LAB ON MULTIDIMENSIONAL MODELING AND DESIGN

OBJECTIVES

This lab session consists of two exercises:
1. Multidimensional design:
    a. Given a set of KPIs and queries, together with the available data sources, create an MD schema design that satisfies the needs.
2. Relational translation
    a. Given a multidimensional (MD) conceptual schema, translate it into relational.

ACTIVITIES

1. This part of the session consists of two activities:

   - Given the required KPIs and queries, create independent MD schemas, using UML notation, in the draw.io tool, that satisfy (i.e., that can answer) these information requirements.

   - Given the required MD schemas, consider integrating them:

        i. you obtain a unified MD schema that satisfies all information requirements at once, and

        ii. the unified MD schema has the minimal structural complexity (regarding the number of classes, attributes, and relationships).

2. Given a simple multidimensional (i.e., galaxy) schema:

   - Propose a logical database schema (i.e., a set of CREATE TABLE statements) corresponding to that multidimensional schema.

A training example of MD schema design will be available some days before the session.

REQUIRED KNOWLEDGE

   - Taught material: Multidimensional modelling and Advanced multidimensional modelling (see the slides section in Moodle).