DATA MANAGEMENT AND DATABASE DESIGN

INFO 6210 : FINAL PROJECT

Airline Management Database Design

Presented By :

Sudeep Surisetty

001887695

Instructor :

Yusuf Ozbek

1. PROJECT DESCRIPTION

With the increase in competition among the airline companies, the flight fares have come within the affordability of a common man. Due to which travel by air is being preferred by more number of people and there has been an exponential rise in the number of passengers and the number of flight trips. To tackle such a huge traffic every airline needs to maintain consistent and durable database design for smooth flow of its operations.

The system is based on airline management. Airline Management System primarily deals with data management of passengers, flight routes, and its employees. The system provides an overview of the underlying operational factors.

ASSUMPTIONS :

- I have taken into account for only one airliner operations management which includes only passenger flights and not the cargo flights.
- There are connecting flights involved, every flight schedule mentioned is only up to the destination specified.
- The details of flights are taken as a snapshot of a single day.
- There are different types of job roles in an airline company but for the simplicity of the system, only few job roles are considered.

2. ENTITIES

Person: Employees can also be passengers so creating Person entity.

Address: Every person has one or more address.

Employee: Airline has employees.

Passenger: Each passenger is the one who is a customer of the airline.

Flight passenger: This contains information about which flight a passenger is on, their itinerary number and seat number.

Flights: List of all scheduled flights. And each flight has a route and with departure, arrival time.

Flight Status: Includes predefined types of status for a flight.

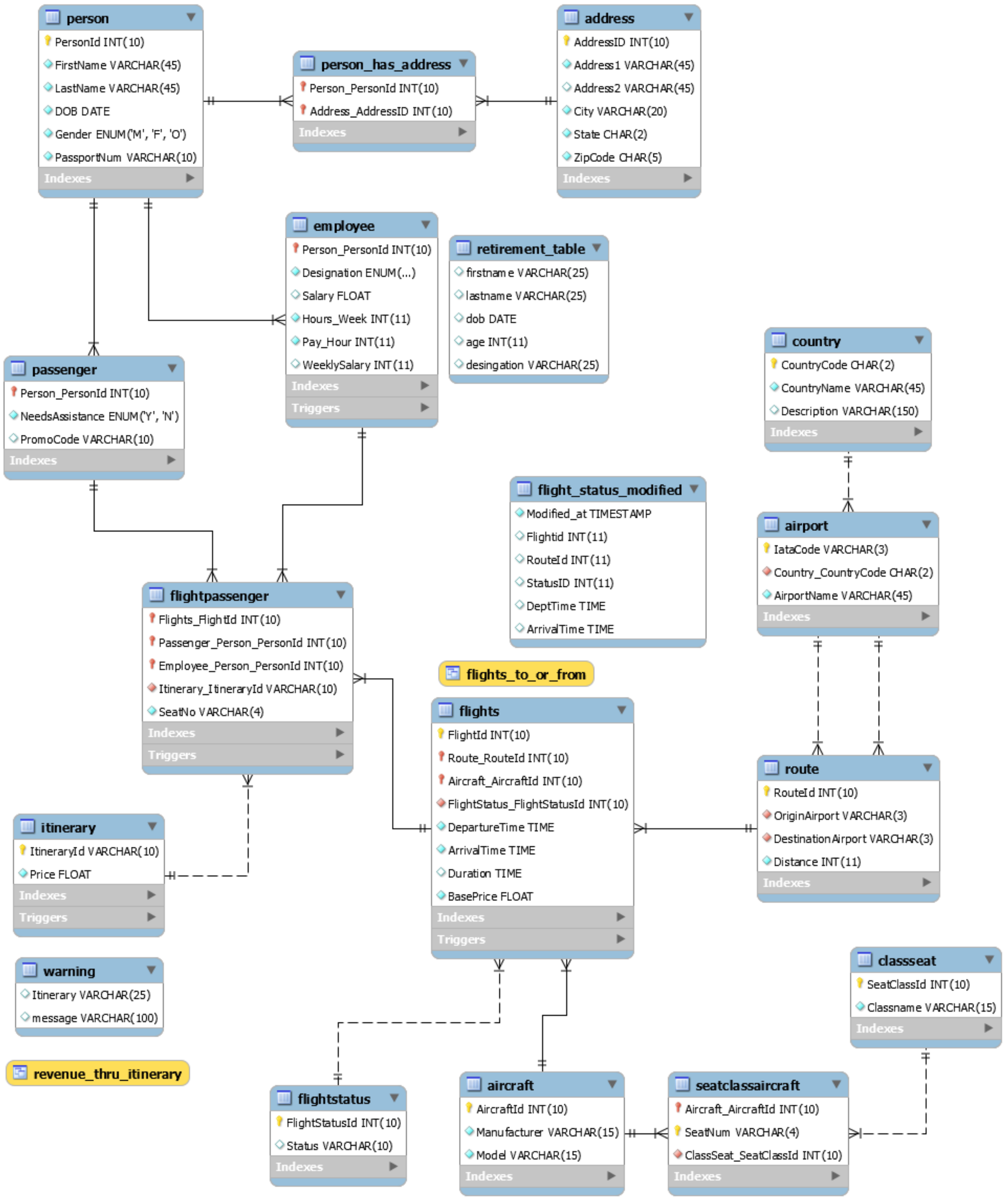
Route: This has the information about origin and destinations.

Airport: Every airport belongs to one country and has IATA code.

Itinerary: The table contains a list of all passenger itineraries. Many passengers can have the same itinerary. Many passengers can have many itineraries. It also has the cost of per person for the itinerary(not the flight).

Aircraft: Each aircraft has the same set of seat classes which in turn has seat numbers.

3. ER/EER DIAGRAM



ER Diagram contains following relationships. (Associative entity has been included for m:n relations)

ENTITY 1	**ENTITY 2**	**CARDINALITY**
Person	Address	m : n
Passenger	Person	1 : 1
Employee	Person	1 : 1
Passenger	FlightPassenger	1 : m
Itinerary	FlightPassenger	1 : m
FlightPassenger	Employee	m : 1
FlightPassenger	Flights	m : 1
ClassSeat	SeatClassAircraft	1 : m
SeatClassAircraft	Aircraft	m : 1
Aircraft	Flights	1 : m
FlightStatus	Flights	1 : m
Country	Airport	1 : m
Airport	Route	1 : m
Flilghts	Route	m : 1

4. MySQL

TRIGGERS, STORED PROCEDURES, FUNCTIONS, VIEWS, QUERIES

TRIGGERS

1) DONOT ALLOCATE SEAT IF ITS ALREADY RESERVED

Creating a trigger before insert and update which check the seat availability. Inside the trigger we are obtaining the Route and Aircraft type.

And also " is_seat_available () " function is called which returns boolean to mention if any passenger is present for the seat.

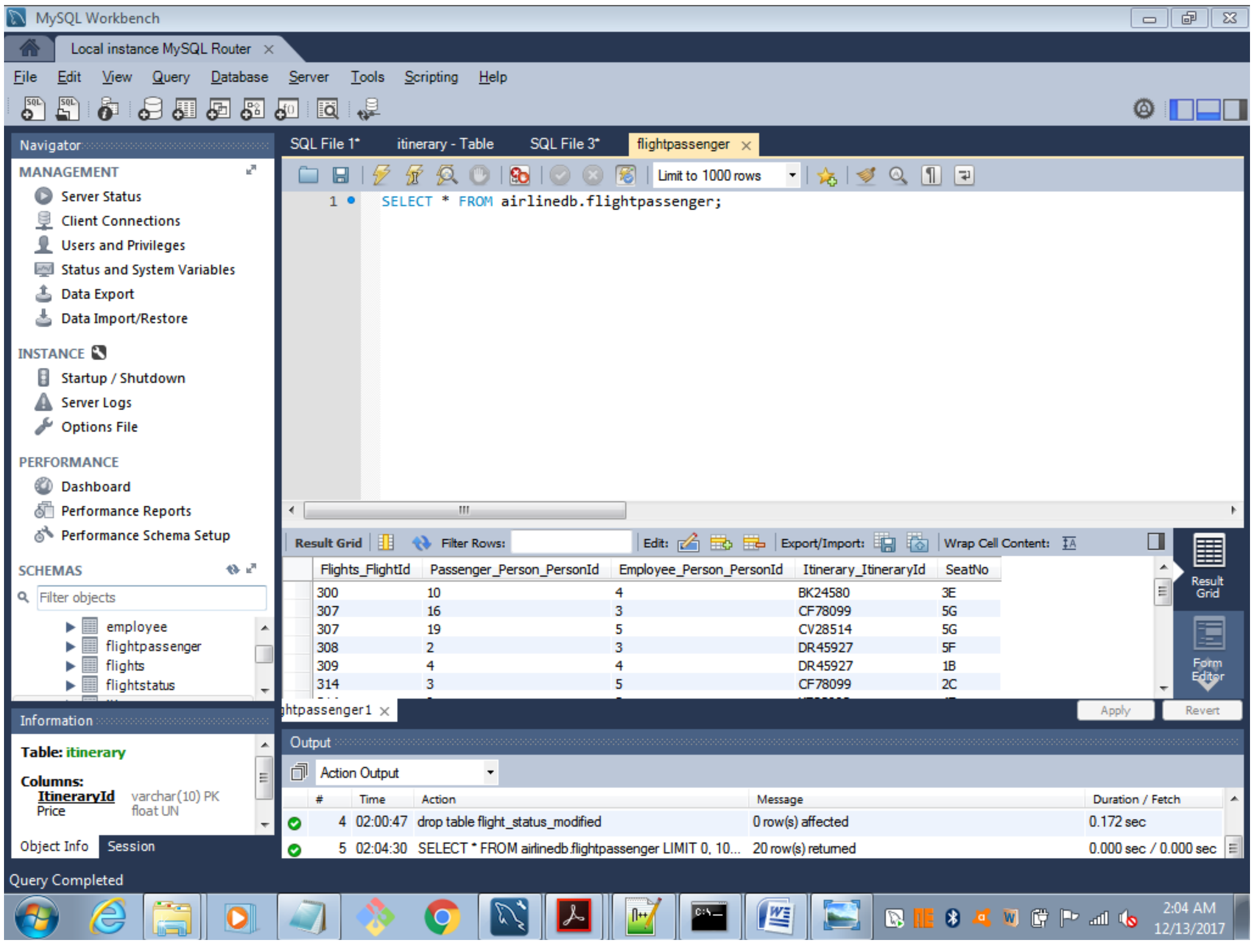
TRIGGER:

```
CREATE DEFINER=`root`@`localhost` TRIGGER
`airlinedb`.`flightpassenger_BEFORE_INSERT` BEFORE INSERT ON `flightpassenger` FOR
EACH ROW

BEGIN


DECLARE IdRoute int;

DECLARE IdAircraft int;

DECLARE SeatNo varchar(4);

DECLARE avail boolean;


SET avail = 1;


SET SeatNo = NEW.SeatNo;


SET IdRoute =(SELECT flights.route_routeId FROM flightpassenger

INNER JOIN flights

ON flightpassenger.Flights_FlightId = flights.flightid

WHERE Flights_FlightId = NEW.Flights_FlightId
GROUP BY flights.route_routeId);



SET IdAircraft =(SELECT flights.aircraft_aircraftId FROM flightpassenger
INNER JOIN flights
ON flightpassenger.Flights_FlightId = flights.flightid
WHERE Flights_FlightId = NEW.Flights_FlightId
GROUP BY flights.route_routeId);



SET avail = is_seat_available(NEW.Flights_FlightId,IdRoute,IdAircraft,SeatNo);

if(avail = 0)
THEN
set NEW.SeatNo=SeatNo;
ELSE
set NEW.SeatNo='NULL';
END IF;

END
```

FUNCTION :

```
CREATE DEFINER=`root`@`localhost` FUNCTION `is_seat_available`(IdFlight int, IdRoute
int, IdAircraft int, seat varchar(4)) RETURNS tinyint(1)

BEGIN


DECLARE var varchar(10);

DECLARE valid boolean;


SET var = '';


SET var = (SELECT flightpassenger.Passenger_Person_PersonId FROM flights

INNER JOIN FlightPassenger

ON FlightId = flightpassenger.Flights_FlightId

WHERE (FlightId=IdFlight AND flights.Route_RouteId=IdRoute AND
flights.Aircraft_AircraftId = IdAircraft AND flightpassenger.SeatNo = seat)

);


IF (var != '')

THEN

SET valid = 1;


ELSE

SET valid = 0;

END IF;


return valid;


END
```

