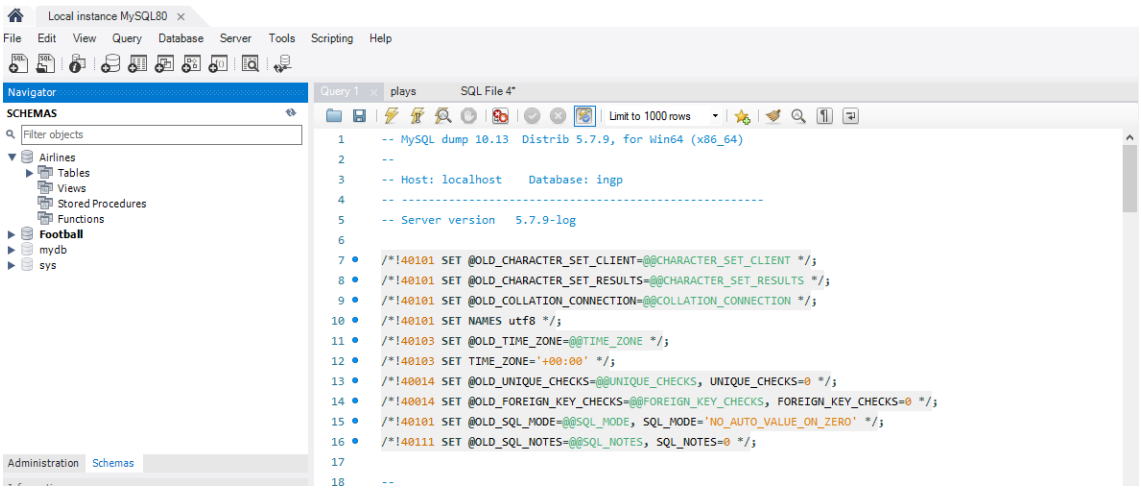
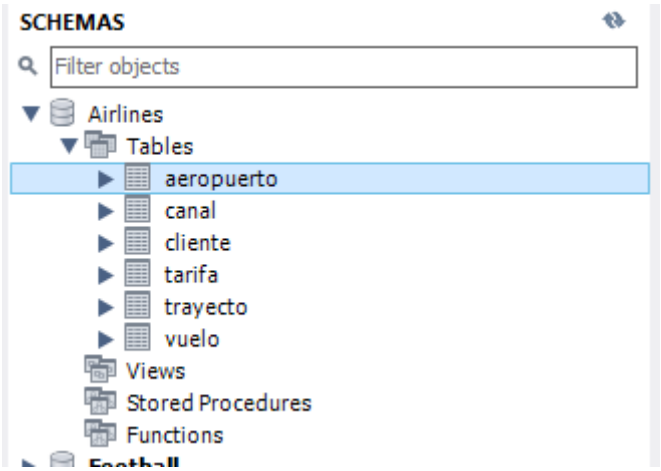
Task 2. Multidimensional Implementation

In this task I am going to show how I have implemented the multidimensional design of the Airlines database.

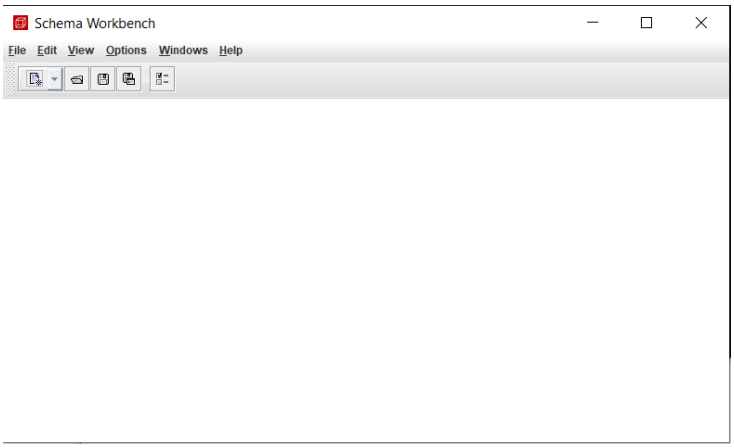
First, I have loaded the script given in campus virtual into the Airlines connection that I have created.



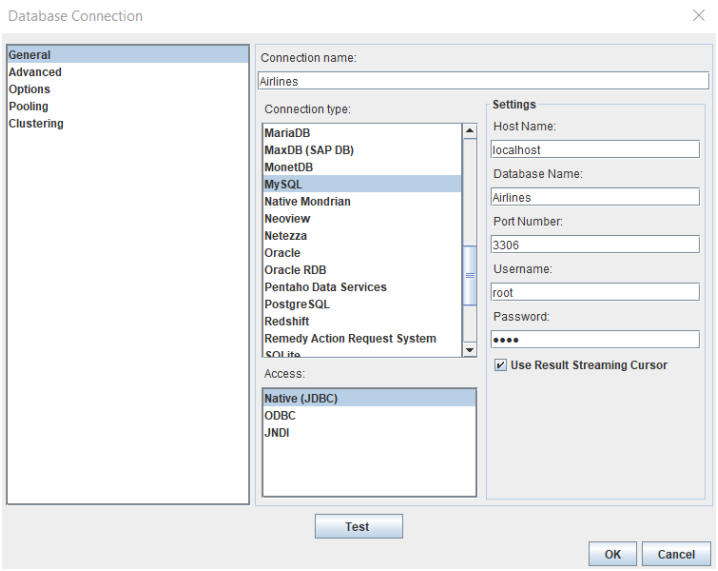
After deploying it the tables appear in the database.



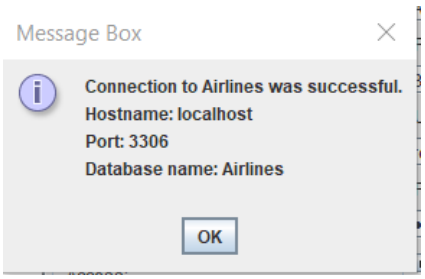
Now that the database is ready, I am going to open schema-workbench application to connect to the database and start my multidimensional design.



