

Exercises for DW & DM

Sheet I (until 09.04.2008)

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 (7P)

1. Briefly define Data Warehouses (DW). (3P)
2. For what are DW used? (1P)
3. Explain the following notions:
 - a. Operational data (1P)
 - b. OLTP (1P)
 - c. OLAP (1P)

Exercise 2 (3P)

1. Mention some applications which are built on DW (besides OLAP). (1P)
2. Give an example of a typical questions DW are built for. (2P)

Exercise 3 (6P)

1. How and why is the DW lifecycle different from normal ones? (3P)
2. Enumerate the Phases of DW and describe each briefly (3P)

Exercise 4 (14P)

1. You are a business technology office McKinsey consultant and you have just been contracted by Nike. The Nike CTO calls you and tells you that because of the financial crisis they need to cut costs and raise profitability. They would like to know how their sales are doing, by shops, regions and product categories, this year compared to last year (and they have prepared a list of such questions they would like the system to be capable of on a regular basis). They have a IBM DB2 DBMS distributed server where all the operations are registered in real-time, storing the last 6 months data,

and when they tested it for such purposes it didn't go that well. The rest of the data until 5 years ago is stored on magnetic band in an old CIA base.

- a. How would you catalogue the system they have? What is it? Is it a DW? (2P)
- b. Why is the system they have not fit for such queries? (What are the problems that could arise if that system were used for that?) (4P)
- c. What would you suggest they do? What (if any) should they buy (HW and SW)? How much does that cost (just approximate)? (4P)
- d. Recently they have conducted a marketing campaign for Europe and USA for "running shoes". Could you tell with the system you build if the campaign was successful or not? What would be the questions the system should answer to obtain this information? (4P)