

DATABASE TECHNOLOGY – 1MB025

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Assignment 4 - AMOS II Database Project

1.1 Goals

The exercise consists of the development of a small *stock portfolio database application* for storing and retrieving information about stocks writing schema definitions and queries in AMOSQL, the query language of AMOS II. The goal of this exercise is to give a practical experience to develop a small database application using an object-relational database management system including an object-relational query language. Very few commercial systems exist yet, but most large relational database vendors have started to introduce extensions to their current products or new object-relational database systems. In this assignment the students will work with the AMOS II object-relational DBMS which is a research prototype system being developed at Uppsala Database Laboratory, Uppsala University.

This exercise is preferably carried out in groups with two students in each.

1.2 Preparations

Write your solutions on paper before testing them out on the AMOS II system.

1.3 Background reading

Read through chapter 20, 21 and 22 in the course book and any material (slides) from the lectures on object-oriented and object-relational databases systems and query languages.

Worked through the AMOS II tutorial that is part of the AMOS II download. AMOS II is available on the course web at <http://user.it.uu.se/~udbl/amos/>.

1.4 Instructions for the assignment

Connect to the course web page and download AMOS II, install the system on your PC. The exercise consists of 2 parts:

- 1.) Work through the AMOS II tutorial that is part of the AMOS II archive to download.
- 2.) Develop a small stock portfolio database application to handle a personal portfolio. Your test data should include at least 2 different stocks (to be selected individually or by using test data available in the course material) and one index such as Affärsvärldens Generalindex. Data should cover at least two weeks and could be collected from any newspaper.

The data collected for each stock should at least include stock prices (+/-, buy, sell, latest, highest, lowest), dividend, dividend in percent (sv. direktavkastning), and date.

For the portfolio owner you need to specify at least the number of stocks he/she owns, when they were bought, for what price, and current value.

Typical queries you should be able to answer are:

The current value of the owners specific stocks as well as the whole portfolio.

Development of single stocks and the portfolio in SEK, percentage, and a comparison to some index. The development is taken in regard to some period of time.

Comparison of development of one stock to another.

What days did a stock have a positive (or negative) development.

What has been the difference between buy and sell price for a stock for a period of time.

Any additional and interesting queries are welcome. At least two such additional queries should be defined.

1.5 Handing in

Hand in an overview of the design, e.g. in an EER diagram, including explanations to concepts and symbols. Solutions to all the questions in the exercise as a printout of the interaction with AMOS II. This can be done by copying the results from the window where you are running AMOS II to a text file that you print out and hand-in to your assistant.