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.

SUBJECT

The problem situation to analyse is an on-line news site.

In the site one can read a set of news, published on a certain date (dates have the precision of seconds), with an id, a title and a text. Each item is published in a news section. News may have attachments like images or videos. They may even list related news. News are created by journalists who may play different roles with respect to each item like main reporter, collaborator, and so on.

Images are of different types (photos, infograms, cartoons, …) and thet are prodiuced on a date, with a title, a place (for photos), and the corresponding file has a size and is stored in a URL in the news servers.

Each viedo is recorde in a place and a date, has a certain duration and a title, the file being available at a certain URL.

Both in the cases of images and videos, a single author is recorded, considered a journalist. These materials may be shared by different news.

About the journalists, just the number of the professional id, the name, country and category is recorded.

The news site is read by users identified by username, country, and joining date. The last month paid is recorded, to enable establishing policies of maximum different news items allowed for visualization without paying. Having the month paid there is no limit to the number of news, but download are anyway recorded.

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) Add an ordering method for the news base on descending date and, for each day, on the number of previous downloads, also descending.

d) Prepare a query that, given the reader and a day presents the titles of the photos he has seen.

e) List the production of each journalist, including statistics.