UAIC- FEAA
Master Programme: *Software Development and Business Information Systems*
2019-2020

Database Logic in Business Applications

- Project Requirements (Parts 1 & 2) -

Part 1 – November: **database logical schema design for a real/comprehensive case study (application) using Oracle Data Modeler**

Part 2 – January: **database logic (business rules) implementation using stored procedures (and/or *Scheduler*)**

Part 1 (November, 25)

1. **Design requierements:**
    a. Diagrams will be drawn in Oracle Data Modeler
        i. E-R diagram for the database logical model will use Oracle Case (Barker) notation – see presentations and files uploaded on the FEAA portal
        ii. Relational diagram is generated from the E-R diagram (through *Engineering* option), not vice-versa!
    b. The case-study must be real (or very realistic) and relevant
    c. Special operations (exceptions) within the case study must be covered (take care of details) by the database schema
    d. Use denormalization
    e. Solve temporal issues
    f. Use as many data modeling seed models, templates and pattern from those presented during lectures (and uploaded on the portal)

The grade will be grantes accoring to:

- Model complexity
- Case study relevance
- Model validity
- Model elegance
- Number and difficulty of used patterns/templated
- Di(Non)-similarity with the examples presented on lectures, portal and tutorials.

Each team member will present an "area" of the E-R diagram and will explain at least one applied pattern/template.

Part 2 (January, 13) – database logic implementation

1. Minimal technical requirements:

i. SQL scripts for database creation, scripts generated by Oracle Data Modeler (from part 1);
ii. Settings of declarative constraints: not-null-able validations, primary keys, foreign keys, validation rules for columns and tables (CHECKs);
iii. Functions/procedures/packages;
iv. Triggers (procedural constraints) concerning:
    1. Referential constraints;
    2. Updating computed fields (automatically), including field protection against unauthorized update operations (control user edit rights);
    3. Advanced validation rules;
    4. Blocking operations on closed periods (closed months);
    5. Logging.

2. Technical requirements for 10 points:

i. Use cursors, cursor-variables, exceptions and collections;
ii. Triggers to block unauthorized DML operations;

The final grade depends on:

- Consistency of PL/SQL blocks (no compilation or runtime errors);
- Complexity of implementation;
- Elegance of PL/SQL solutions.