

Exercises for DW & DM

Sheet 3 (until 23.04.2008)

Please note that you need **50%** of all exercise points to be admitted for the final exams. Exercises have to be turned in until **Thursday** before the next lecture and should be completed in teams of two students each. Write both names and “Matrikelnummer” on each page. If you have multiple pages, staple them together! Please hand in your solutions on **paper** into the mailbox at the IFIS floor or to our secretary (Mühlenpfordtstraße 23, 2nd floor). You may answer in either German or English.

Exercise 1 (10P)

1. Briefly (1-2 sentences) describe the 3 phases of data modeling presented in the lecture. (4P)
2. Define the following: (6P)
 - a. Classification hierarchies. (2P)
 - b. Classification schemas (2P)
 - c. Cubes (2P)

Exercise 2 (20P)

1. A multinational business, say McDonalds wants to keep control on their business. The built a DW, and among the cubes which they have included in the design are, Purchasing, Sales, Exchange Rates and Inventory. The Exchange Rates cube can be defined as follows: Exchange Rates((Day, Bank, Country),(Buy\$_Opening, Buy\$_Closing, Buy\$_Average, Sell\$_Opening, Sell\$_Closing, Sell\$_Average)).
 - a. Establish the dimensions and measures you consider necessary for the rest of 3 cubes and then define these 3 cubes (as done for the Exchange Rates cube) (6P)
 - b. Draw the ME/R diagram for the 4 cubes. You may choose the granularity levels of the dimensions as you consider fit. (8P)
 - c. Draw the lattice of cuboids for the Exchange Rates cube. (2P)
 - d. How many nodes does the lattice of cuboids have for a cube with n dimensions? (4P)