Business Intelligence Lab

Written test 8/2/2017

Deliver solutions within 4 h

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

Exercise 1 (8 pts). The quarter value QV of a customer_id C at the date_id T is the sum of revenues minus costs of the products that the customer C buys in the quarter of T. It is required to produce a CSV file with three columns: customer_id, time_it, QV. Develop a Java program QuarterValue.java using JDBC that solves the problem. The Java program can submit only SQL queries of the form "SELECT * FROM table".

What to deliver: QuarterValue.java, myJDBCdef.props (with only the parameters needed for a test of the program).

Exercise 2 (8 pts). Develop a SSIS package solving Exercise 1. No SQL query on data sources is allowed.
What to deliver: SSDT solution.

Exercise 3 (5 pts). Write a single SQL query **with analytic functions** that solves Exercise 1.

What to deliver: SQL query and a brief comment about it, PowerPoint file with the screenshot of the SQL query result.

Exercise 4 (3 pts). Write a single MDX query that solves Exercise 1.

What to deliver: MDX query and a brief comment about it, PowerPoint file with the screenshot of the MDX query result.

Exercise 5 (8 pts). Design a data mining approach using Azure ML or Weka that predicts the value of QV for a customer and a date given only information available at the day before the date.

What to deliver: a PowerPoint file with description of the proposed solution, and accompanying Python sripts (for Azure)/Java programs (for Weka).

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

Results and oral exam. Results will be emailed to the students shortly, including the date and time for those who are admitted to the oral exam.