* Trying to book seat which is already taken by a passenger in flightID = 307



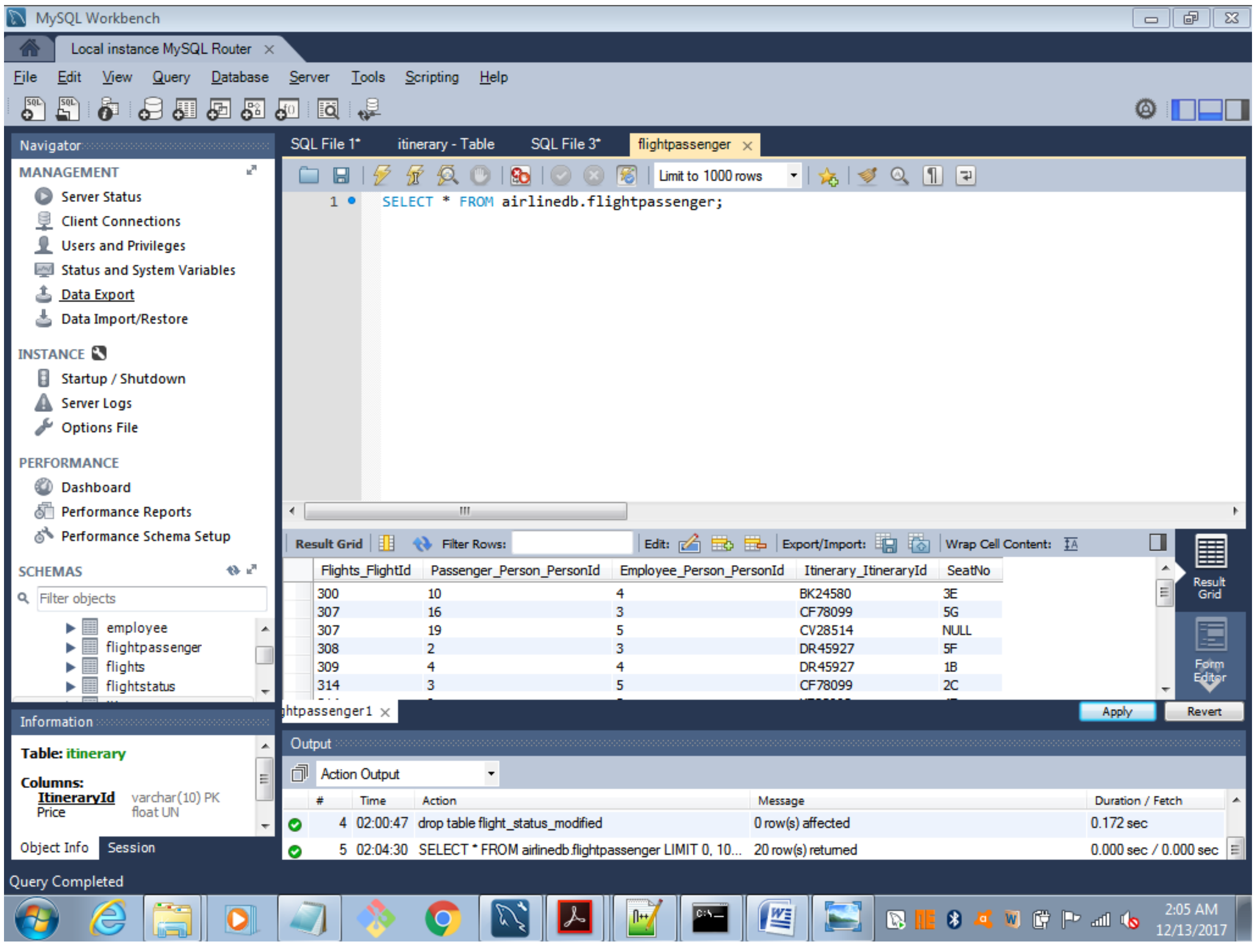
```
SELECT * FROM airlinedb.flightpassenger;
```

Flights_FlightId	Passenger_Person_PersonId	Employee_Person_PersonId	Itinerary_ItineraryId	SeatNo
300	10	4	BK24580	3E
307	16	3	CF78099	5G
307	19	5	CV28514	5G
308	2	3	DR45927	5F
309	4	4	DR45927	1B
314	3	5	CF78099	2C

#	Time	Action	Message	Duration / Fetch
4	02:00:47	drop table flight_status_modified	0 row(s) affected	0.172 sec
5	02:04:30	SELECT * FROM airlinedb.flightpassenger LIMIT 0, 10...	20 row(s) returned	0.000 sec / 0.000 sec

Table: itinerary
Columns:
ItineraryId varchar(10) PK
Price float UN

Query Completed



```
SELECT * FROM airlinedb.flightpassenger;
```

Flights_FlightId	Passenger_Person_PersonId	Employee_Person_PersonId	Itinerary_ItineraryId	SeatNo
300	10	4	BK24580	3E
307	16	3	CF78099	5G
307	19	5	CV28514	NULL
308	2	3	DR45927	5F
309	4	4	DR45927	1B
314	3	5	CF78099	2C

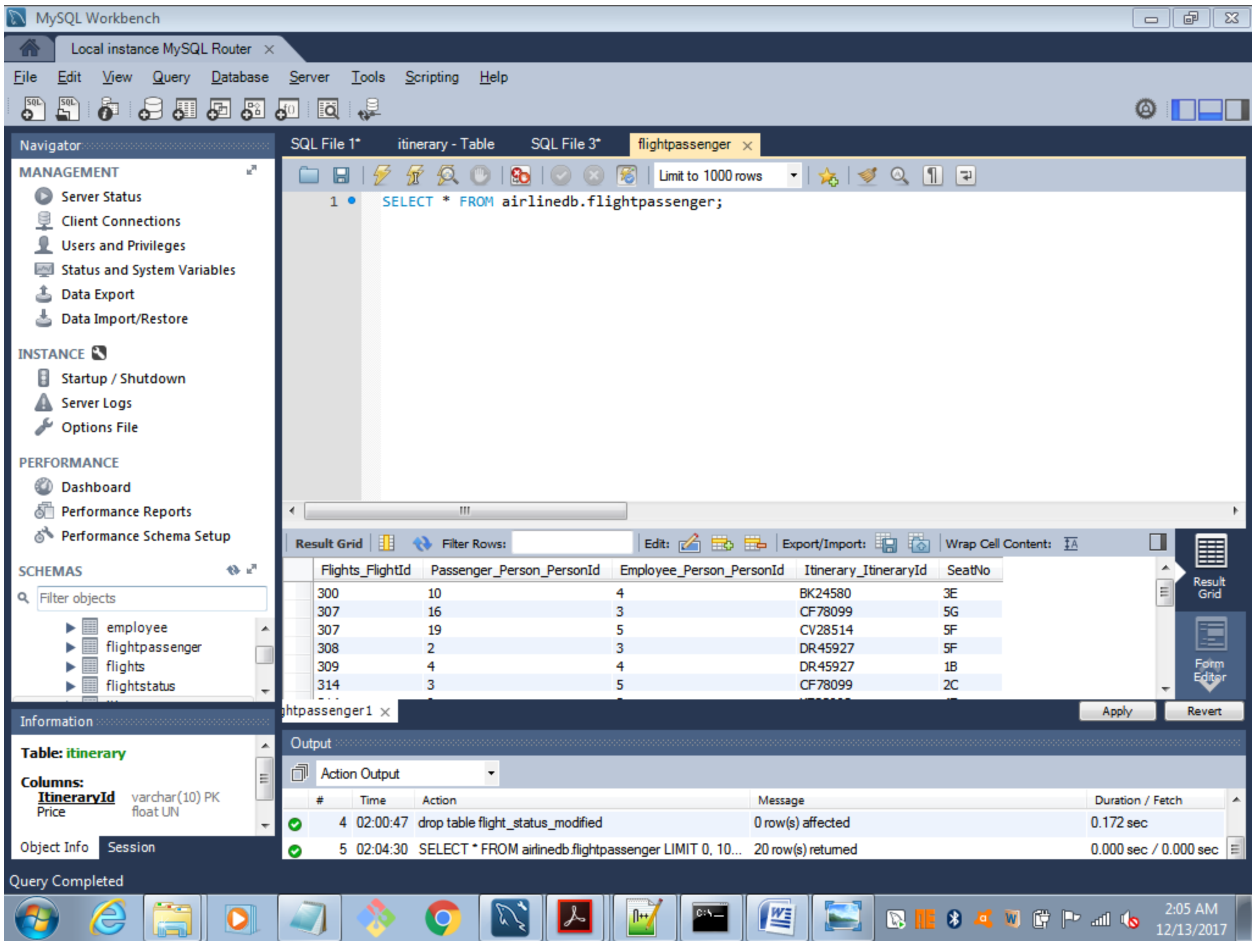
```
#  Time      Action                                              Message                Duration / Fetch
4  02:00:47  drop table flight_status_modified                   0 row(s) affected      0.172 sec
5  02:04:30  SELECT * FROM airlinedb.flightpassenger LIMIT 0, 10...  20 row(s) returned  0.000 sec / 0.000 sec
```

Table: itinerary

Columns:
ItineraryId varchar(10) PK
Price float UN

Query Completed

*trying to book a new seat which is not reserved before



```
SELECT * FROM airlinedb.flightpassenger;
```

Flights_FlightId	Passenger_Person_PersonId	Employee_Person_PersonId	Itinerary_ItineraryId	SeatNo
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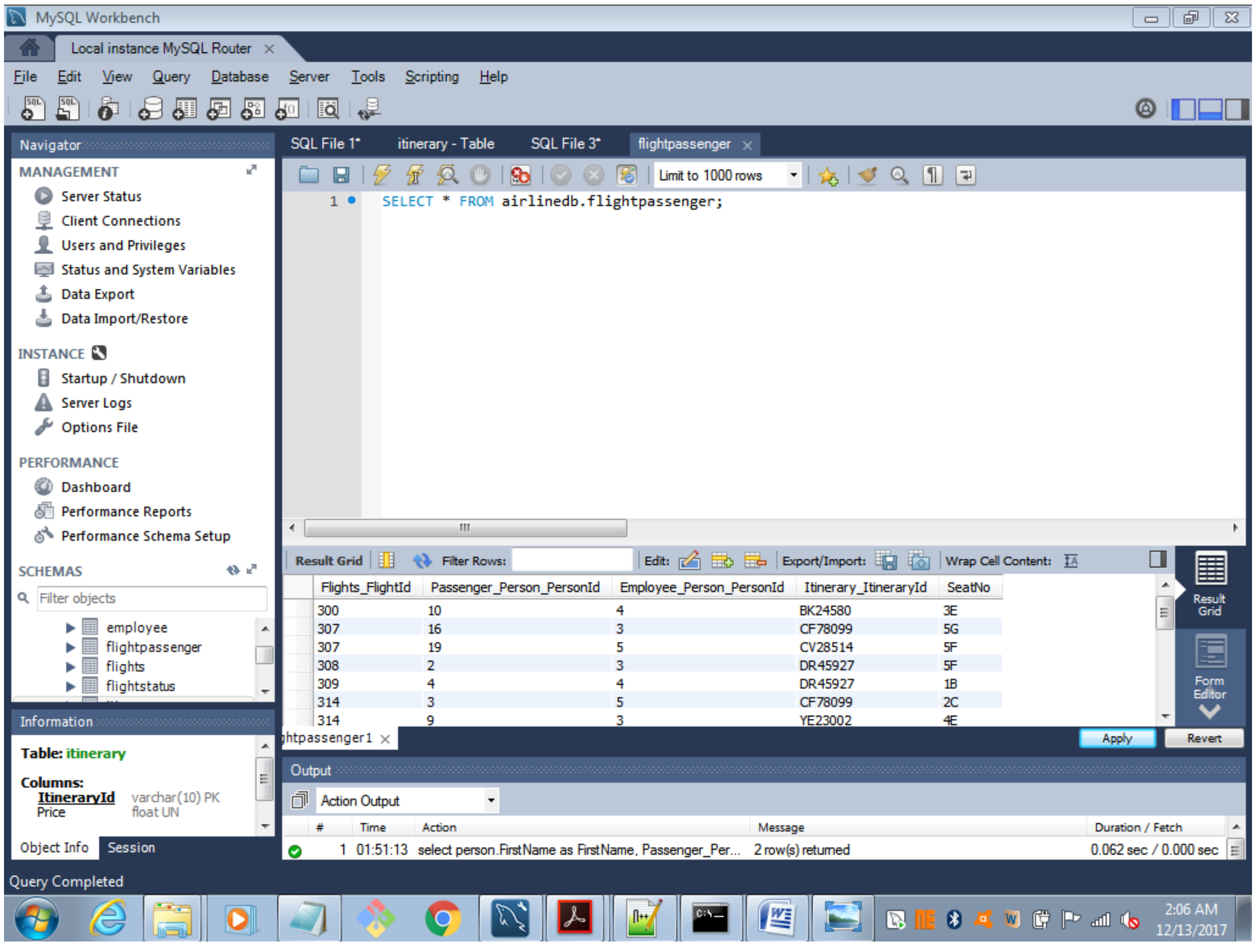
308	2	3	DR45927	5F
309	4	4	DR45927	1B
314	3	5	CF78099	2C

Information

Table: itinerary

Columns:
ItineraryId varchar(10) PK
Price float UN

#	Time	Action	Message	Duration / Fetch
4	02:00:47	drop table flight_status_modified	0 row(s) affected	0.172 sec
5	02:04:30	SELECT * FROM airlinedb.flightpassenger LIMIT 0, 10...	20 row(s) returned	0.000 sec / 0.000 sec



Information

Table: itinerary

Columns:
ItineraryId varchar(10) PK
Price float UN

```
SELECT * FROM airlinedb.flightpassenger;
```

Flights_FlightId	Passenger_Person_PersonId	Employee_Person_PersonId	Itinerary_ItineraryId	SeatNo
300	10	4	BK24580	3E
307	16	3	CF78099	5G
307	19	5	CV28514	5F
308	2	3	DR45927	5F
309	4	4	DR45927	1B
314	3	5	CF78099	2C
314	9	3	YE23002	4E

#	Time	Action	Message	Duration / Fetch
1	01:51:13	select person.FirstName as FirstName, Passenger_Per...	2 row(s) returned	0.062 sec / 0.000 sec

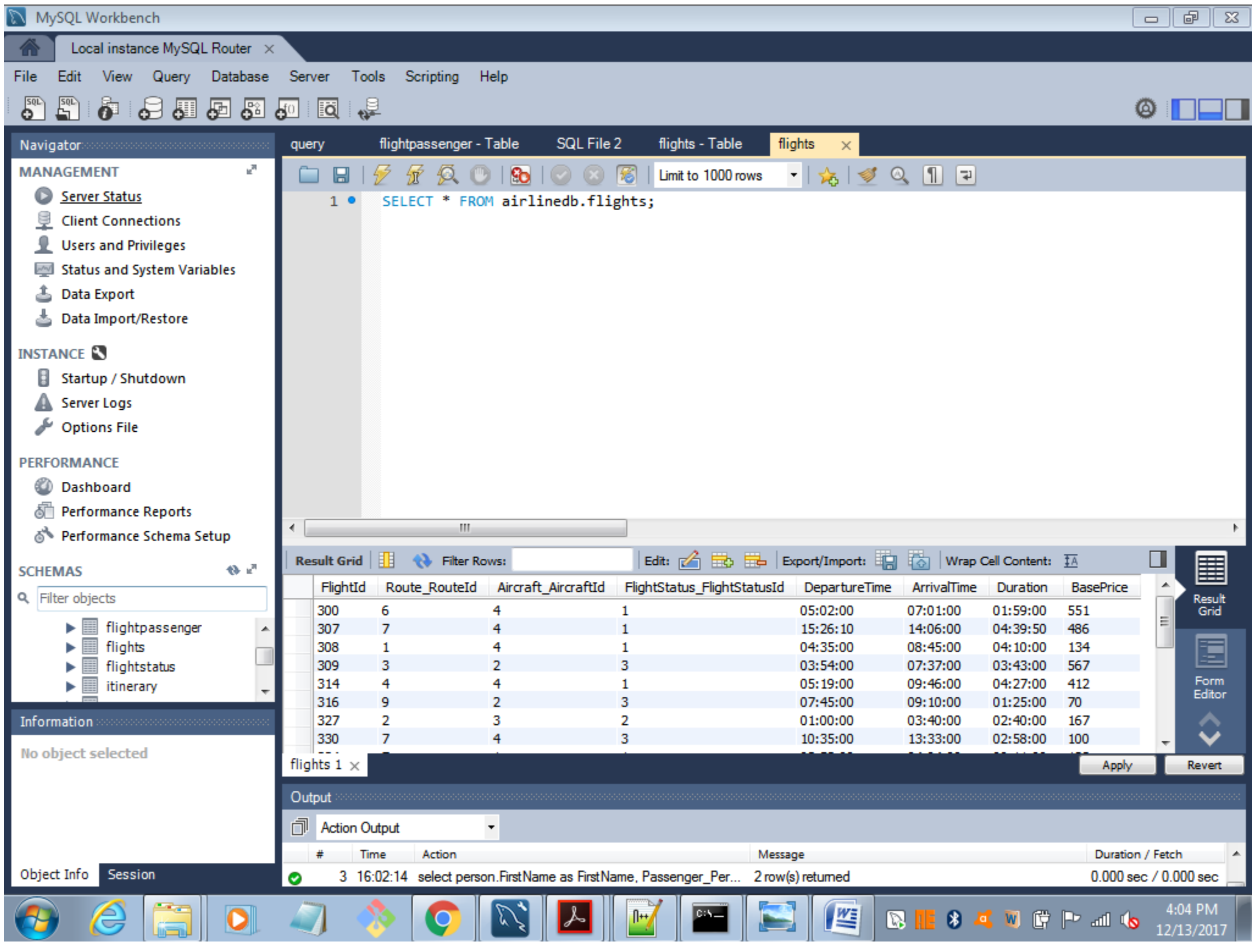
2) Flight time check

Here it will check if arrival and departure time are same or not in 1st loop.