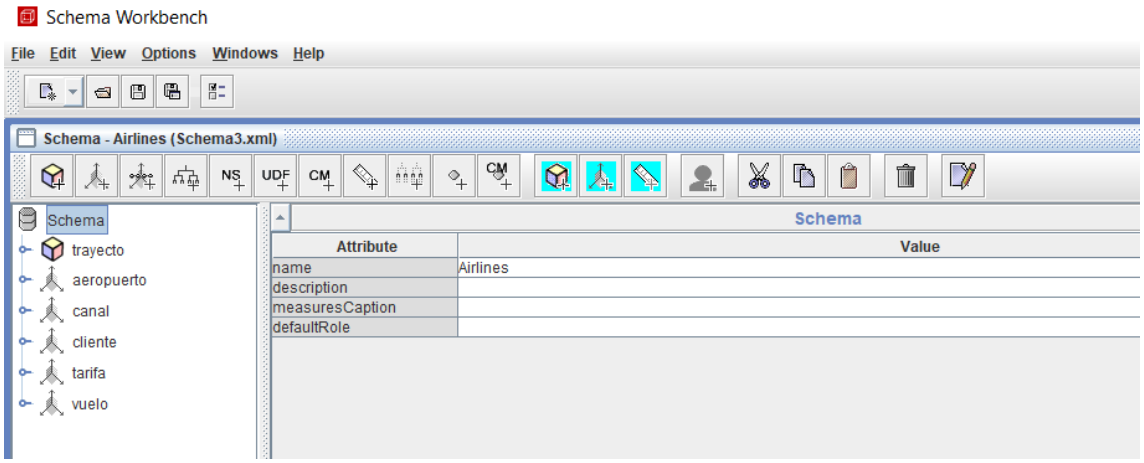
Once the program is opened, we have to connect to our database. We do that by clicking on options -> connection. In the windows that appears we have to put our database login data in order for the connection to work.



If we click on test we can see that the connection is successful. Now we can click on 'ok'.

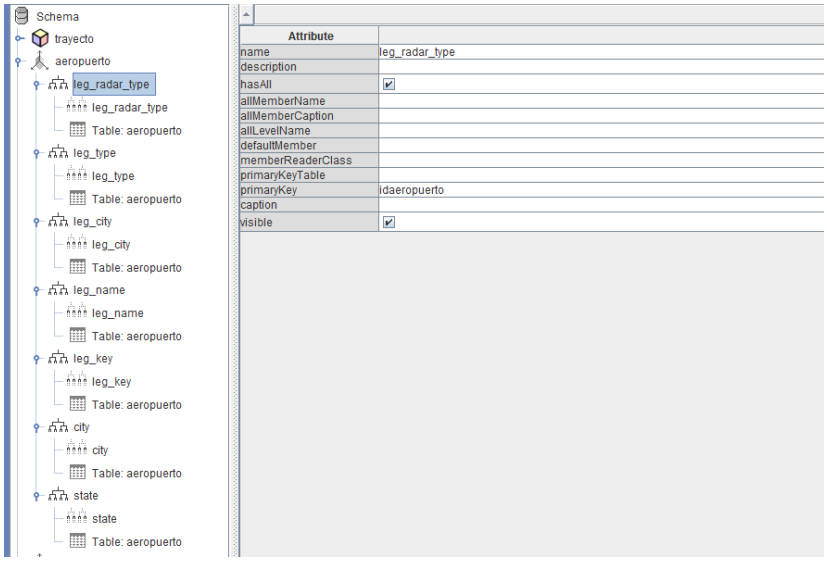


Now I am going to load the scheme I have implemented.

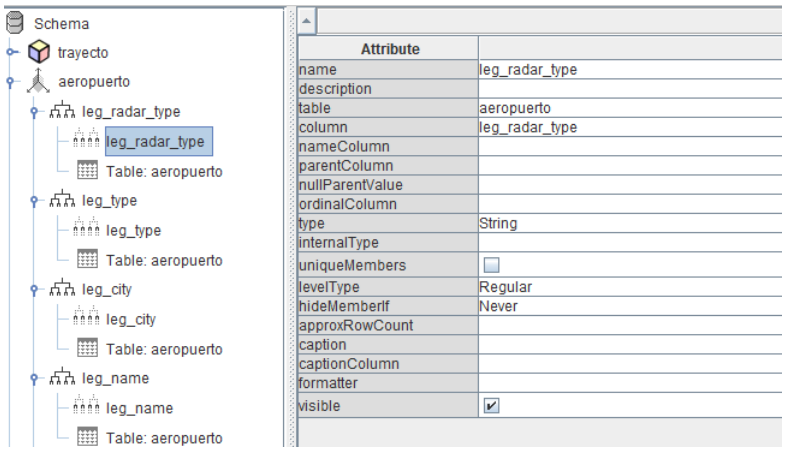


Here we can see the Airlines schema. It has 'trayecto', which is the fact table, as the cube of the schema and one dimension for each table in the Airlines database.

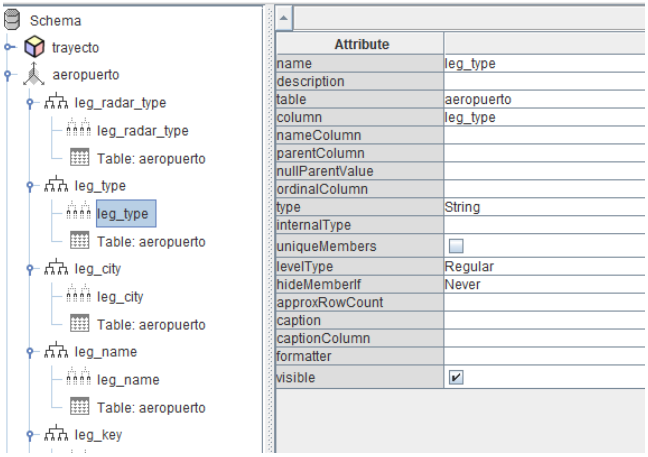
For the Airport dimension we have the hierarchies defined in task one this hierarchies all have ''idaeropuerto" as primary key.



