FACULDADE DE ENGENHARIA DA UNIVERSIDADE DO PORTO
Integrated Master in Informatics and Computing Engineering

Database Technology

Lab assignment nº 2

SQL3 ASSIGNMENT

ASSIGNMENT GOALS

Think about the possibilities open by the object-relational schema, with respect to the relational schema, namely the use of user defined types, with objects combining data structures and the functions to manipulate them, inheritance, nested tables and vectors, object references and comparison and sorting methods. Develop a small illustrative database.

TEAM

The assignment must be executed by teams of one or two elements.

DEADLINE

To submit on 2016-04-26.

SUBJECT

The proposal is to define a DB to organize a fast food restaurant. To improve its management the owner ordered an IS, indicating the following business rules:

- Upon arrival at the restaurant, clients pick up a ticket with a number and a time stamp. When his turn arrives, he starts to order and that moment is also recorded. The order happens at a specific POS (point of sales) where an employee is working. When the last item in the order is handed and the payment is finished the attendance is closed and that moment is also recorded.
- An order is composed by one or more products, in the wished quantities, chosen from a relatively short list. Some of these products are grouped into menus, stating the main dish and the sizes of the products but leaving the choice of the drink open. The total price to pay is the sum of the individual prices unless for the menus where the global menu price may be less than adding the components.
- The employees are described by the employee number, the name, the admission date, the category and the work timetable. Only the current timetable is needed, and it is repeated every week. On each day of the week there may be zero (holiday!) one or more work periods. A period, besides the initial and final instants, records the corresponding POS.

a) Design an object-relational data model for this situation, exploiting the SQL3 extensions. The model may be drawn schematically and then in actual DDL and implemented.

b) Prepare an instance for the DB.

c) Get the daily total amount and number of sales for each employee, as well as the average transaction time.

d) Show the menu.

e) Compute the weekly total number of work hours for the employees with the category of POS seller.