

LAB ON MULTIDIMENSIONAL MODELING FOR THE ACME-FLYING USE CASE

You must create a multidimensional model, potentially consisting of different stars, that allows to easily retrieve the KPIs about aircraft utilization (namely FH, TO, ADIS, ADOS, ADOSS, ADOSU, DU, DC, DYR, CNR, TDR and ADD) and logbook reporting (namely RRh, RRc, PRRh, PRRc, MRRh and MRRc). All these metrics would be obtained from the available data in AIMS and AMOS, that can be complemented with the following sources:

- A file containing for every aircraft registration code, its manufacturer registration code, the aircraft model and manufacturer.
- Another file containing for the maintenance personnel, their identifier and the code of the airport where they work.

Finest temporal granule for flight hours and cycles is the day, while the ADIS and ADOS are calculated per month or year, like the DYR, CNR, TDR, ADD, and all Report Rates. The latest can also be analysed per person and airport of the reporting person (just in case of MAREP), as well. Thus, required queries are:

- a) Give me FH and TO per aircraft (also per model) per day (also per month and per year).
- b) Give me ADIS, ADOS, ADOSS, ADOSU, DYR, CNR, TDR, ADD per aircraft (also per model) per month (also per year).
- c) Give me the RRh, RRc, PRRh, PRRc, MRRh and MRRc per aircraft (also per model and manufacturer) per month (also per year).
- d) Give me the MRRh and MRRc per airport of the reporting person per aircraft (also per model).

Deliverables:

- 1) A folder (in a single zip file) with all the files of the conceptual design done in UML
- 2) Commented SQL file with the CREATE TABLE statements and auxiliary views (if any) in Oracle
- 3) PDF file (**one single A4 page, 2.5cm margins, font size 12, inline space 1.15**) with all assumptions made and justifying the decisions you made (if any)

Assessment criteria:

- i) Conciseness of explanations (only first page will be considered in the evaluation)
- ii) Understandability
- iii) Coherence
- iv) Soundness

Evaluation:

- 60% Deliverables
- 40% Exercises related to the project done individually in the day of the partial exam