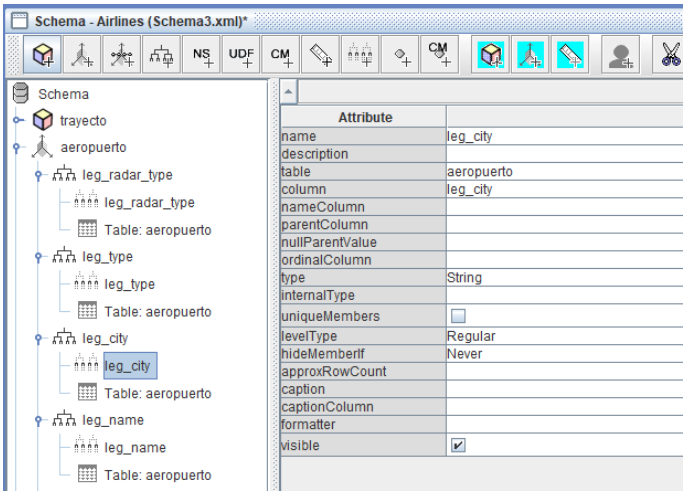
Inside the hierarchies we find the levels of each hierarchy in 'leg_radar_type' we have the column from 'aeropuerto' that represents it.



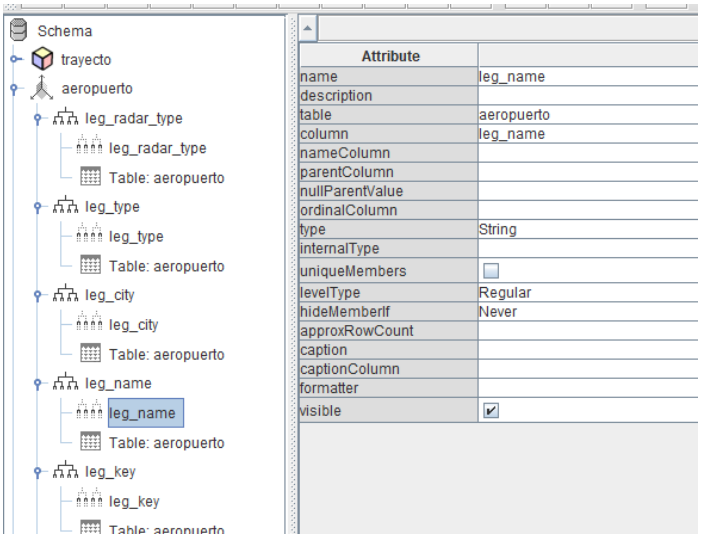
For ‘leg_type’



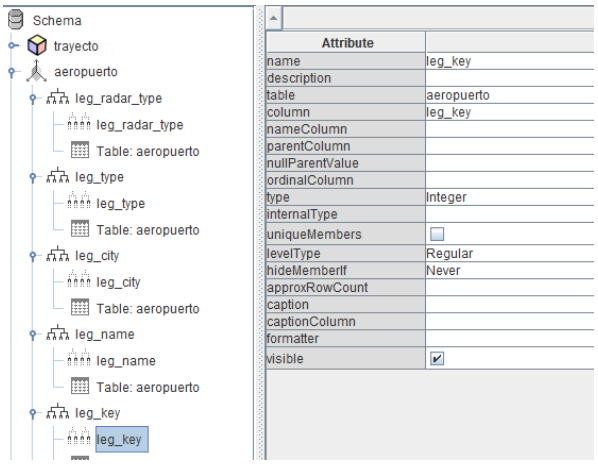
For ‘leg_city’



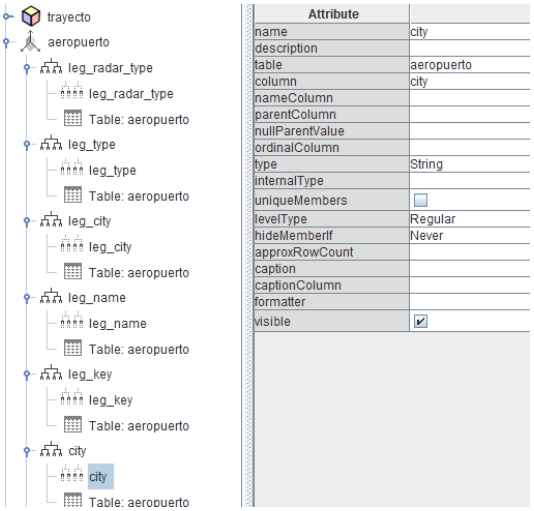
For ‘leg_name’



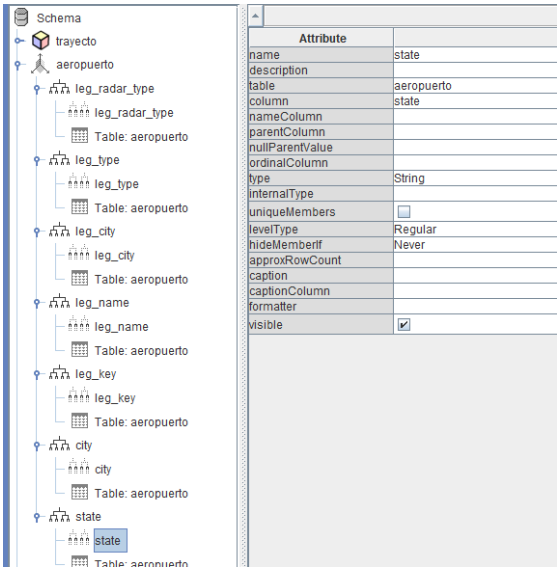
For ‘leg_key’