Then it will check if the updated values are properly done within the restrictions and then calculates the duration accordingly.

```
CREATE DEFINER=`root`@`localhost` TRIGGER `airlinedb`.`flights_BEFORE_UPDATE`
BEFORE UPDATE ON `flights` FOR EACH ROW

BEGIN


IF(NEW.ArrivalTime = NEW.DepartureTime) || (NEW.ArrivalTime = OLD.DepartureTime)
|| (NEW.DepartureTime = OLD.ArrivalTime)

THEN

SET NEW.DepartureTime = OLD.DepartureTime;

SET NEW.ArrivalTime = OLD.ArrivalTime;

END IF;


IF((NEW.ArrivalTime <> OLD.ArrivalTime ) || (NEW.DepartureTime <> OLD.ArrivalTime))

THEN

IF (NEW.ArrivalTime < NEW.DepartureTime)

THEN


SET NEW.DepartureTime = OLD.DepartureTime;

SET NEW.ArrivalTime = OLD.ArrivalTime;

END IF;

SET NEW.Duration = timediff(NEW.arrivaltime,NEW.departuretime);

END IF;END
```

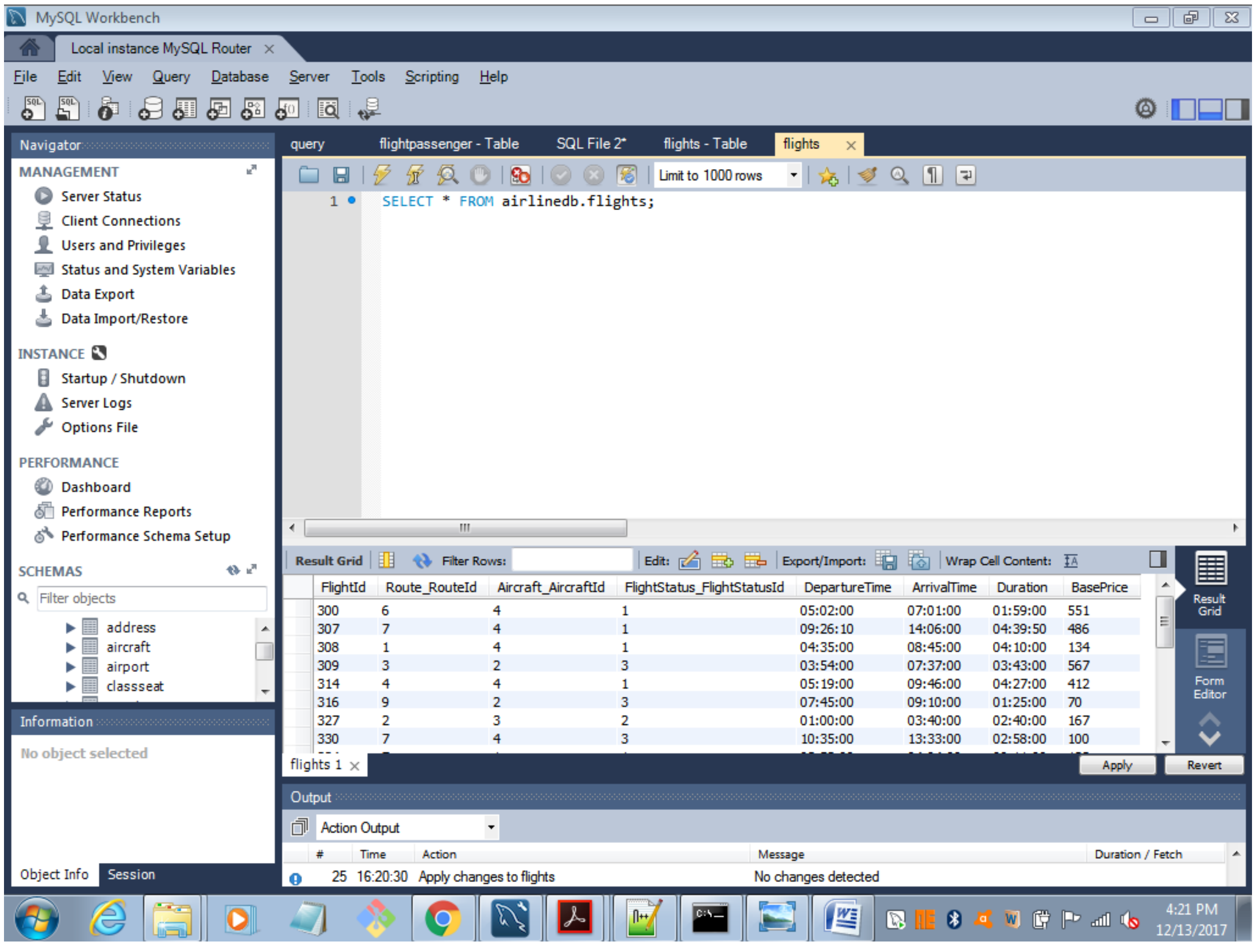
*Trying to change the 307 Flight ID departure time more than arrival time and gets rejected.



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
300	6	4	1	05:02:00	07:01:00	01:59:00	551
307	7	4	1	15:26:10	14:06:00	04:39:50	486
308	1	4	1	04:35:00	08:45:00	04:10:00	134
309	3	2	3	03:54:00	07:37:00	03:43:00	567
314	4	4	1	05:19:00	09:46:00	04:27:00	412
316	9	2	3	07:45:00	09:10:00	01:25:00	70
327	2	3	2	01:00:00	03:40:00	02:40:00	167
330	7	4	3	10:35:00	13:33:00	02:58:00	100

```
#   Time      Action                                          Message             Duration / Fetch
3   16:02:14  select person.FirstName as FirstName, Passenger_Per...   2 row(s) returned   0.000 sec / 0.000 sec
```



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
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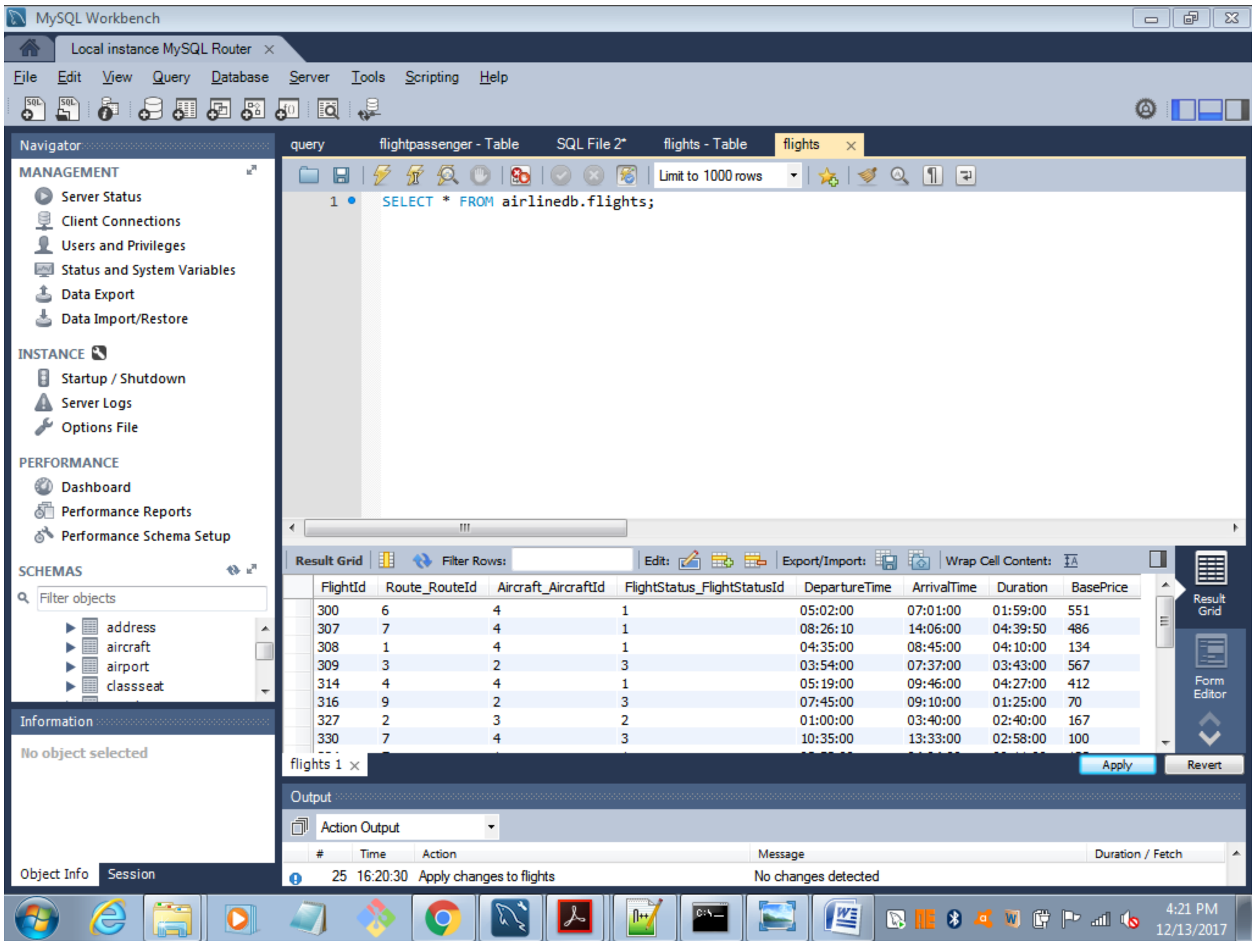
#	Time	Action	Message	Duration / Fetch
25	16:20:30	Apply changes to flights	No changes detected	

* The time gets updated when both departure and arrival are given properly



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
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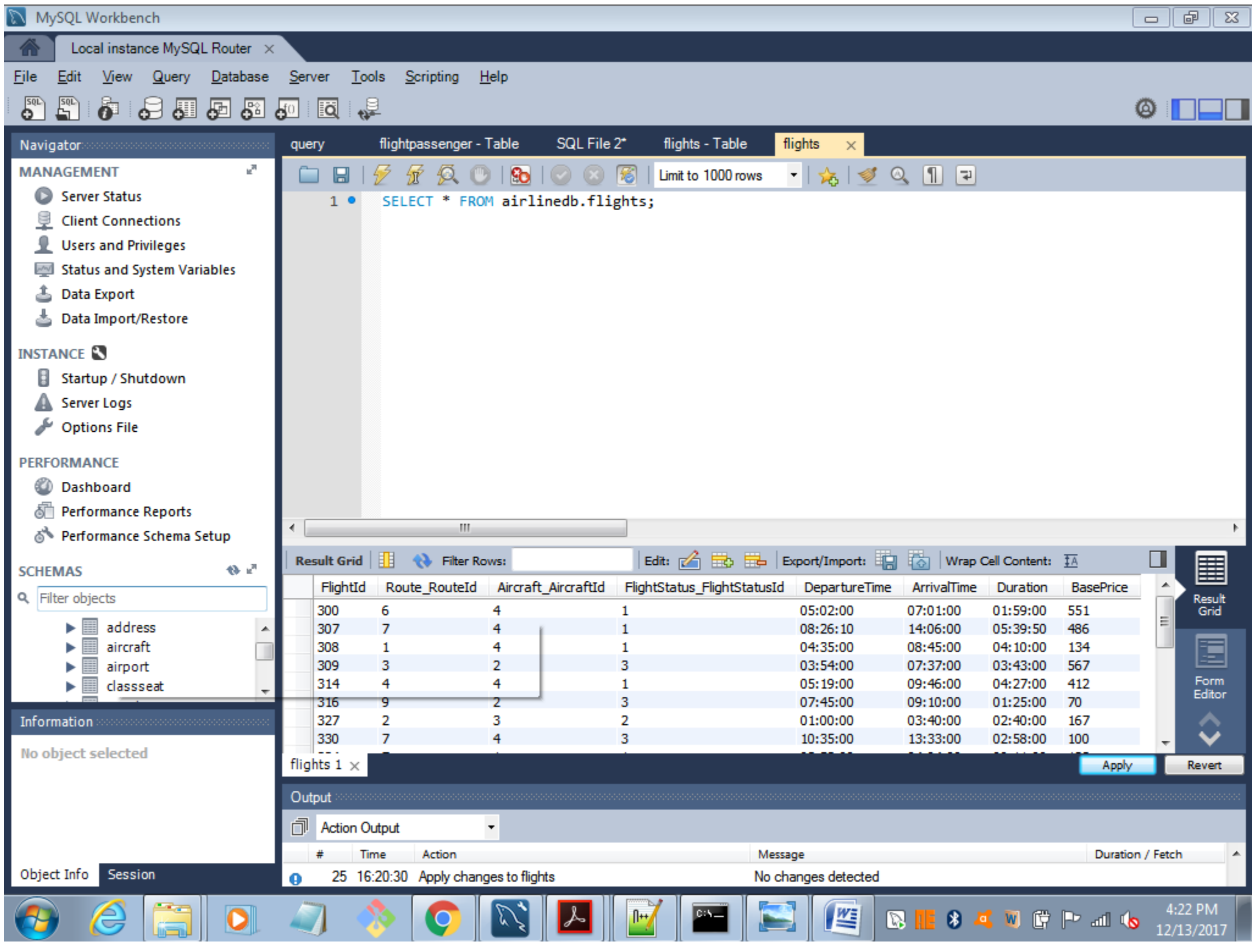
330	7	4	3	10:35:00	13:33:00	02:58:00	100

```
#   Time      Action                    Message               Duration / Fetch
25  16:20:30  Apply changes to flights  No changes detected
```



