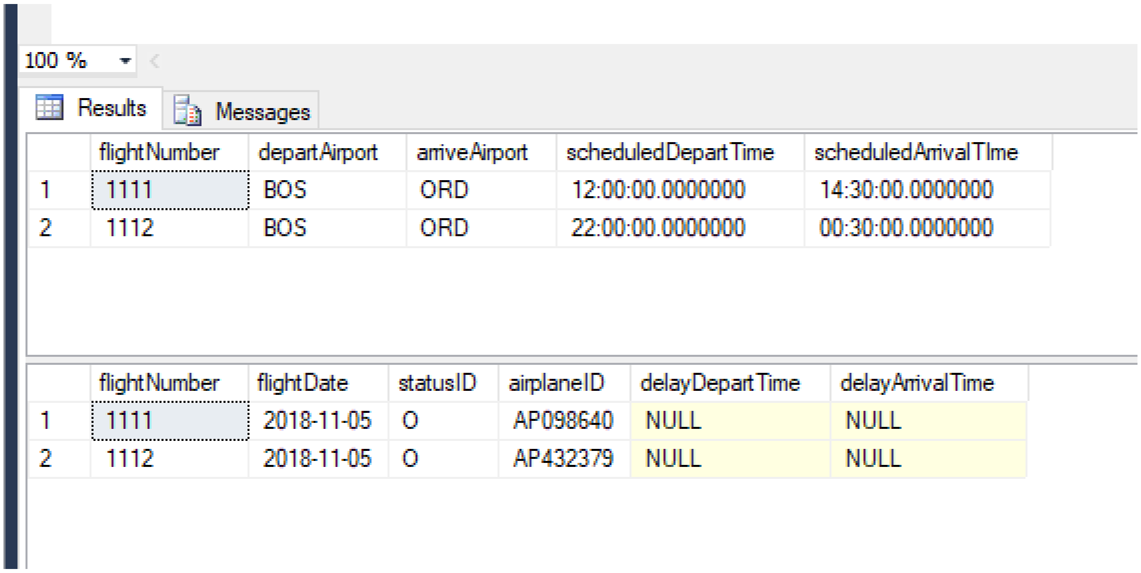
- The first flight (*flightId 1111*) will be on airplane *AP098640* departing on-time at 2018-11-05 12:00:00 and arriving on-time at 2018-11-05 14:30:00.

- 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.

Query:

```
set xact_abort on;
begin transaction addtrans1
insert into
FlightRoute_t(flightNumber,departAirport,arriveAirport,scheduledDepartTime,scheduledArrivalT
Ime)
values(1111,'BOS','ORD','12:00:00','14:30:00'),(1112,'BOS','ORD', '22:00:00','00:30:00')
insert into
FlightSchedule_t(flightNumber,flightDate,statusID,airplaneID,delayDepartTime,delayArrivalTime
)
values(1111,'2018-11-05','O','AP098640',NULL,NULL),(1112,'2018-11-
05','O','AP432379',NULL,NULL)

commit transaction addtrans1;

SELECT * FROM FlightRoute_t where flightNumber='1111' or flightNumber='1112'
SELECT * FROM FlightSchedule_t where flightNumber='1111' or flightNumber='1112'
```

Result:



	flightNumber	departAirport	arriveAirport	scheduledDepartTime	scheduledArrivalTIme
1	1111	BOS	ORD	12:00:00.0000000	14:30:00.0000000
2	1112	BOS	ORD	22:00:00.0000000	00:30:00.0000000

	flightNumber	flightDate	statusID	airplaneID	delayDepartTime	delayArrivalTime
1	1111	2018-11-05	O	AP098640	NULL	NULL
2	1112	2018-11-05	O	AP432379	NULL	NULL