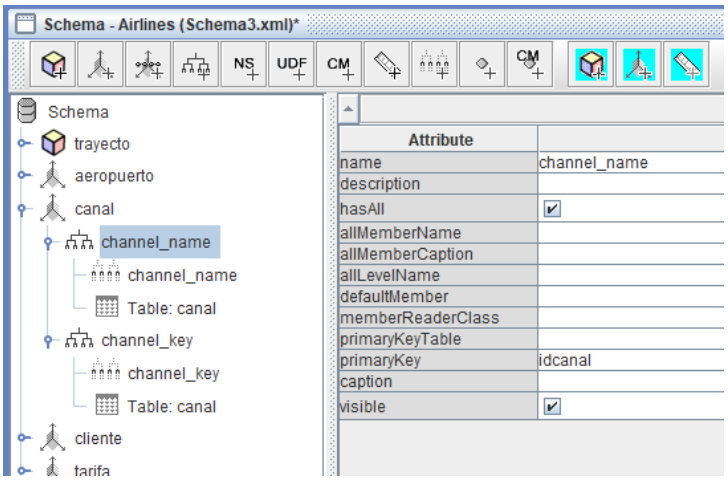
For ‘’city



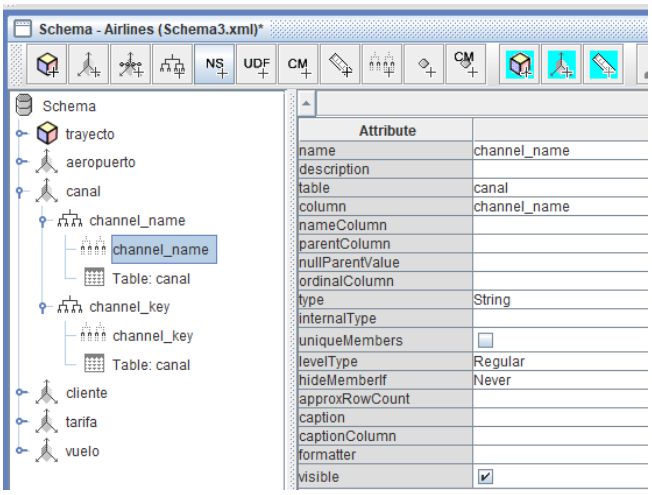
For ‘state’



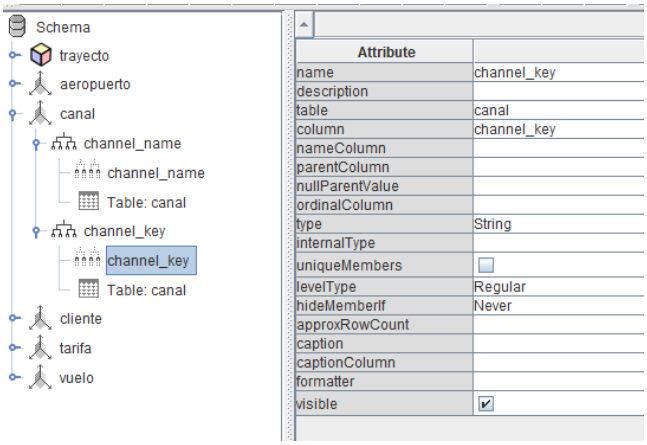
In Canal dimension we have to hierarchies one for the ‘channel_name’ and another one for ‘channel_key’. Both of them only have one level.



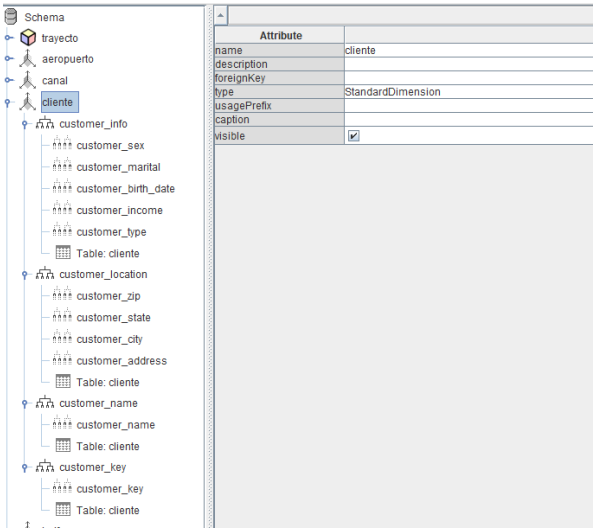
For the ‘channel_name’ we have



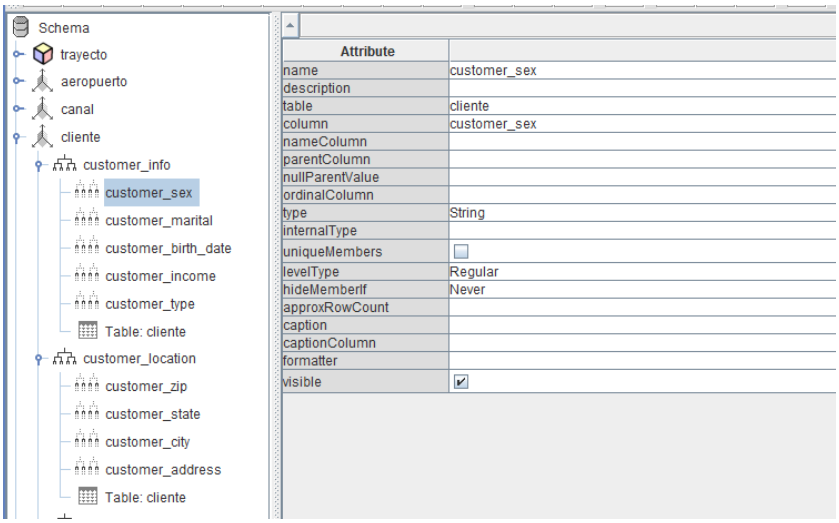
And for the ‘channel_key’



For the ‘Cliente’ dimension I have done the same.