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
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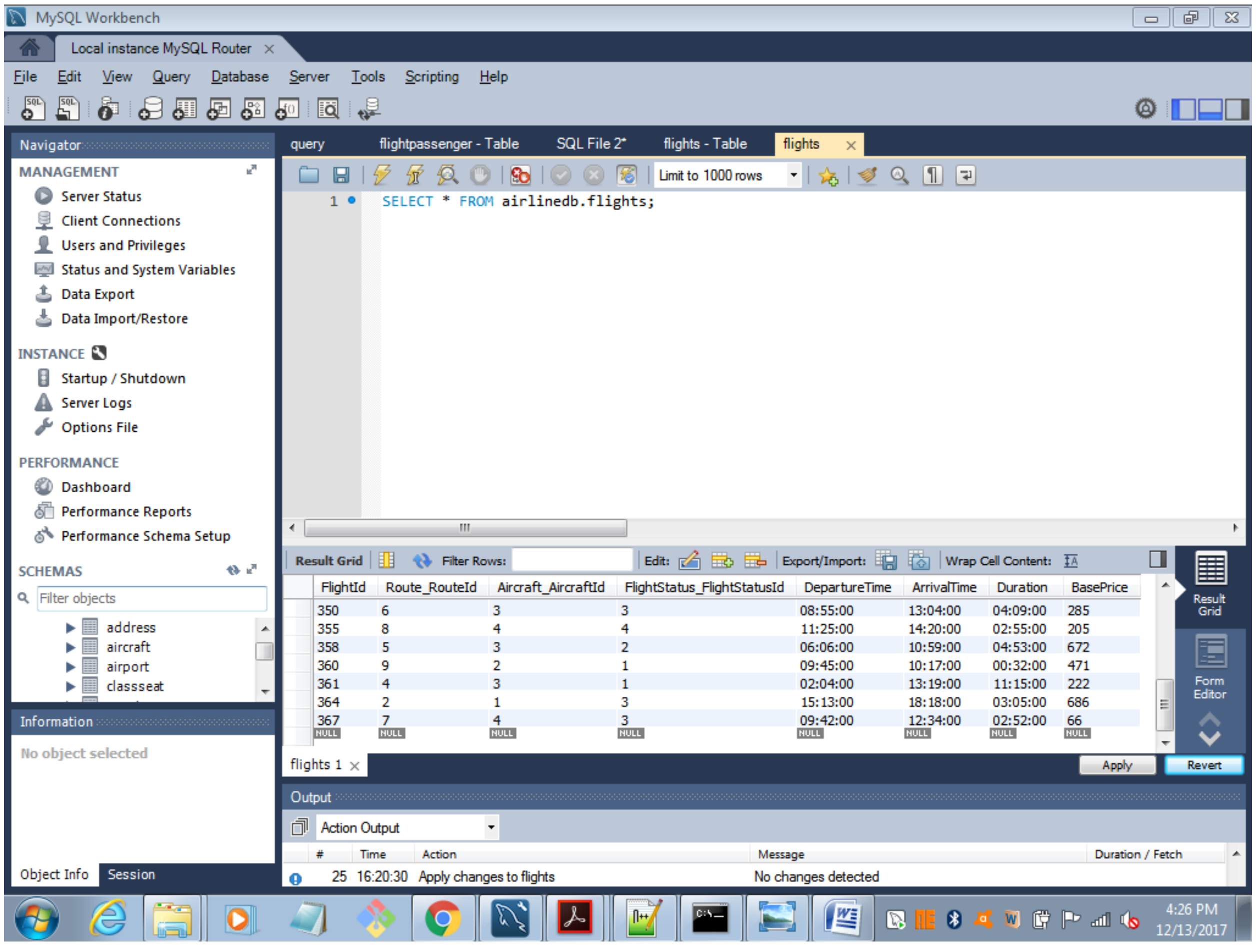
327	2	3	2	01:00:00	03:40:00	02:40:00	167
330	7	4	3	10:35:00	13:33:00	02:58:00	100

Output: Action Output

#	Time	Action	Message	Duration / Fetch
25	16:20:30	Apply changes to flights	No changes detected	

3) Flight Status modified

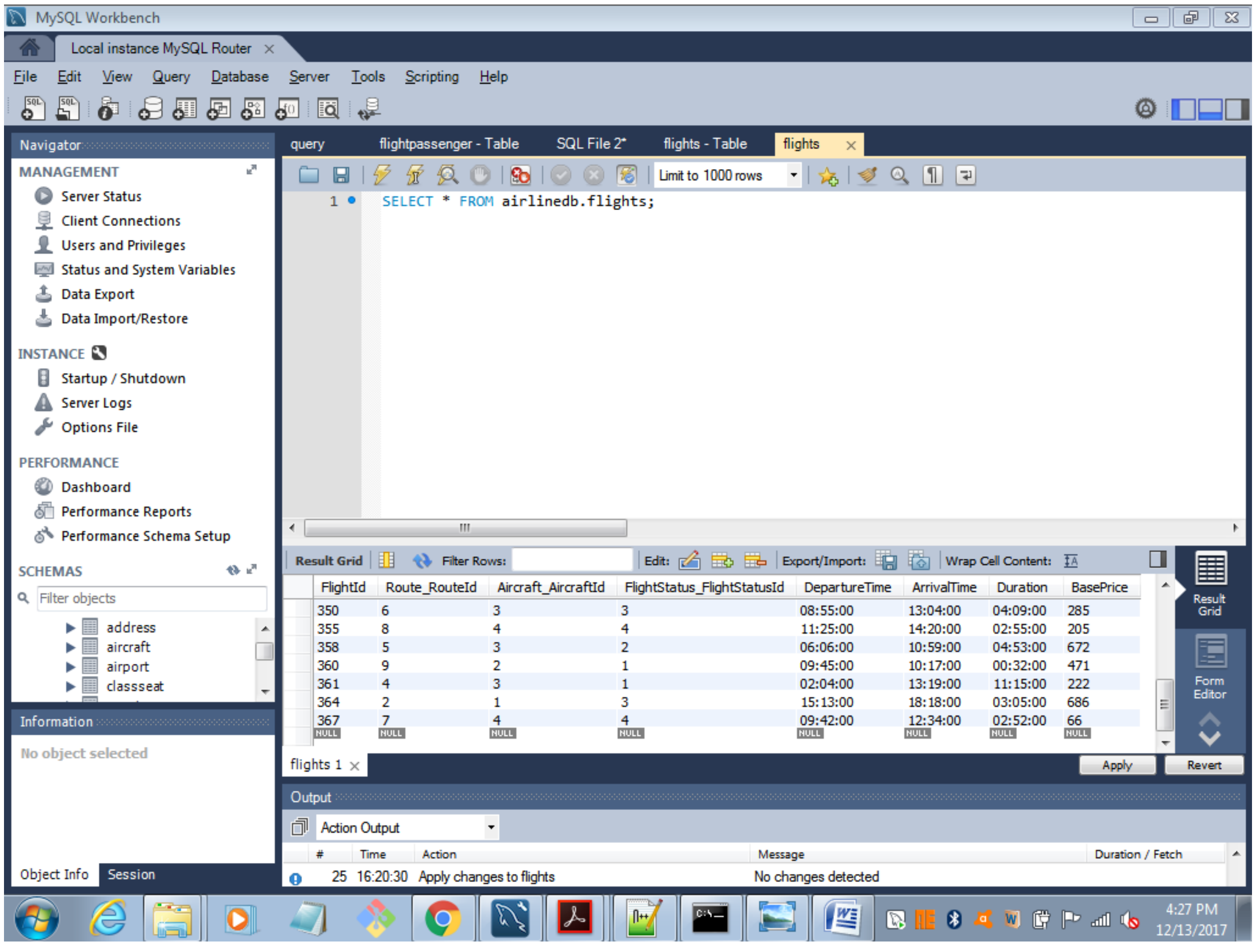
```
CREATE DEFINER=`root`@`localhost` TRIGGER `airlinedb`.`flights_STATUS_AFTER_UPDATE`
AFTER UPDATE ON `flights` FOR EACH ROW

BEGIN


IF OLD.FlightStatus_FlightStatusId <> NEW.FlightStatus_FlightStatusId

THEN

INSERT INTO flight_status_modified VALUES(

                    NOW(),
NEW.FlightId,NEW.Route_RouteId,NEW.FlightStatus_FlightStatusId,NEW.DepartureTime,NE
W.ArrivalTime

          );

END IF;


END
```



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
350	6	3	3	08:55:00	13:04:00	04:09:00	285
355	8	4	4	11:25:00	14:20:00	02:55:00	205
358	5	3	2	06:06:00	10:59:00	04:53:00	672
360	9	2	1	09:45:00	10:17:00	00:32:00	471
361	4	3	1	02:04:00	13:19:00	11:15:00	222
364	2	1	3	15:13:00	18:18:00	03:05:00	686
367	7	4	3	09:42:00	12:34:00	02:52:00	66
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#    Time      Action                   Message              Duration / Fetch
25   16:20:30  Apply changes to flights No changes detected
```



```
SELECT * FROM airlinedb.flights;
```

FlightId	Route_RouteId	Aircraft_AircraftId	FlightStatus_FlightStatusId	DepartureTime	ArrivalTime	Duration	BasePrice
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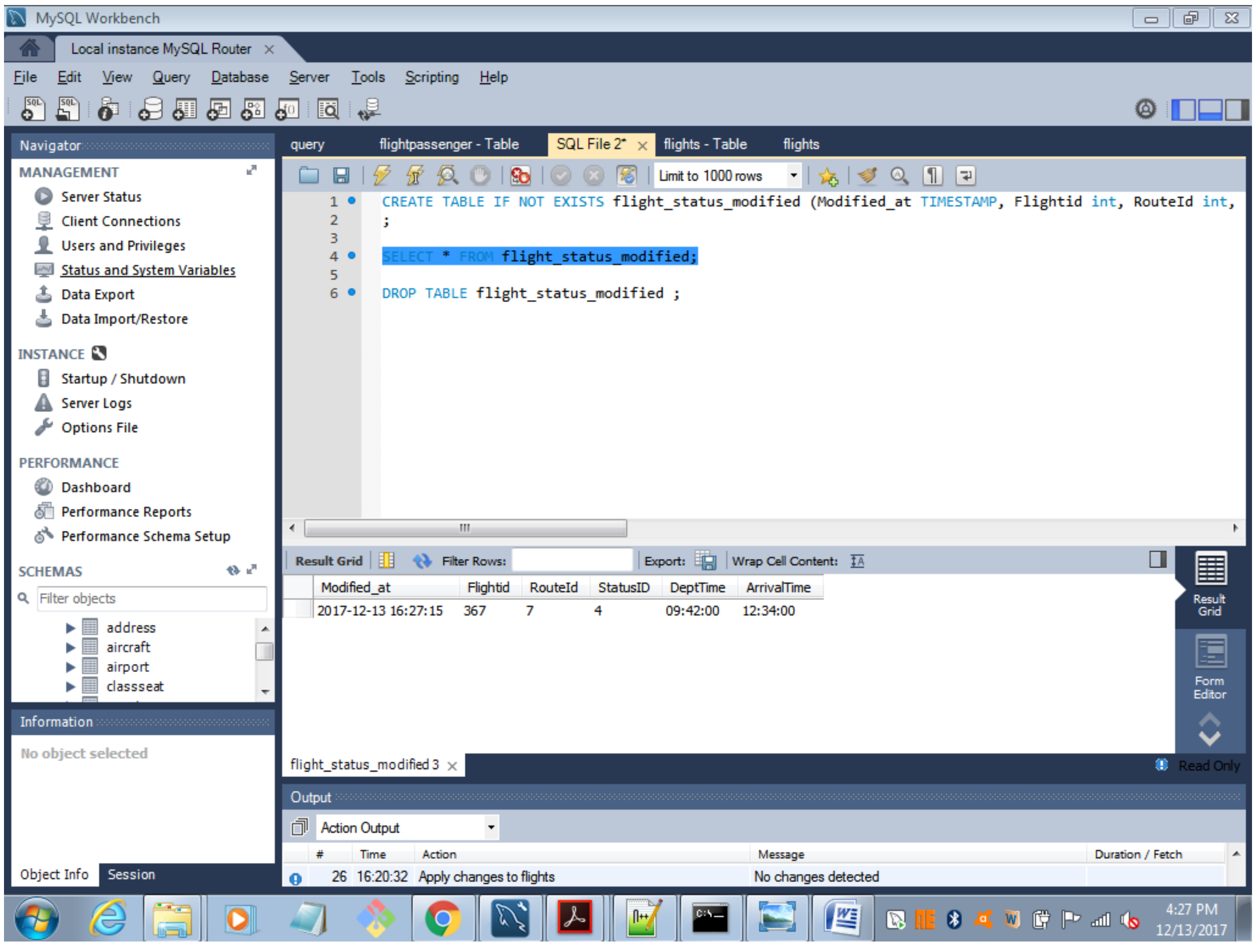
355	8	4	4	11:25:00	14:20:00	02:55:00	205
358	5	3	2	06:06:00	10:59:00	04:53:00	672
360	9	2	1	09:45:00	10:17:00	00:32:00	471
361	4	3	1	02:04:00	13:19:00	11:15:00	222
364	2	1	3	15:13:00	18:18:00	03:05:00	686
367	7	4	4	09:42:00	12:34:00	02:52:00	66
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

#	Time	Action	Message	Duration / Fetch
25	16:20:30	Apply changes to flights	No changes detected	



