**Exercises - Chapter: 03**

**\* 5.1** Consider the data warehouse of a telephone provider given in Ex. 3.1. Draw a star schema diagram for the data warehouse.

**\* 5.2** For the star schema obtained in the previous exercise, write in SQL the queries given in Ex. 3.1.

**\* 5.3** Consider the data warehouse of the train application given in Ex. 3.2. Draw a snowflake schema diagram for the data warehouse with hierarchies for the train and station dimensions.

**\* 5.4** For the snowflake schema obtained in the previous exercise, write in SQL the queries given in Ex. 3.2.

**\* 5.5** Consider the university data warehouse described in Ex. 3.3. Draw a constellation schema for the data warehouse taking into account the different granularities of the time dimension.

**\* 5.6** For the constellation schema obtained in the previous exercise, write in SQL the queries given in Ex. 3.3.

**\* 5.7** Translate the MultiDim schema obtained for the French horse race application in Ex. 4.5 into the relational model.

**\* 5.8** Translate the MultiDim schema obtained for the Formula One application in Ex. 4.7 into the relational model.

**\* 5.9** The Research and Innovative Technology Administration (RITA) coordinates the US Department of Transportation’s (DOT) research programs. It collects several statistics about many kinds of transportation means, including the information about flight segments between airports summarized by month. There is a set of tables T T100I Segment All Carrier XXXX, one by year, ranging from 1990 up until now. These tables include information about the scheduled and actually departured flights, the number of seats sold, the freight transported, and the distance traveled, among other ones. The schema and description of these tables is given in Table 5.1. A set of lookup tables given in Table 5.2 include information about airports, carriers, and time. The schemas of these lookup tables are composed of just two columns called Code and Description. The mentioned web site describes all tables in detail.

From the information above, construct an appropriate data warehouse schema. Analyze the input data and motivate the choice of your schema.

**\* 5.10** Implement in Analysis Services the MultiDim schema obtained for the French horse race application in Ex. 4.5 and the relational data warehouse obtained in Ex. 5.7.

**\* 5.11** Implement in Mondrian the MultiDim schema obtained for the Formula One application in Ex. 4.7 and the relational data warehouse obtained in Ex. 5.8.