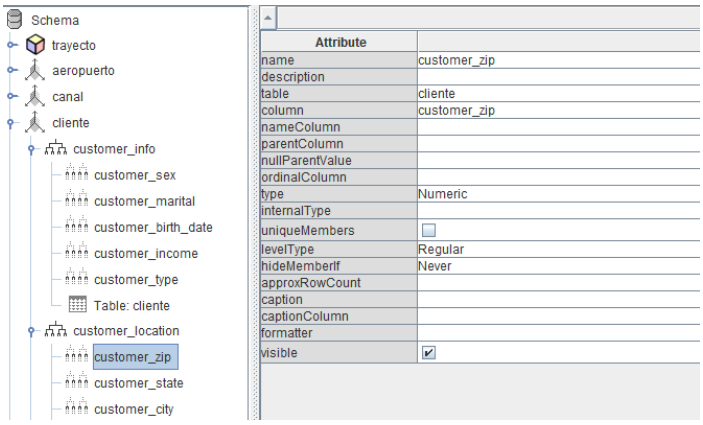


Here we have the ‘customer_info’ hierarchy who has the ‘idcliente’ as primary key and inside we have the information level, ‘customer_sex’ that has the ‘customer_sex’ column in cliente table.

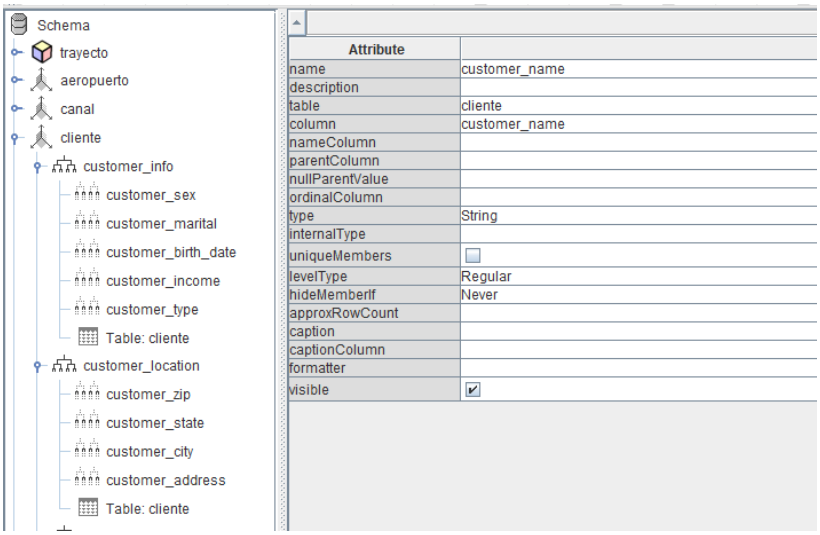


And the rest levels are done in the same way. In ‘customer_martial’ I have assigned the ‘customer_martial’ column etc…

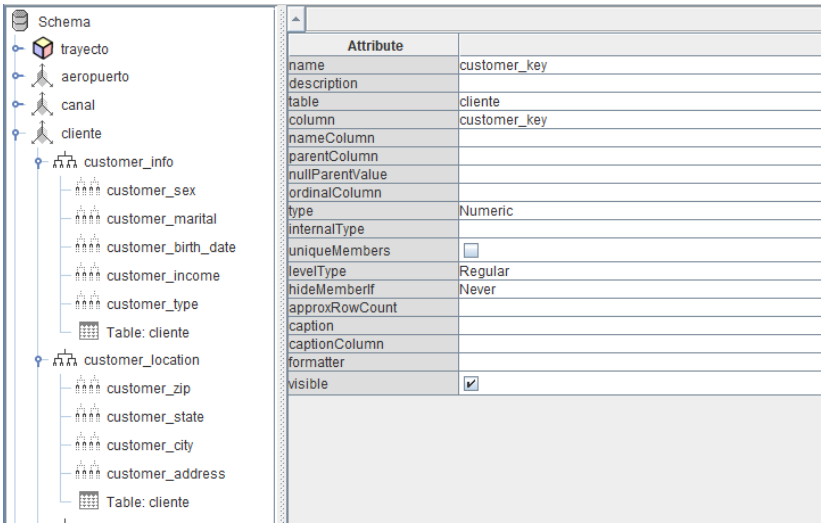
In customer location the same thing. Each level of the hierarchy has assigned the column it represents.



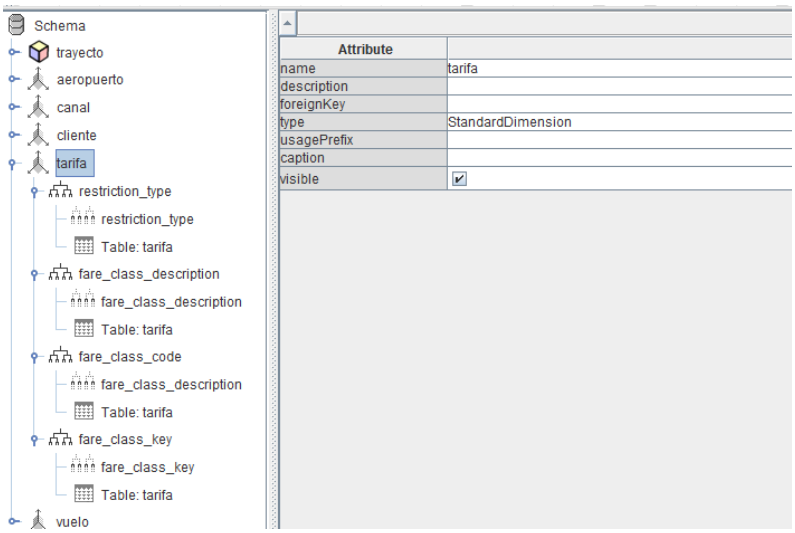
In ‘customer_name’ we have the following thing.



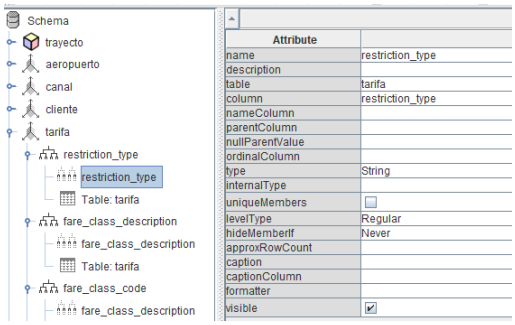
And in ‘customer_key’ this.