```
CREATE TABLE IF NOT EXISTS flight_status_modified (Modified_at TIMESTAMP, Flightid int, RouteId int,
;

SELECT * FROM flight_status_modified;

DROP TABLE flight_status_modified ;
```

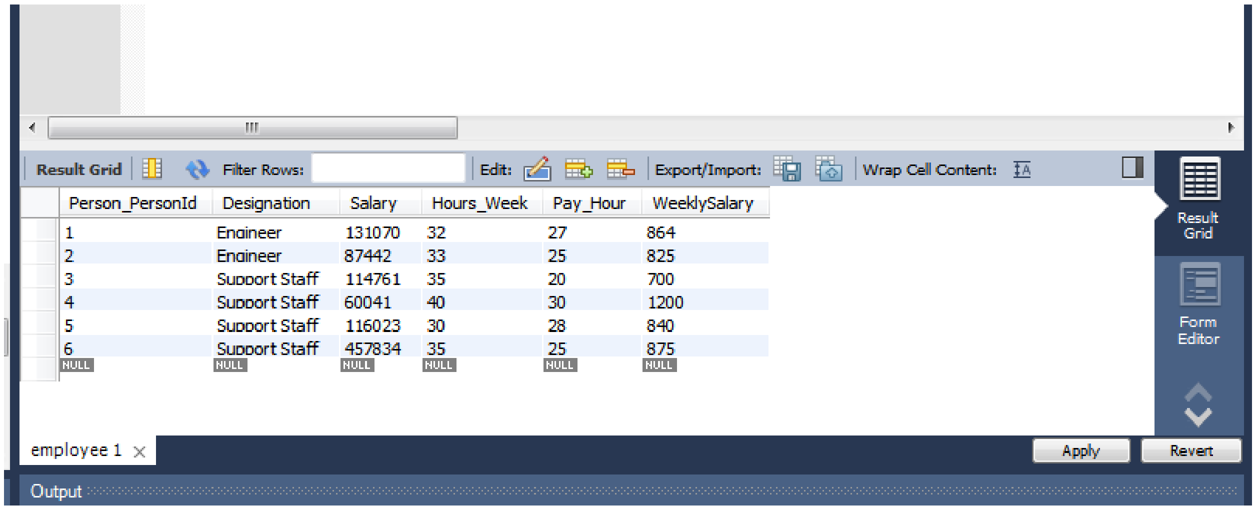
Modified_at	Flightid	RouteId	StatusID	DeptTime	ArrivalTime
2017-12-13 16:27:15	367	7	4	09:42:00	12:34:00

```
#   Time      Action                     Message              Duration / Fetch
26  16:20:32  Apply changes to flights   No changes detected
```

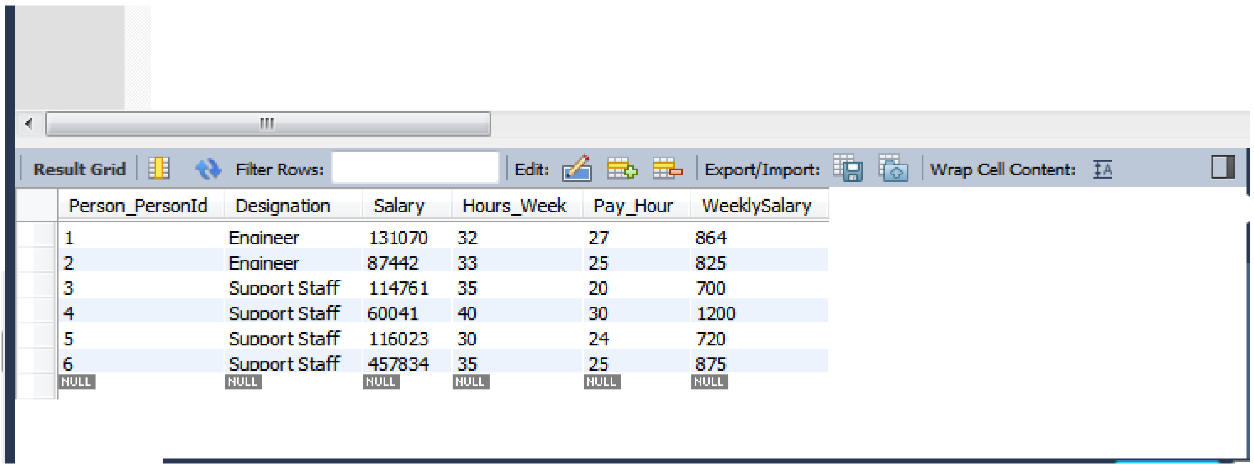
4) Weekly Salary gets calculated based on hours/week and pay/hour.

```
CREATE DEFINER=`root`@`localhost` TRIGGER `airlinedb`.`employee_BEFORE_INSERT`
BEFORE INSERT ON `employee` FOR EACH ROW

BEGIN

set new.weeklysalary = new.hours_week * new.pay_hour;

END
```

*updating person 5 - hourly pay



Person_PersonId	Designation	Salary	Hours_Week	Pay_Hour	WeeklySalary
1	Engineer	131070	32	27	864
2	Engineer	87442	33	25	825
3	Support Staff	114761	35	20	700
4	Support Staff	60041	40	30	1200
5	Support Staff	116023	30	28	840
6	Support Staff	457834	35	25	875
NULL	NULL	NULL	NULL	NULL	NULL



Person_PersonId	Designation	Salary	Hours_Week	Pay_Hour	WeeklySalary
1	Engineer	131070	32	27	864
2	Engineer	87442	33	25	825
3	Support Staff	114761	35	20	700
4	Support Staff	60041	40	30	1200
5	Support Staff	116023	30	24	720
6	Support Staff	457834	35	25	875
NULL	NULL	NULL	NULL	NULL	NULL

5) Setting Base Price to default or old value

Creating a table called Warning and setting prices based on insert or updates.

Making sure valid base price is entered before update as well, else it will revert back to old price value. And logs are stored in warning table.

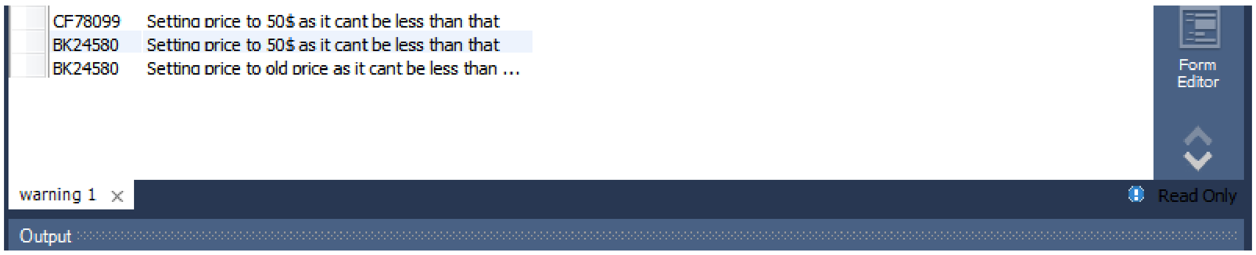
*Before insert

```
CREATE DEFINER=`root`@`localhost` TRIGGER `airlinedb`.`itinerary_BEFORE_INSERT`
BEFORE INSERT ON `itinerary` FOR EACH ROW

BEGIN

DECLARE msg VARCHAR(50);


IF (NEW.Price < 50)

THEN

SET NEW.Price = 50;

SET msg = 'Setting price to 50$ as it cant be less than that';

INSERT INTO Warning VALUES(NEW.ItineraryId,msg);


END IF;


END
```

* Before update

```
CREATE DEFINER=`root`@`localhost` TRIGGER `airlinedb`.`itinerary_BEFORE_UPDATE`
BEFORE UPDATE ON `itinerary` FOR EACH ROW

BEGIN

DECLARE msg VARCHAR(50);
```

```
IF (NEW.Price < 50)

THEN

SET NEW.Price = OLD.Price;

INSERT INTO Warning VALUES(NEW.ItineraryId,'Setting price to old price as it cant be less
than that');


END IF;


END
```



```
CF78099   Setting price to 50$ as it cant be less than that
BK24580   Setting price to 50$ as it cant be less than that
BK24580   Setting price to old price as it cant be less than ...
```

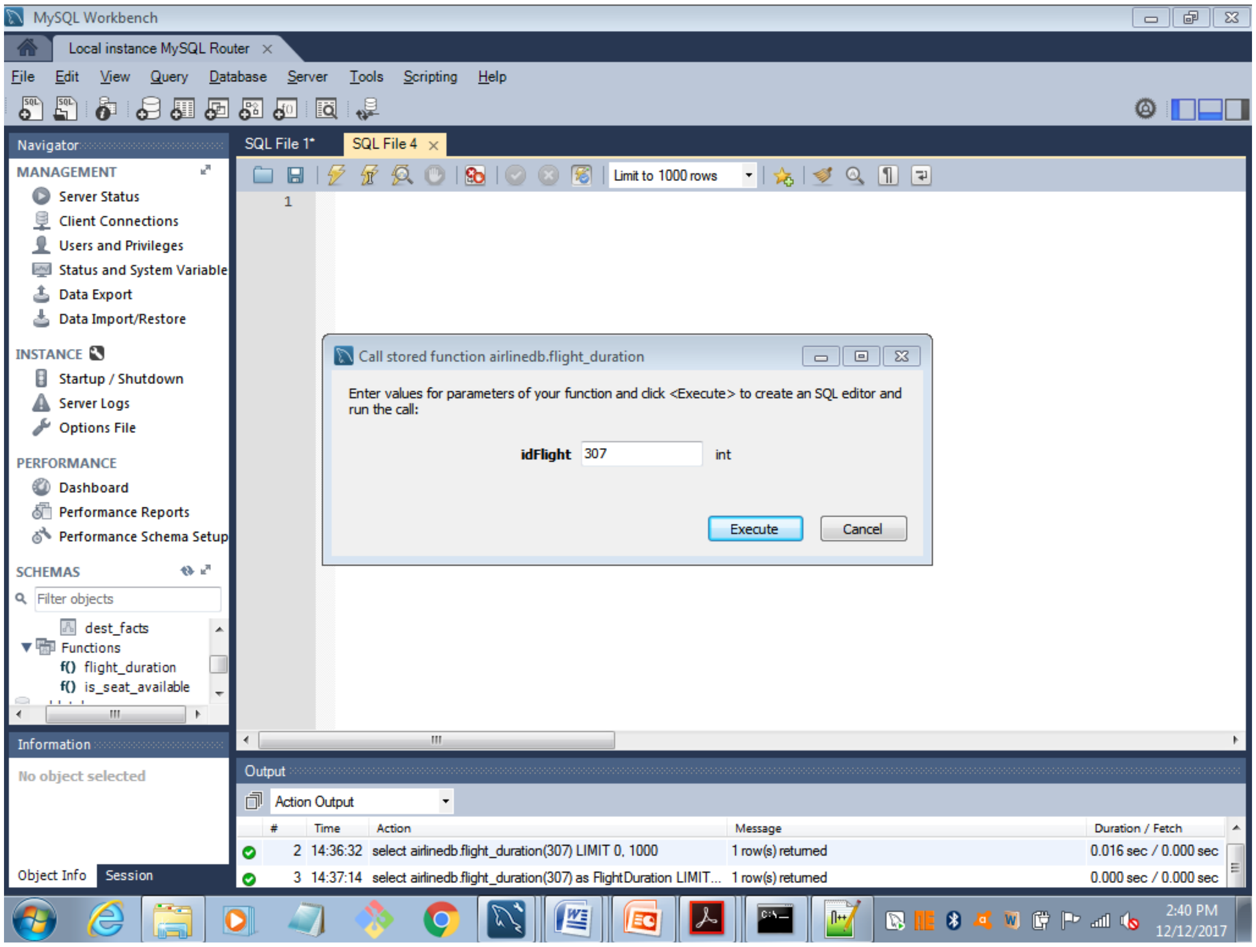
FUNCTIONS:

1) Check the flight duration of a flight through the flight ID

Providing a facility to directly know the flight duration just by giving FlightID as input.

FUCNTION :

```
CREATE DEFINER=`root`@`localhost` FUNCTION `flight_duration`(idFlight int) RETURNS
time

BEGIN

        DECLARE duration time;

  Set duration = (select timediff(arrivaltime,departuretime) as Duration from flights

  where flights.FlightId = idFlight );

return duration;


END
```



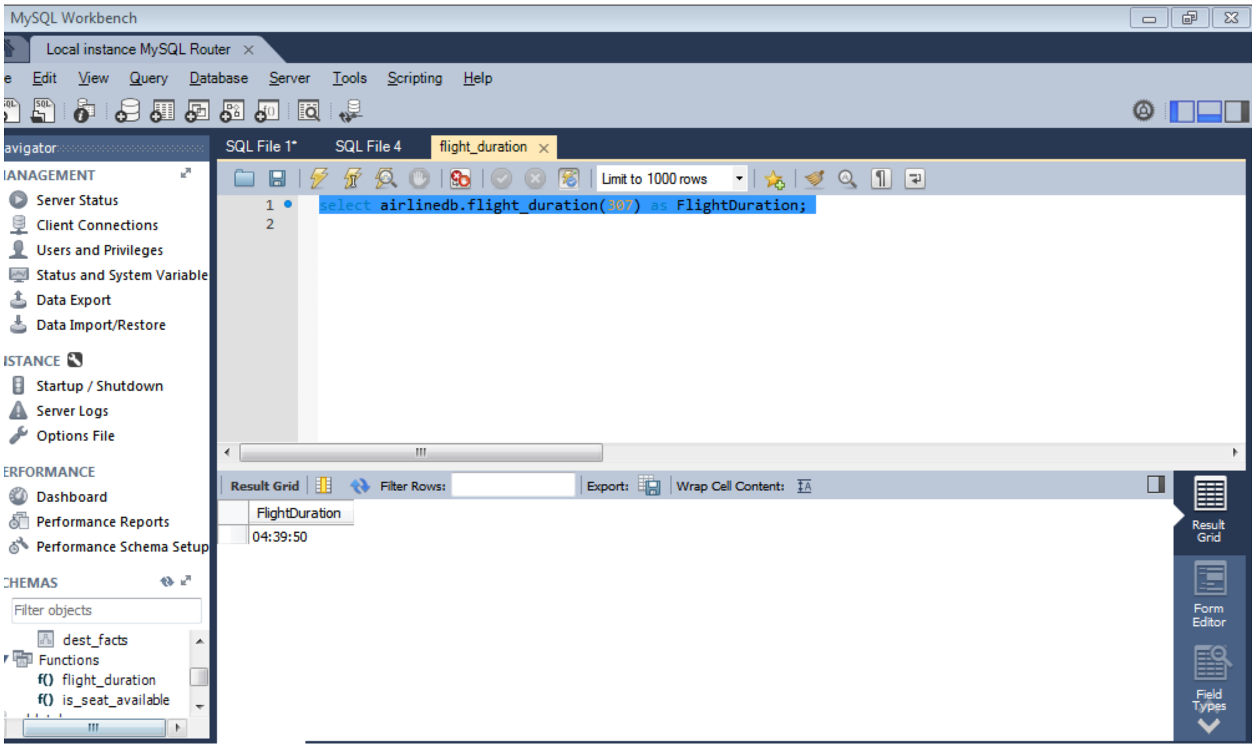
Call stored function airlinedb.flight_duration

Enter values for parameters of your function and click <Execute> to create an SQL editor and run the call:

idFlight 307 int

Execute Cancel