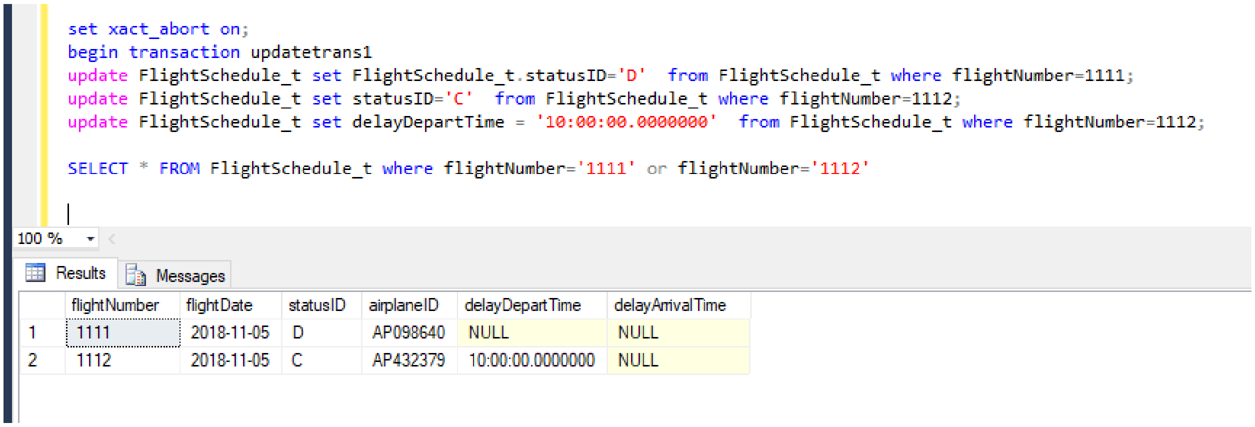
2) Due to forecasted inclement weather, the new flights' **statuses** have changed.

- 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)* has been ***canceled.***
- **NOTE:** DO NOT commit this transaction *(i.e. COMMIT TRANSACTION …;.*

Query:

```
set xact_abort on;
begin transaction updatetrans1
update FlightSchedule_t set FlightSchedule_t.statusID='D'  from FlightSchedule_t where
flightNumber=1111;
update FlightSchedule_t set statusID='C'  from FlightSchedule_t where flightNumber=1112;
update FlightSchedule_t set delayDepartTime = '10:00:00.0000000'  from FlightSchedule_t where
flightNumber=1112;

SELECT * FROM FlightSchedule_t where flightNumber='1111' or flightNumber='1112'
```

Result:



```
set xact_abort on;
begin transaction updatetrans1
update FlightSchedule_t set FlightSchedule_t.statusID='D'  from FlightSchedule_t where flightNumber=1111;
update FlightSchedule_t set statusID='C'  from FlightSchedule_t where flightNumber=1112;
update FlightSchedule_t set delayDepartTime = '10:00:00.0000000'  from FlightSchedule_t where flightNumber=1112;

SELECT * FROM FlightSchedule_t where flightNumber='1111' or flightNumber='1112'
```

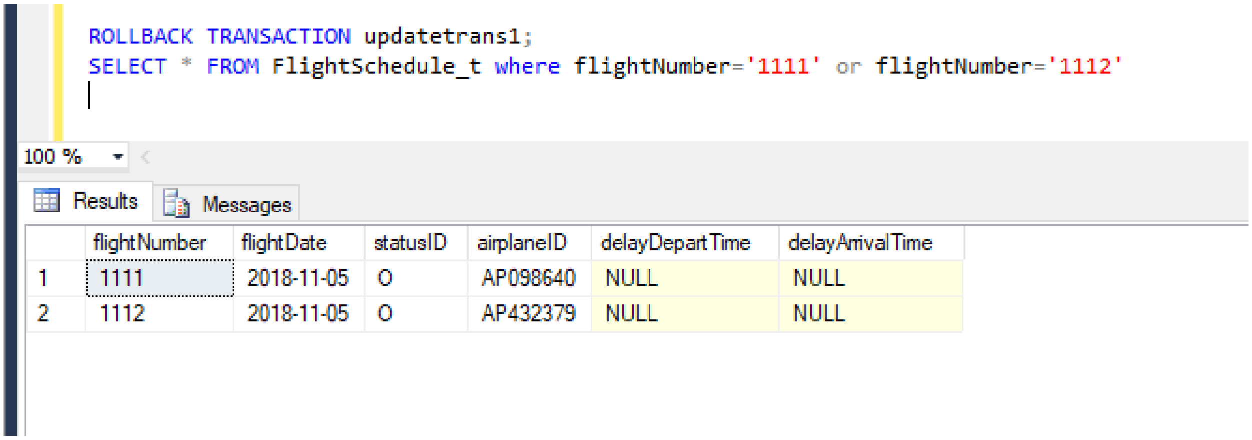
	flightNumber	flightDate	statusID	airplaneID	delayDepartTime	delayArrivalTime
1	1111	2018-11-05	D	AP098640	NULL	NULL
2	1112	2018-11-05	C	AP432379	10:00:00.0000000	NULL

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.

