Business Intelligence Lab

# Second mid-term exam 30/5/2013

**Deliver exercise 1 within 1 h from start time**
**Deliver exercise 2 within 3 h from start time**

**Notice:** use your own SQL Server credentials (the lbi account is disabled)

**Exercise 1 (6 pts).** Write a MDX query to answer the following question on the Sales cube of the `ruggieri_foodmart` OLAP database:

- Total sales and sales of the 'Meat' department by city (of stores), ordering cities by sales of the 'Meat' department descending;

Develop an excel sheet that, connecting to the data cube using pivot tables, shows the same (or a very similar) result of the query.

**What to deliver:** MDX query and a brief comment about it, a PowerPoint file with the screenshot of the MDX query result, an Excel file with the result using a pivot table.

**Exercise 2 (10 pts).** A customer is said to be *churning* at a month if she/he buys something in that month, and nothing in the next month. Using a SQL query, extract from the `sales_fact_1998` table in the *foodmart* database, a relation with a tuple for each customer and month when he/she buys something, and including:

- a class column *isChurning* set to *yes* if the customer is churning in that month and *no* otherwise;
- a set of predictive attributes that you think useful in predicting/describing who is churning and who is not.

Build a classification model (restrict to J48, JRip, and Cost-Sensitive) to optimize the lift chart at 20% of the test set.

**What to deliver:** SQL query, either a Weka knowledge flow `.kfml` file or a PowerPoint file with screenshots of Weka explorer, brief description of the steps of the analysis.

**How to deliver:** send a mail with a single <your surname>.zip file attached to ruggieri@di.unipi.it, with your name, surname, student ID, and computer IP address (http://www.whatismyip.com).

**Results and oral exam.** Results will be published on-line by Saturday 1 June, including the date and time for those who are admitted to the oral exam. Oral exams will start on Monday 3 June afternoon .