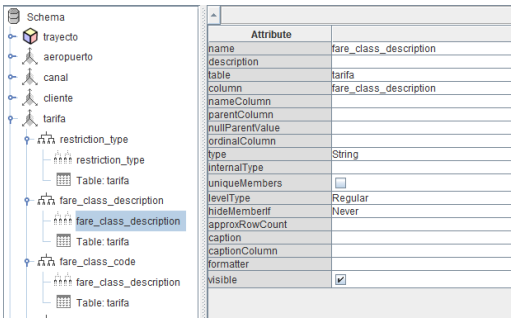


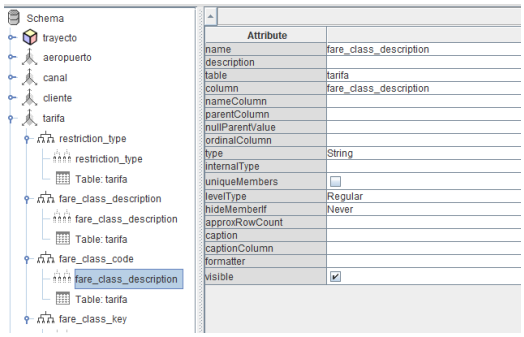
For the ‘tarifa’ dimension we find a hierarchy for each attribute of the table.

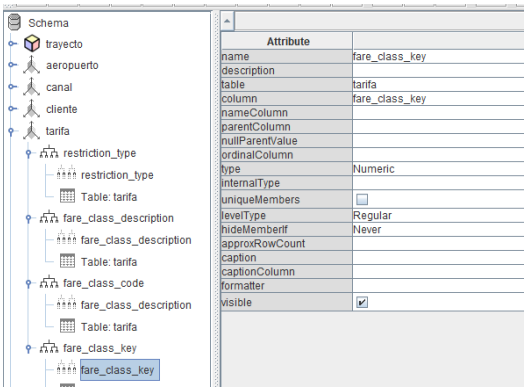


It has been done as the ones explained before



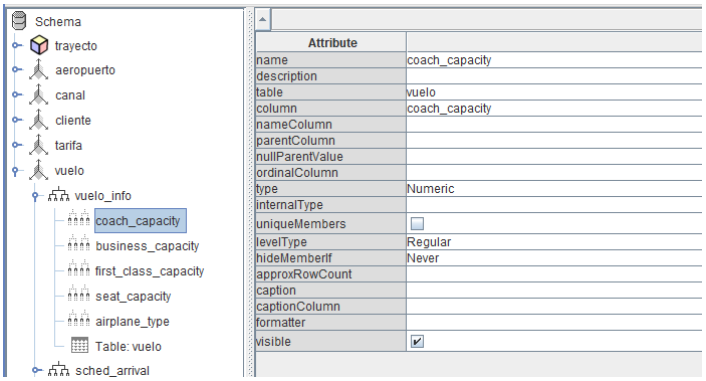






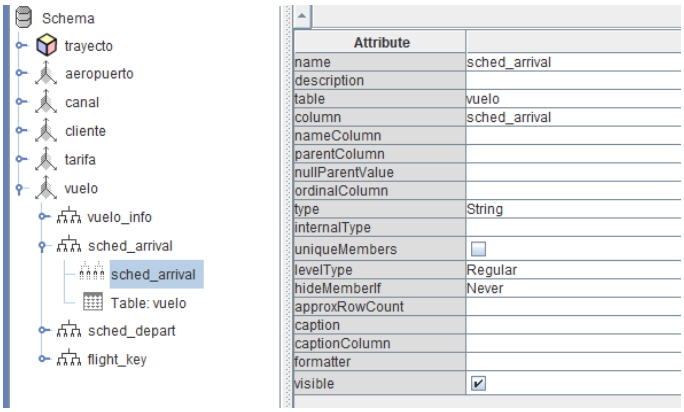
The last dimension is ‘vuelo’.

In this dimension we find a hierarchy for the flight information that contains all the information about the flight. For example, the coach capacity.

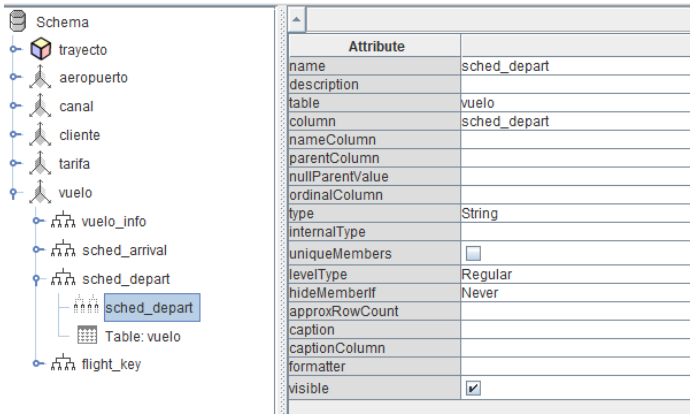


All the levels are designed the same way.

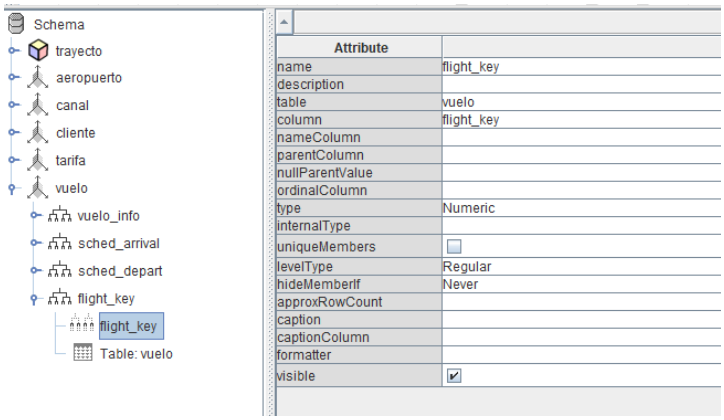
The next hierarchy is the arrival.