```
#  Time      Action                                                  Message              Duration / Fetch
2  14:36:32  select airlinedb.flight_duration(307) LIMIT 0, 1000     1 row(s) returned    0.016 sec / 0.000 sec
3  14:37:14  select airlinedb.flight_duration(307) as FlightDuration LIMIT...  1 row(s) returned    0.000 sec / 0.000 sec
```



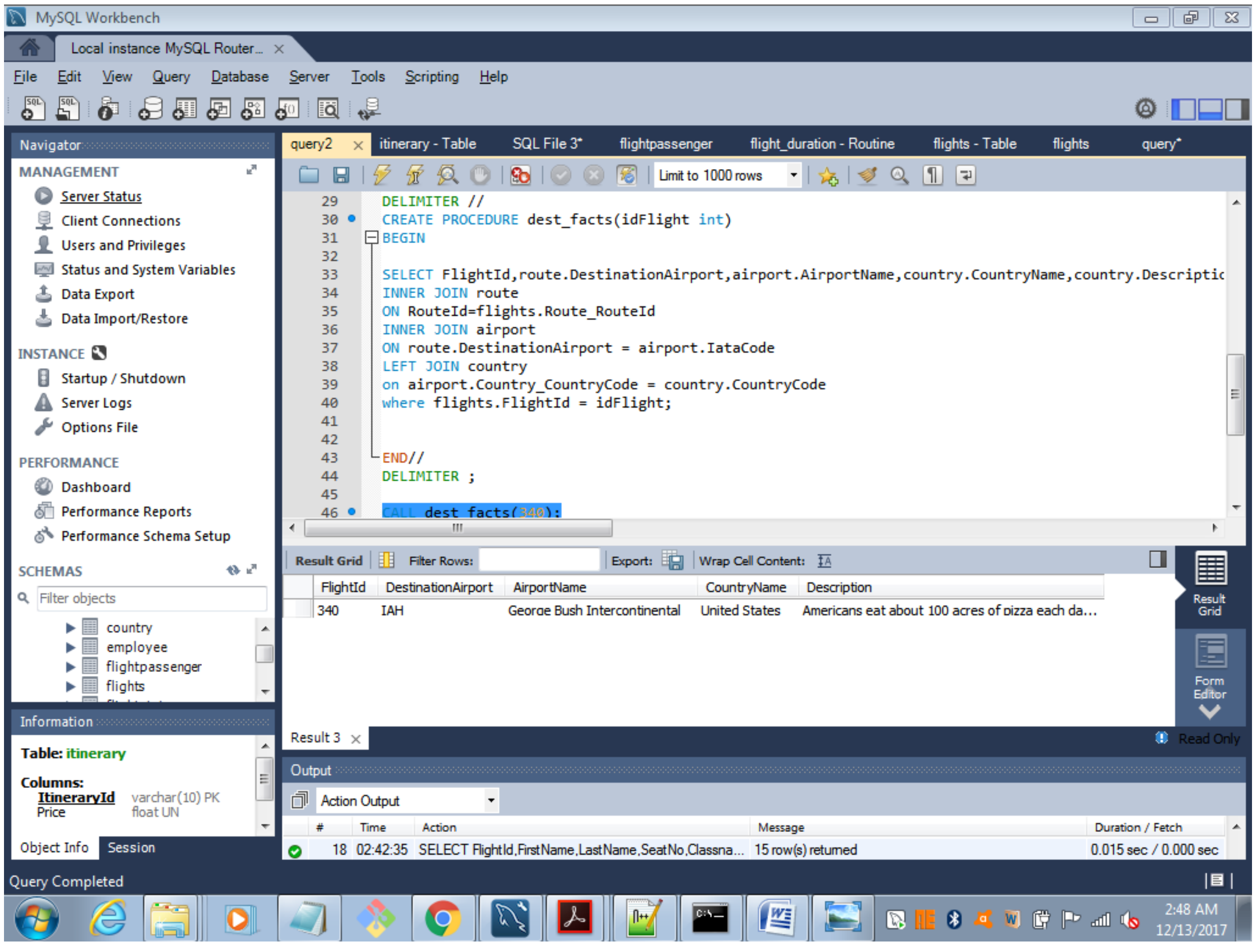
```
select airlinedb.flight_duration(307) as FlightDuration;
```

```
FlightDuration
04:39:50
```

PROCEDURES :

1) To give a quick introduction / description to the passengers about the destination place they are heading to based on the Flight ID.

```
DELIMITER //

CREATE PROCEDURE dest_facts(IN idFlight int)

BEGIN


SELECT
FlightId,route.DestinationAirport,airport.AirportName,country.CountryName,country.Des
cription from Flights

INNER JOIN route

ON RouteId=flights.Route_RouteId

INNER JOIN airport

ON route.DestinationAirport = airport.IataCode

LEFT JOIN country

on airport.Country_CountryCode = country.CountryCode

where flights.FlightId = idFlight;



END//

DELIMITER ;



CALL dest_facts(340);
```



```
DELIMITER //
CREATE PROCEDURE dest_facts(idFlight int)
BEGIN

SELECT FlightId,route.DestinationAirport,airport.AirportName,country.CountryName,country.Descriptic
INNER JOIN route
ON RouteId=flights.Route_RouteId
INNER JOIN airport
ON route.DestinationAirport = airport.IataCode
LEFT JOIN country
on airport.Country_CountryCode = country.CountryCode
where flights.FlightId = idFlight;


END//
DELIMITER ;

CALL dest_facts(340);
```

FlightId	DestinationAirport	AirportName	CountryName	Description
340	IAH	George Bush Intercontinental	United States	Americans eat about 100 acres of pizza each da...

```
#   Time      Action                                              Message             Duration / Fetch
18  02:42:35  SELECT FlightId,FirstName,LastName,SeatNo,Classna...  15 row(s) returned  0.015 sec / 0.000 sec
```

Query Completed

2) To show the analytics where revenue generated by each itinerary

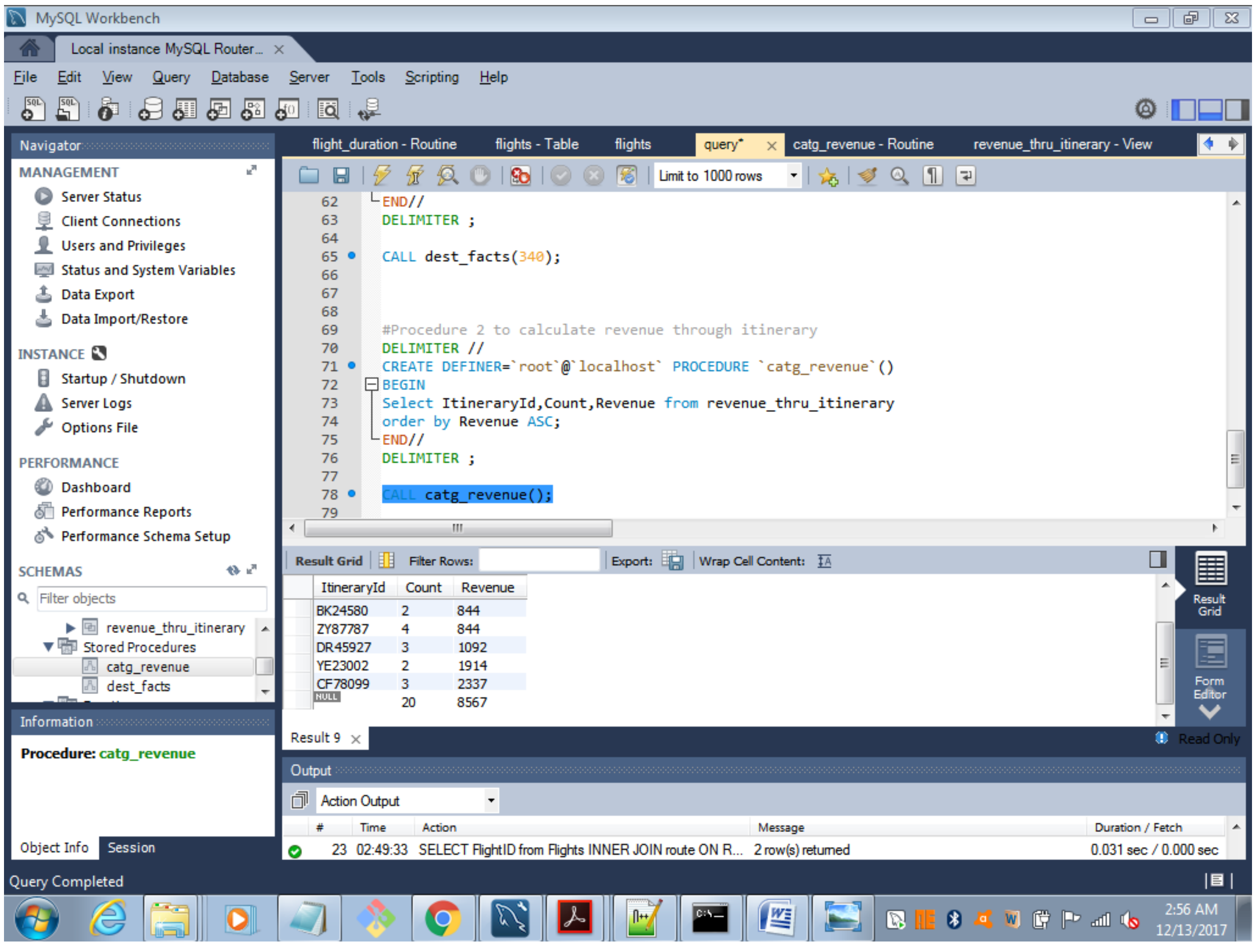
A procedure "catg_revenue()' is called for this and also using Rollup to show the complete revenue after summation of each itinerary revenue.

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `catg_revenue`()

BEGIN

Select ItineraryId,Count,Revenue from revenue_thru_itinerary

order by Revenue ASC;

END
```

VIEW :

This procedure uses a view know as "revenue_thru_itinerary"

```
CREATE

   ALGORITHM = UNDEFINED

   DEFINER = `root`@`localhost`

   SQL SECURITY DEFINER

VIEW `revenue_thru_itinerary` AS

   SELECT

      `i`.`ItineraryId` AS `ItineraryId`,

      COUNT(`i`.`ItineraryId`) AS `Count`,

      SUM(`i`.`Price`) AS `Revenue`

   FROM

      (`flightpassenger` `fp`

      JOIN `itinerary` `i` ON ((`fp`.`Itinerary_ItineraryId` = `i`.`ItineraryId`)))

   GROUP BY `i`.`ItineraryId` WITH ROLLUP
```



Procedure: catg_revenue

```
END//
DELIMITER ;

CALL dest_facts(340);



#Procedure 2 to calculate revenue through itinerary
DELIMITER //
CREATE DEFINER=`root`@`localhost` PROCEDURE `catg_revenue`()
BEGIN
Select ItineraryId,Count,Revenue from revenue_thru_itinerary
order by Revenue ASC;
END//
DELIMITER ;

CALL catg_revenue();
```

```
ItineraryId  Count  Revenue
BK24580      2      844
ZY87787      4      844
DR45927      3      1092
YE23002      2      1914
CF78099      3      2337
NULL         20     8567
```

```
#    Time      Action                                                Message              Duration / Fetch
23   02:49:33  SELECT FlightID from Flights INNER JOIN route ON R...  2 row(s) returned    0.031 sec / 0.000 sec
```

VIEWS :