Query:

```
ROLLBACK TRANSACTION updatetrans1;
SELECT * FROM FlightSchedule_t where flightNumber='1111' or flightNumber='1112'
```

Result:



```
ROLLBACK TRANSACTION updatetrans1;
SELECT * FROM FlightSchedule_t where flightNumber='1111' or flightNumber='1112'
```

	flightNumber	flightDate	statusID	airplaneID	delayDepartTime	delayArrivalTime
1	1111	2018-11-05	O	AP098640	NULL	NULL
2	1112	2018-11-05	O	AP432379	NULL	NULL

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.*

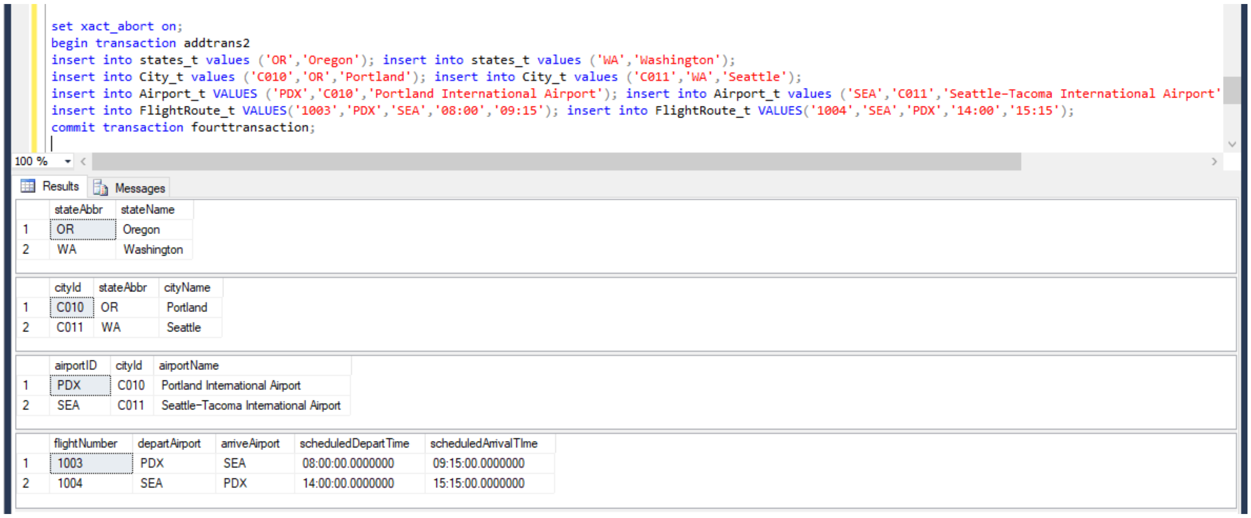
   - The flight from SEA to PDX (*flightID 1004*) is scheduled to depart at *14:00:00 and arrive at 15:15:00.*

   - ***NOTE:*** *No flights have been scheduled yet for this flightRoute.*

Query:

```
set xact_abort on;
begin transaction addtrans2
insert into states_t values ('OR','Oregon'); insert into states_t values ('WA','Washington');
insert into City_t values ('C010','OR','Portland'); insert into City_t values ('C011','WA','Seattle');
insert into Airport_t VALUES ('PDX','C010','Portland International Airport'); insert into Airport_t
values ('SEA','C011','Seattle-Tacoma International Airport');
insert into FlightRoute_t VALUES('1003','PDX','SEA','08:00','09:15'); insert into FlightRoute_t
VALUES('1004','SEA','PDX','14:00','15:15');
commit transaction fourttransaction;

select * from states_t where stateAbbr in ('OR', 'WA')
select * from City_t where cityId = 'C010' or cityId = 'C011'
select * from Airport_t where airportID = 'PDX' or airportID = 'SEA'
select * from FlightRoute_t where flightNumber = '1003' or flightNumber = '1004'
```