The Depart

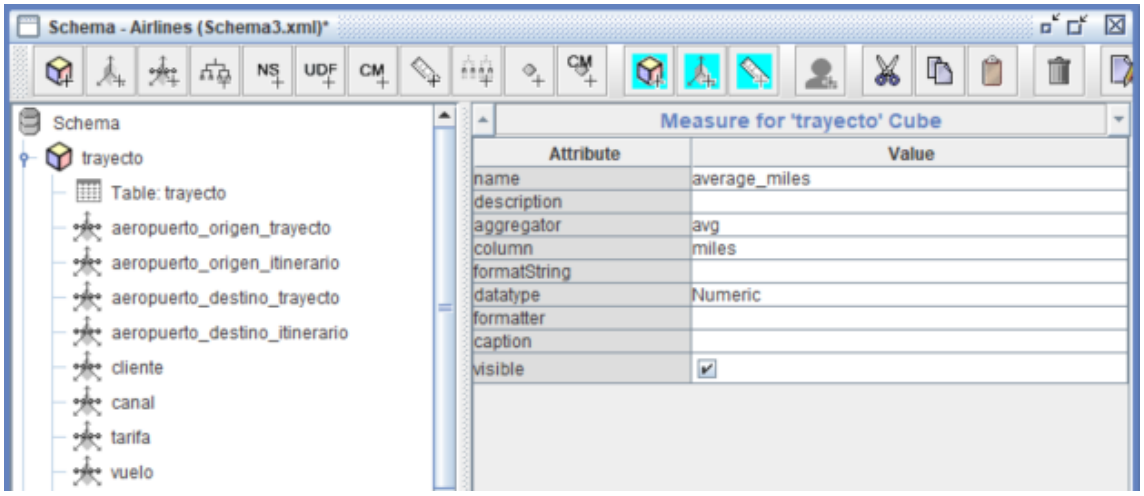


And the flight key



Once the dimensions are clear we can start by explaining the cube.

In the cube we find the dimension usages of our dimensions.



These are ‘aeropuerto_origen_trayceto’ whose source is airport, and the foreign key is ‘aeropuerto_origen_trayecto’.

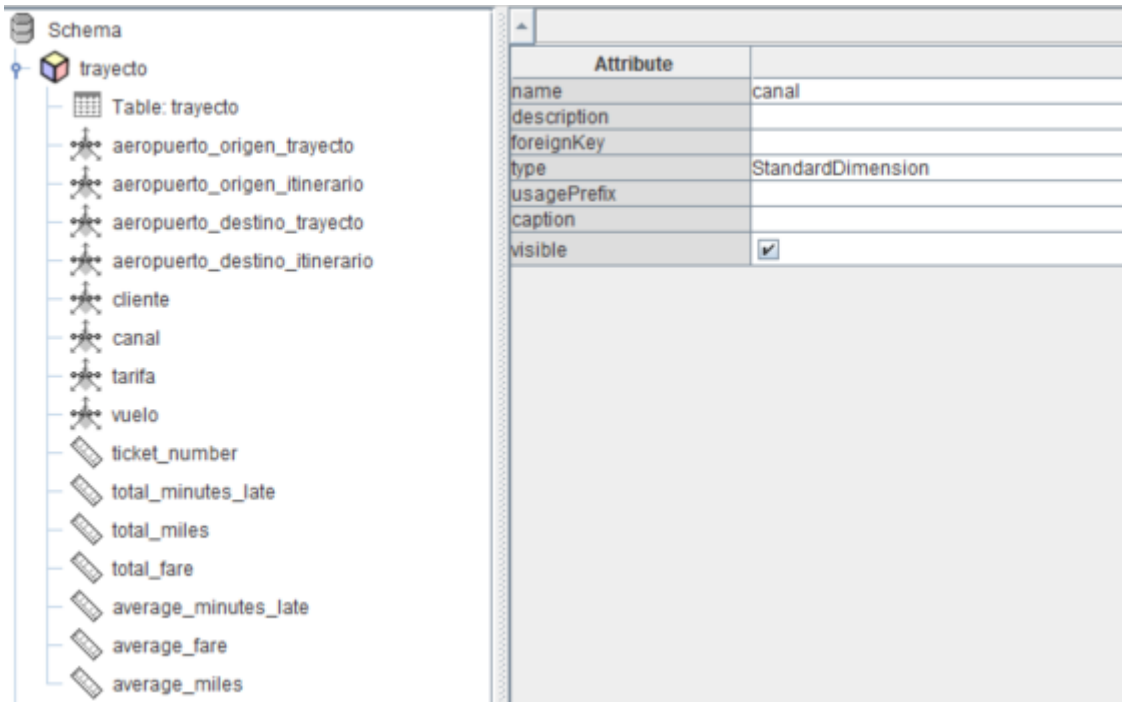
‘Aeropuerto_origen_itinerario’ whose source is airport, and the foreign key is ‘aeropuerto_origen_itinerario’.

We have ‘aeropuerto_destino_trayceto’ whose source is airport, and the foreign key is ‘aeropuerto_destino_trayecto’.

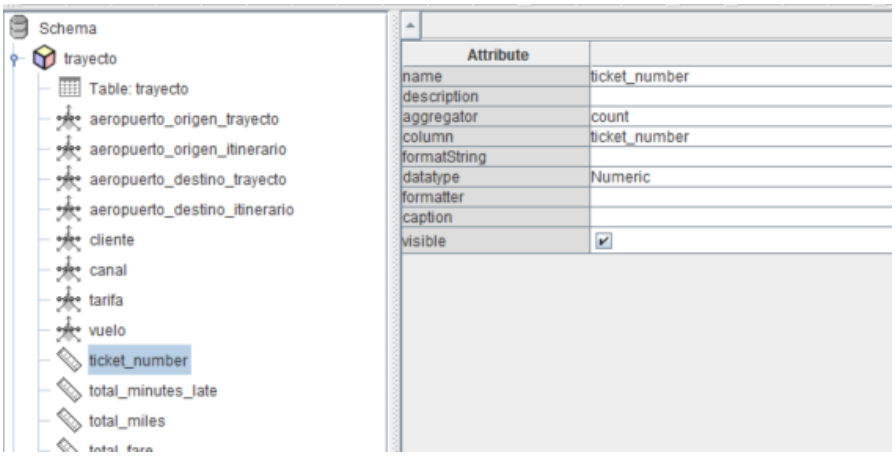
And ‘Aeropuerto_destino_itinerario’ whose source is airport, and the foreign key is ‘aeropuerto_destino_itinerario’.