1) To calculate revenue through itinerary

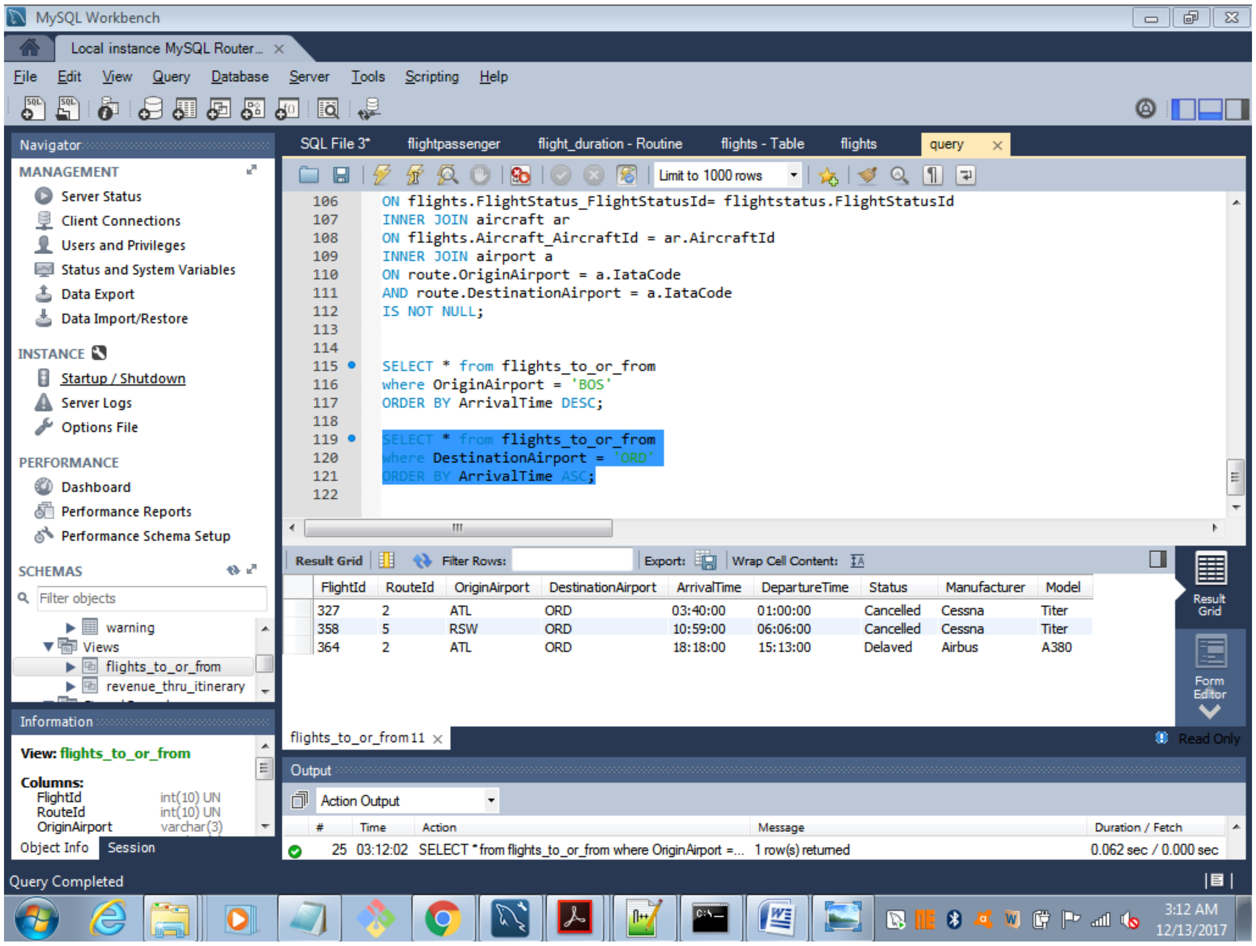
```
CREATE  VIEW `revenue_thru_itinerary` AS
   SELECT
      `i`.`ItineraryId` AS `ItineraryId`,
      COUNT(`i`.`ItineraryId`) AS `Count`,
      SUM(`i`.`Price`) AS `Revenue`
   FROM
      (`flightpassenger` `fp`
      JOIN `itinerary` `i` ON ((`fp`.`Itinerary_ItineraryId` = `i`.`ItineraryId`)))
   GROUP BY `i`.`ItineraryId` WITH ROLLUP;



SELECT * from revenue_thru_itinerary;
```

2) To display all the flights to or from a place and also ordering the results through arrival/departure time.

```
CREATE VIEW flights_to_or_from AS

SELECT flights.FlightId,route.RouteId, route.OriginAirport, route.DestinationAirport
,flights.ArrivalTime, flights.DepartureTime, flightstatus.Status,ar.Manufacturer,ar.Model

FROM Flights

INNER JOIN route

ON flights.Route_RouteId = route.RouteId

INNER JOIN flightstatus

ON flights.FlightStatus_FlightStatusId= flightstatus.FlightStatusId

INNER JOIN aircraft ar

ON flights.Aircraft_AircraftId = ar.AircraftId

INNER JOIN airport a

ON route.OriginAirport = a.IataCode

AND route.DestinationAirport = a.IataCode

IS NOT NULL;
```

```
SELECT * from flights_to_or_from

where OriginAirport = 'BOS'

ORDER BY ArrivalTime DESC;
```

```
SELECT * from flights_to_or_from

where DestinationAirport = 'ORD'

ORDER BY ArrivalTime ASC;
```



```
ON flights.FlightStatus_FlightStatusId= flightstatus.FlightStatusId
INNER JOIN aircraft ar
ON flights.Aircraft_AircraftId = ar.AircraftId
INNER JOIN airport a
ON route.OriginAirport = a.IataCode
AND route.DestinationAirport = a.IataCode
IS NOT NULL;


SELECT * from flights_to_or_from
where OriginAirport = 'BOS'
ORDER BY ArrivalTime DESC;

SELECT * from flights_to_or_from
where DestinationAirport = 'ORD'
ORDER BY ArrivalTime ASC;

```

FlightId	RouteId	OriginAirport	DestinationAirport	ArrivalTime	DepartureTime	Status	Manufacturer	Model
327	2	ATL	ORD	03:40:00	01:00:00	Cancelled	Cessna	Titer
358	5	RSW	ORD	10:59:00	06:06:00	Cancelled	Cessna	Titer
364	2	ATL	ORD	18:18:00	15:13:00	Delayed	Airbus	A380

View: flights_to_or_from

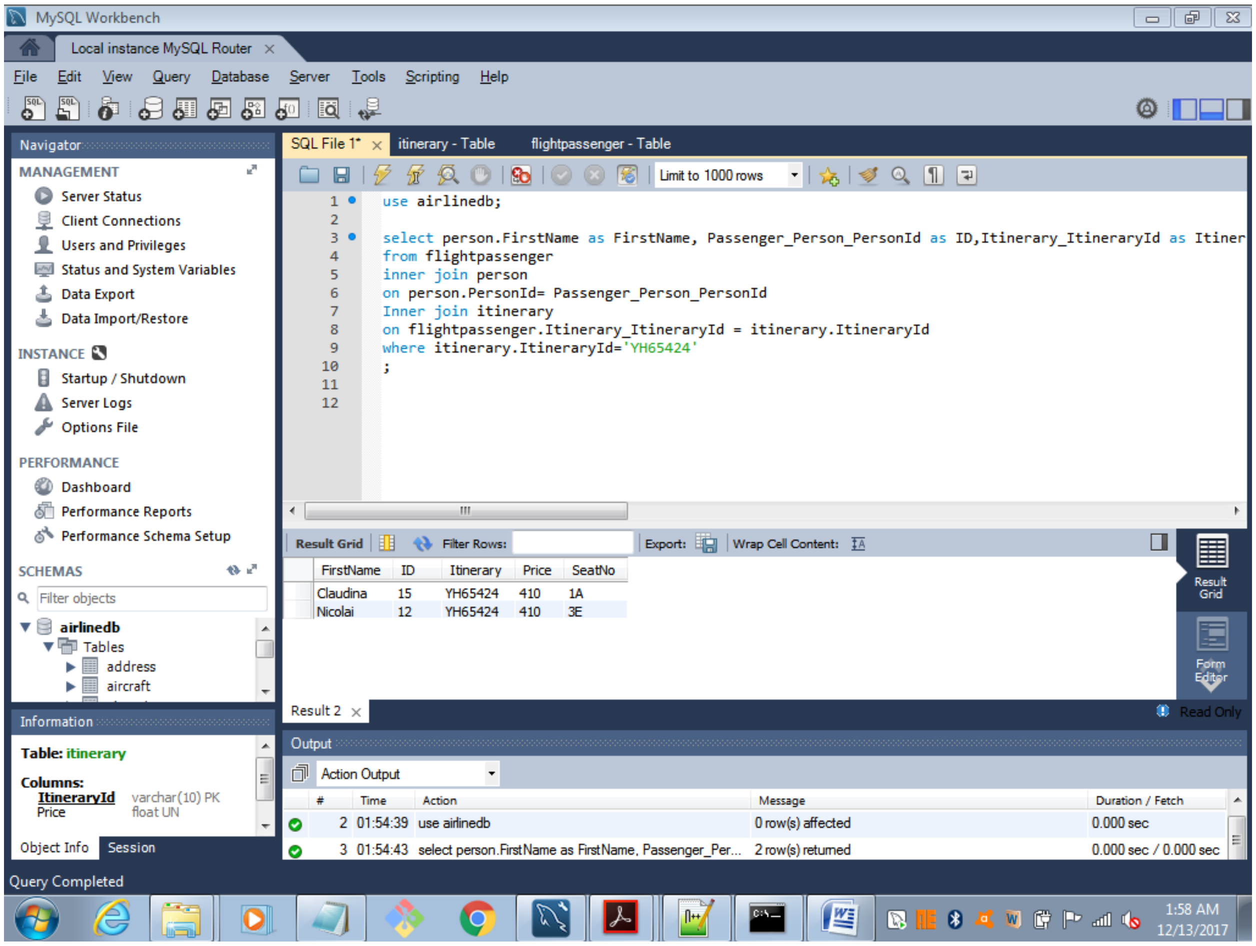
Columns:

FlightId	int(10) UN
RouteId	int(10) UN
OriginAirport	varchar(3)

#	Time	Action	Message	Duration / Fetch
25	03:12:02	SELECT * from flights_to_or_from where OriginAirport =...	1 row(s) returned	0.062 sec / 0.000 sec

QUERIES :

1) To find passengers with a specific itinerary



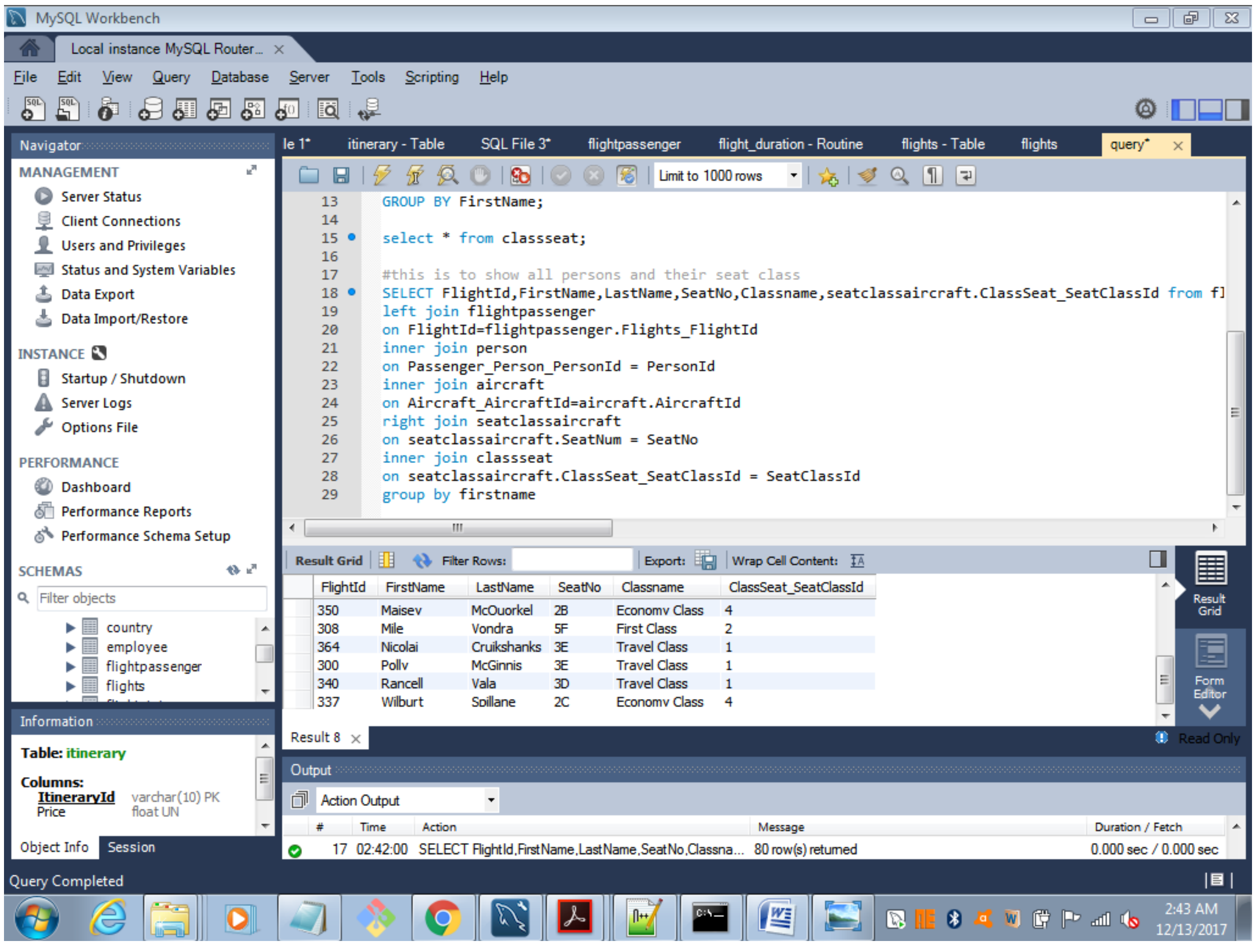
```
use airlinedb;

select person.FirstName as FirstName, Passenger_Person_PersonId as ID,Itinerary_ItineraryId as Itiner
from flightpassenger
inner join person
on person.PersonId= Passenger_Person_PersonId
Inner join itinerary
on flightpassenger.Itinerary_ItineraryId = itinerary.ItineraryId
where itinerary.ItineraryId='YH65424'
;
```

FirstName	ID	Itinerary	Price	SeatNo
Claudina	15	YH65424	410	1A
Nicolai	12	YH65424	410	3E

```
#  Time      Action                                        Message              Duration / Fetch
2  01:54:39  use airlinedb                                 0 row(s) affected    0.000 sec
3  01:54:43  select person.FirstName as FirstName, Passenger_Per...  2 row(s) returned    0.000 sec / 0.000 sec
```