Result:



```
set xact_abort on;
begin transaction addtrans2
insert into states_t values ('OR','Oregon'); insert into states_t values ('WA','Washington');
insert into City_t values ('C010','OR','Portland'); insert into City_t values ('C011','WA','Seattle');
insert into Airport_t VALUES ('PDX','C010','Portland International Airport'); insert into Airport_t values ('SEA','C011','Seattle-Tacoma International Airport'
insert into FlightRoute_t VALUES('1003','PDX','SEA','08:00','09:15'); insert into FlightRoute_t VALUES('1004','SEA','PDX','14:00','15:15');
commit transaction fourttransaction;
```

	stateAbbr	stateName
1	OR	Oregon
2	WA	Washington

	cityId	stateAbbr	cityName
1	C010	OR	Portland
2	C011	WA	Seattle

	airportID	cityId	airportName
1	PDX	C010	Portland International Airport
2	SEA	C011	Seattle-Tacoma International Airport

	flightNumber	departAirport	arriveAirport	scheduledDepartTime	scheduledArrivalTIme
1	1003	PDX	SEA	08:00:00.0000000	09:15:00.0000000
2	1004	SEA	PDX	14:00:00.0000000	15:15:00.0000000

5. 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*

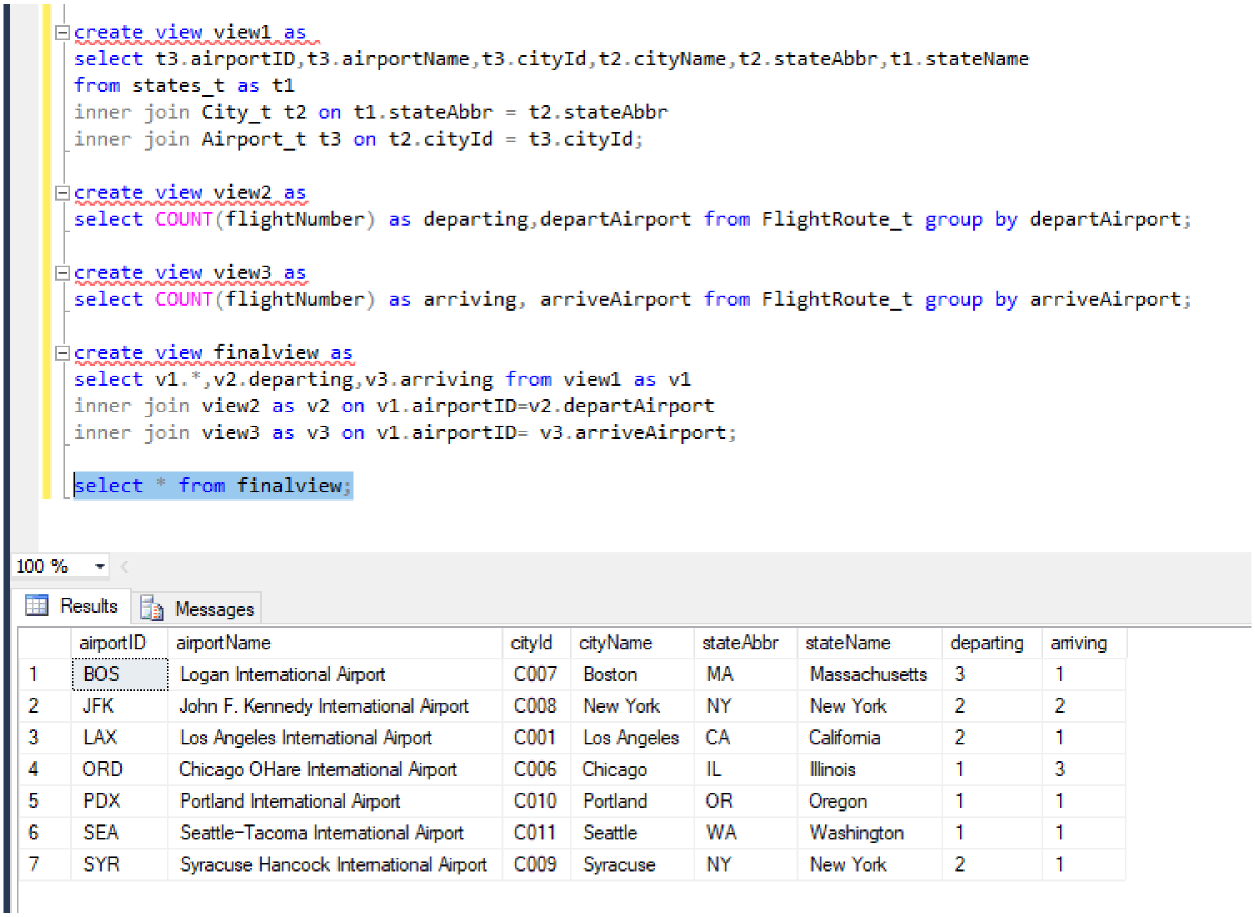
- View contains the total number of departing and arriving flights for each airport