We also have the dimension usage for ‘cliente’ whose source is ‘cliente’ and the foreign key is ‘cliente’ and the same for ‘canal’ (source: ‘canal’, foreign key: ‘canal’), ‘tarifa’ (source:’tarifa’, foreign key: ‘tarifa’) and ‘vuelo’(source:’vuelo’, foreign key: ‘vuelo’).

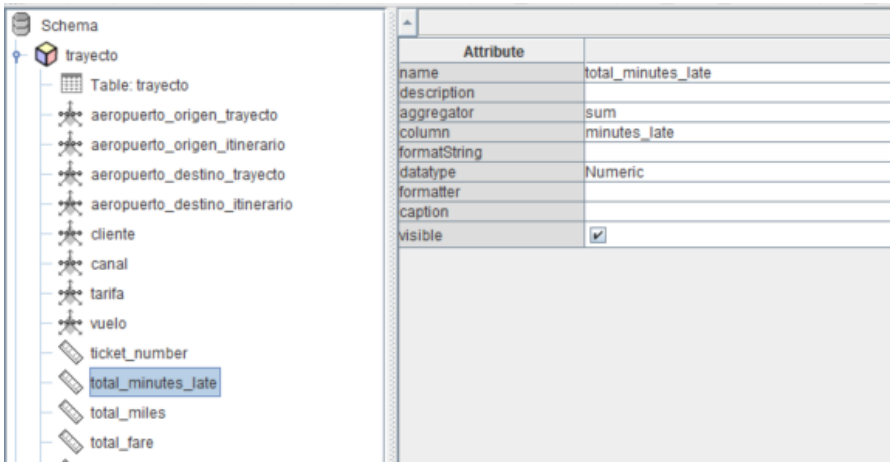
When it comes to the measures if have selected the following ones.



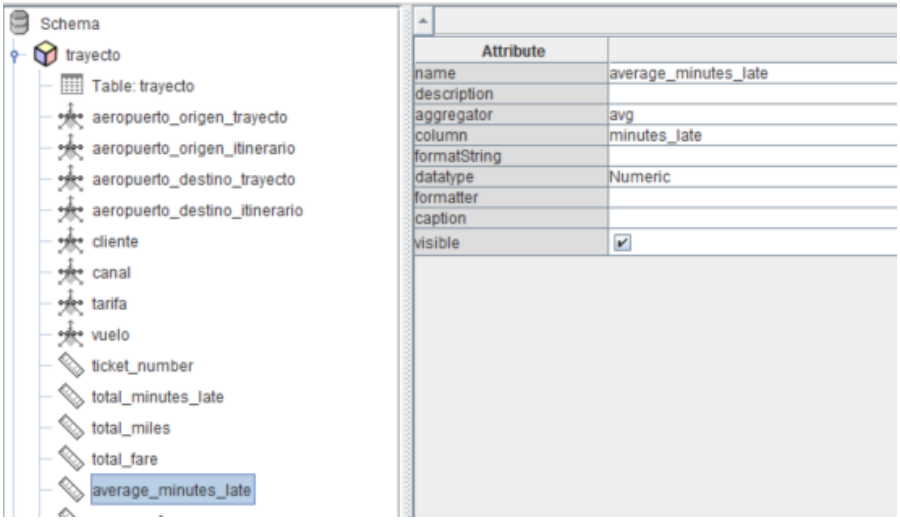
'Ticket _number' with a count aggregator so I can count the number of tickets per user.



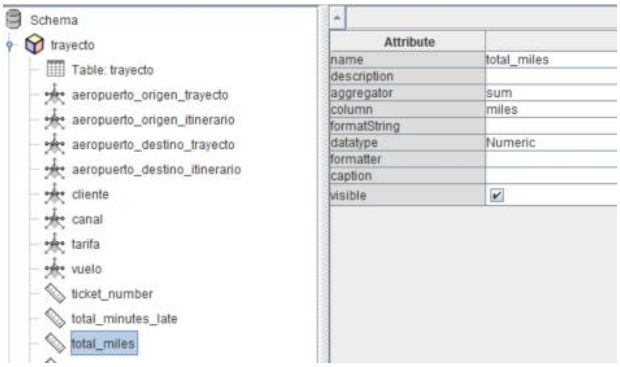
'Total_minutes_late' with a sum aggregator so I can calculate the total delay.

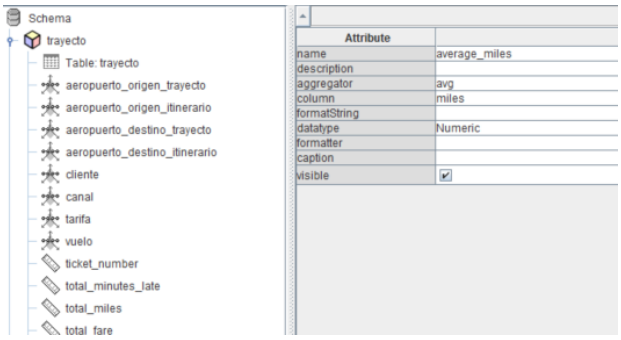


‘Average_minutes_late’ with an avg aggregator so I can calculate the average.



The ‘total_miles’ with a sum aggregator and ‘average_miles’ with an avg aggregator.





And the ‘total_fare’ with a sum aggregator as well as the ‘average_fare’ with an avg aggregator.