Query Completed

2) To display all passengers and their seat class with seat number



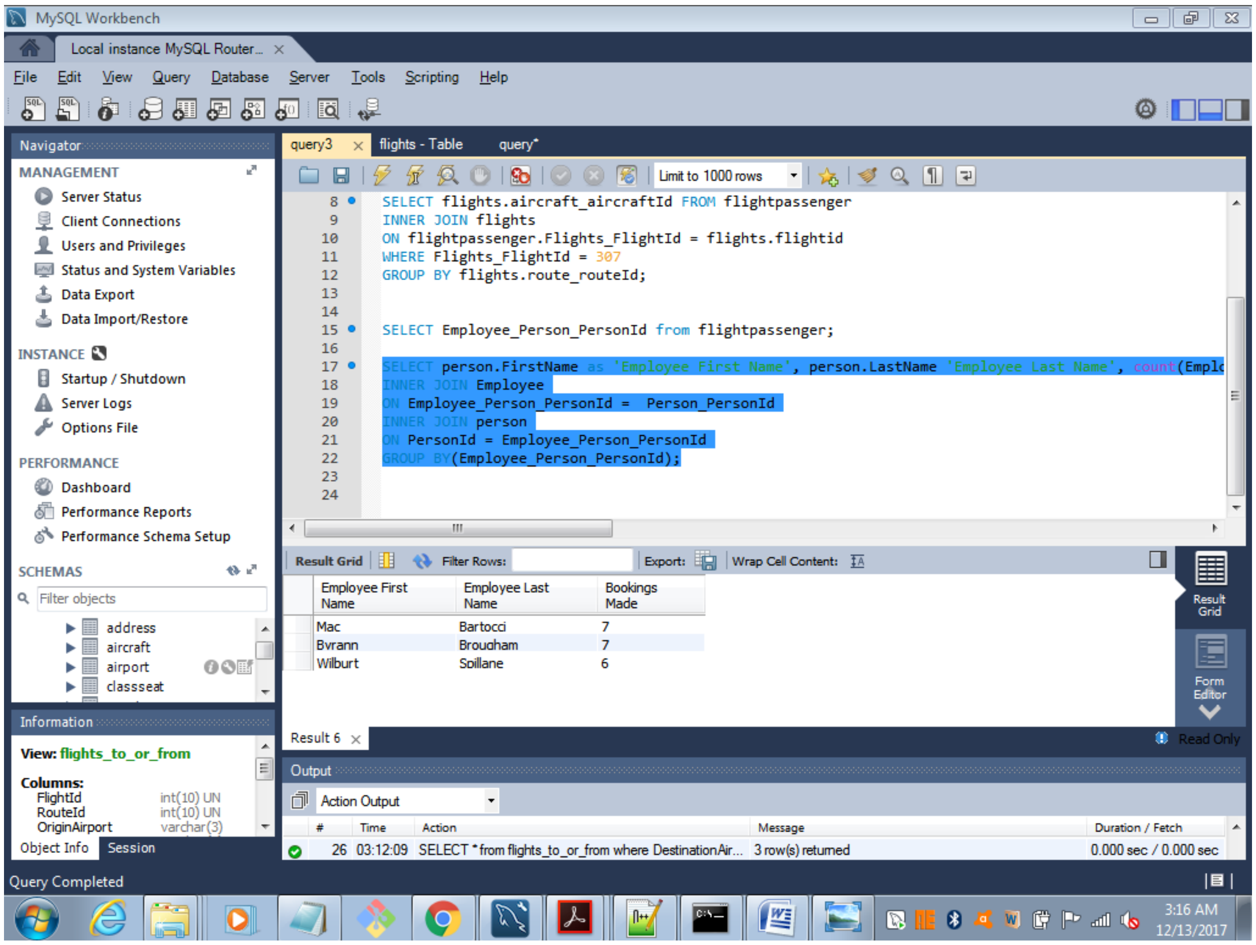
```
GROUP BY FirstName;

select * from classseat;

#this is to show all persons and their seat class
SELECT FlightId,FirstName,LastName,SeatNo,Classname,seatclassaircraft.ClassSeat_SeatClassId from fl
left join flightpassenger
on FlightId=flightpassenger.Flights_FlightId
inner join person
on Passenger_Person_PersonId = PersonId
inner join aircraft
on Aircraft_AircraftId=aircraft.AircraftId
right join seatclassaircraft
on seatclassaircraft.SeatNum = SeatNo
inner join classseat
on seatclassaircraft.ClassSeat_SeatClassId = SeatClassId
group by firstname
```

FlightId	FirstName	LastName	SeatNo	Classname	ClassSeat_SeatClassId
350	Maisev	McOuorkel	2B	Economv Class	4
308	Mile	Vondra	5F	First Class	2
364	Nicolai	Cruikshanks	3E	Travel Class	1
300	Pollv	McGinnis	3E	Travel Class	1
340	Rancell	Vala	3D	Travel Class	1
337	Wilburt	Spillane	2C	Economv Class	4

```
#   Time      Action                                               Message               Duration / Fetch
17  02:42:00  SELECT FlightId,FirstName,LastName,SeatNo,Classna...  80 row(s) returned   0.000 sec / 0.000 sec
```

Query Completed

3) To display the number of bookings made by a specific employee



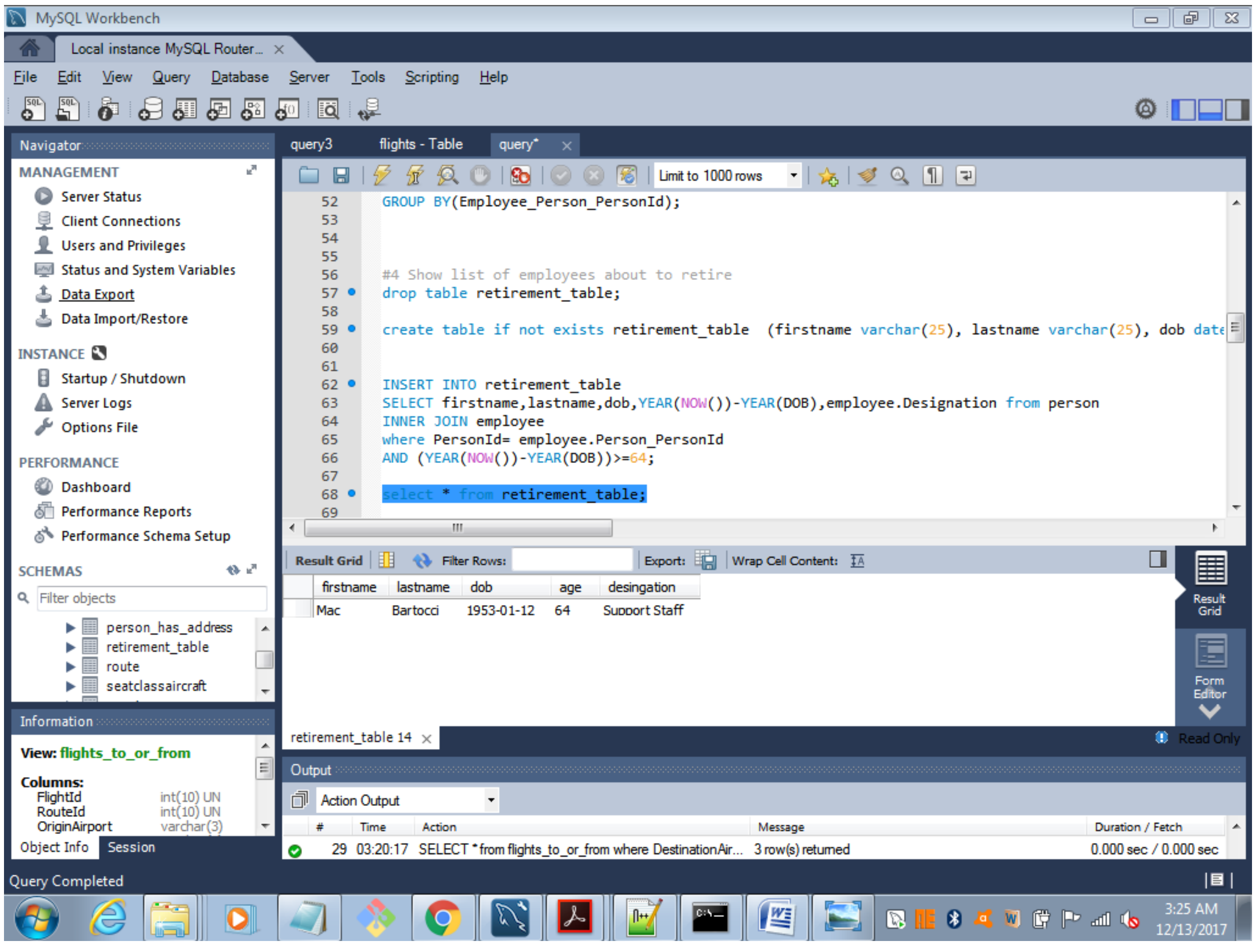
```sql
SELECT flights.aircraft_aircraftId FROM flightpassenger
INNER JOIN flights
ON flightpassenger.Flights_FlightId = flights.flightid
WHERE Flights_FlightId = 307
GROUP BY flights.route_routeId;


SELECT Employee_Person_PersonId from flightpassenger;

SELECT person.FirstName as 'Employee First Name', person.LastName 'Employee Last Name', count(Emplo
INNER JOIN Employee
ON Employee_Person_PersonId =  Person_PersonId
INNER JOIN person
ON PersonId = Employee_Person_PersonId
GROUP BY(Employee_Person_PersonId);
```

Employee First Name	Employee Last Name	Bookings Made
Mac	Bartocci	7
Byrann	Brougham	7
Wilburt	Spillane	6

```
#   Time      Action                                              Message            Duration / Fetch
26  03:12:09  SELECT * from flights_to_or_from where DestinationAir...  3 row(s) returned  0.000 sec / 0.000 sec
```

Query Completed

4) To display the list of employees who are about to get retired



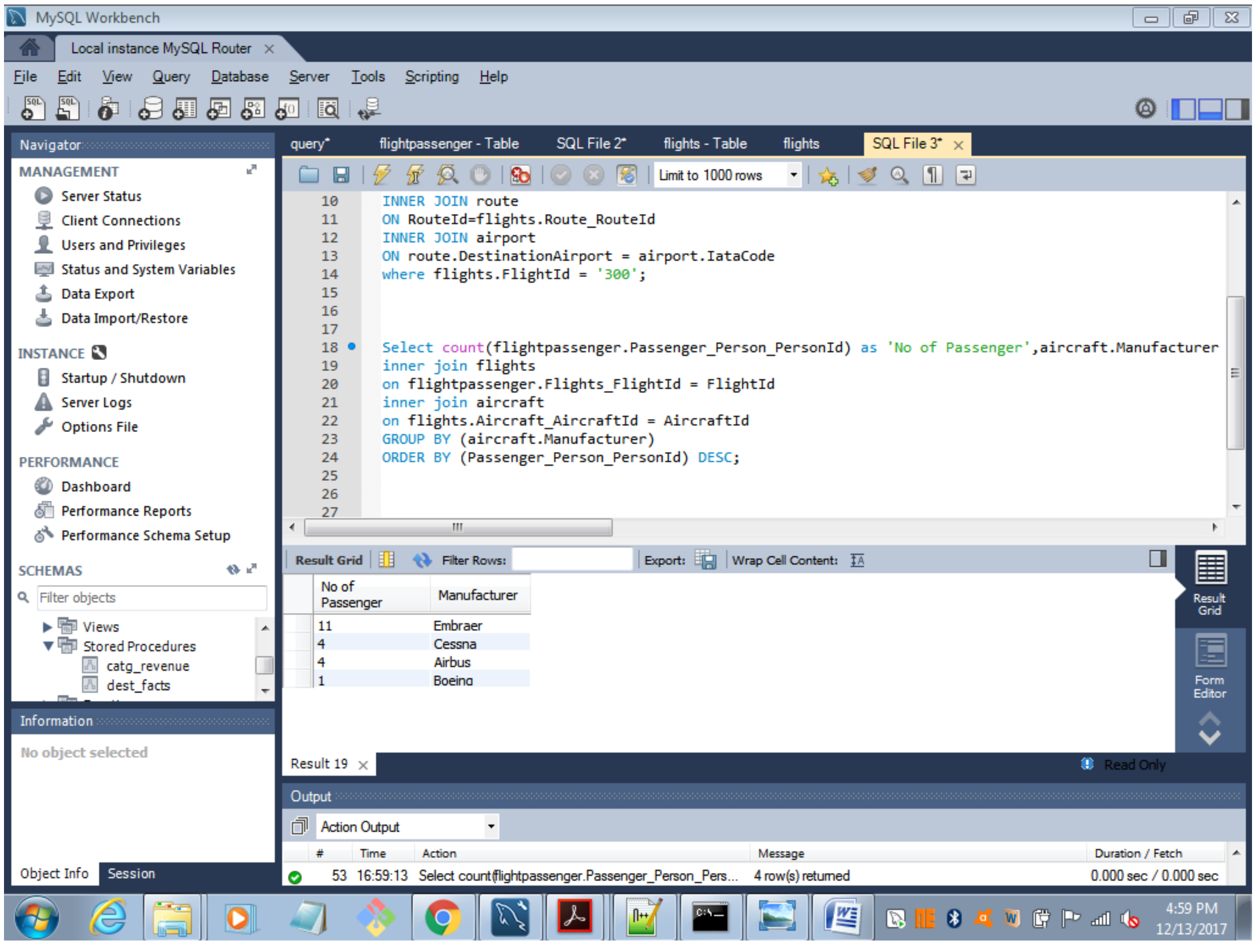
```
GROUP BY(Employee_Person_PersonId);



#4 Show list of employees about to retire
drop table retirement_table;

create table if not exists retirement_table  (firstname varchar(25), lastname varchar(25), dob date


INSERT INTO retirement_table
SELECT firstname,lastname,dob,YEAR(NOW())-YEAR(DOB),employee.Designation from person
INNER JOIN employee
where PersonId= employee.Person_PersonId
AND (YEAR(NOW())-YEAR(DOB))>=64;

select * from retirement_table;

```

firstname	lastname	dob	age	desingation
Mac	Bartocci	1953-01-12	64	Support Staff

```
#   Time      Action                                             Message            Duration / Fetch
29  03:20:17  SELECT * from flights_to_or_from where DestinationAir...  3 row(s) returned  0.000 sec / 0.000 sec
```

Query Completed

5) To know which aircraft is being preferred by more number of passengers



```
INNER JOIN route
ON RouteId=flights.Route_RouteId
INNER JOIN airport
ON route.DestinationAirport = airport.IataCode
where flights.FlightId = '300';



Select count(flightpassenger.Passenger_Person_PersonId) as 'No of Passenger',aircraft.Manufacturer
inner join flights
on flightpassenger.Flights_FlightId = FlightId
inner join aircraft
on flights.Aircraft_AircraftId = AircraftId
GROUP BY (aircraft.Manufacturer)
ORDER BY (Passenger_Person_PersonId) DESC;
```

No of Passenger	Manufacturer
11	Embraer
4	Cessna
4	Airbus
1	Boeing

#	Time	Action	Message	Duration / Fetch
53	16:59:13	Select count(flightpassenger.Passenger_Person_Pers...	4 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench
Local instance MySQL Router
File Edit View Query Database Server Tools Scripting Help
query* flightpassenger - Table SQL File 2* flights - Table flights SQL File 3*
Limit to 1000 rows
Result 19
Read Only
Output
Action Output
4:59 PM
12/13/2017