- The view **excludes** airports which have no departing and arriving flights

Query:

```
create view view1 as
select t3.airportID,t3.airportName,t3.cityId,t2.cityName,t2.stateAbbr,t1.stateName
from states_t as t1
inner join City_t t2 on t1.stateAbbr = t2.stateAbbr
inner join Airport_t t3 on t2.cityId = t3.cityId;

create view view2 as
select COUNT(flightNumber) as departing,departAirport from FlightRoute_t group by
departAirport;

create view view3 as
select COUNT(flightNumber) as arriving, arriveAirport from FlightRoute_t group by
arriveAirport;

create view finalview as
select v1.*,v2.departing,v3.arriving from view1 as v1
inner join view2 as v2 on v1.airportID=v2.departAirport
inner join view3 as v3 on v1.airportID= v3.arriveAirport;

select * from finalview;
```

Result:



```
create view view1 as
select t3.airportID,t3.airportName,t3.cityId,t2.cityName,t2.stateAbbr,t1.stateName
from states_t as t1
inner join City_t t2 on t1.stateAbbr = t2.stateAbbr
inner join Airport_t t3 on t2.cityId = t3.cityId;

create view view2 as
select COUNT(flightNumber) as departing,departAirport from FlightRoute_t group by departAirport;

create view view3 as
select COUNT(flightNumber) as arriving, arriveAirport from FlightRoute_t group by arriveAirport;

create view finalview as
select v1.*,v2.departing,v3.arriving from view1 as v1
inner join view2 as v2 on v1.airportID=v2.departAirport
inner join view3 as v3 on v1.airportID= v3.arriveAirport;

select * from finalview;
```

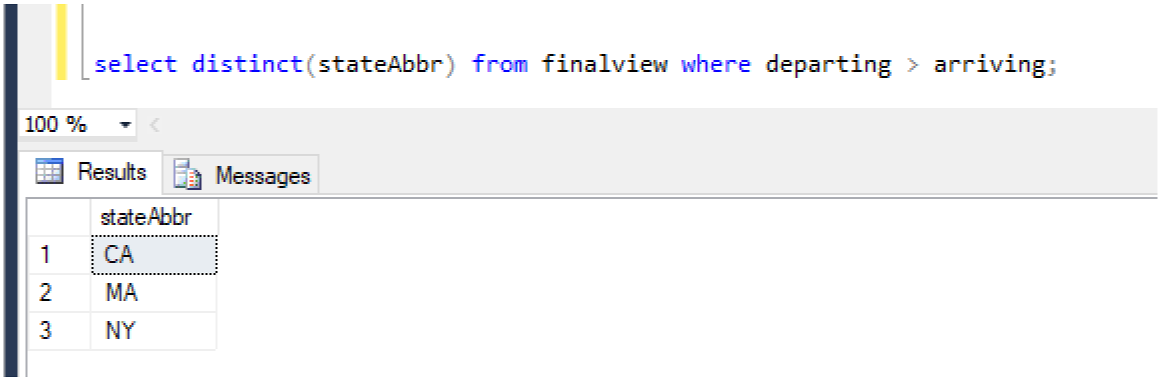
	airportID	airportName	cityId	cityName	stateAbbr	stateName	departing	arriving
1	BOS	Logan International Airport	C007	Boston	MA	Massachusetts	3	1
2	JFK	John F. Kennedy International Airport	C008	New York	NY	New York	2	2
3	LAX	Los Angeles International Airport	C001	Los Angeles	CA	California	2	1
4	ORD	Chicago OHare International Airport	C006	Chicago	IL	Illinois	1	3
5	PDX	Portland International Airport	C010	Portland	OR	Oregon	1	1
6	SEA	Seattle-Tacoma International Airport	C011	Seattle	WA	Washington	1	1
7	SYR	Syracuse Hancock International Airport	C009	Syracuse	NY	New York	2	1

6. 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.

Query:

```
select distinct(stateAbbr) from finalview where departing > arriving;
```

Result:



```
select distinct(stateAbbr) from finalview where departing > arriving;
```

	stateAbbr
1	CA
2	MA
3	NY