Exercise 7 (1)

7.1 Warm-up: What are the ACID properties? Explain each property shortly.

7.2 Find information about *Scalability, Reliability* and *Availability of Server Systems* on the ECommerce page and from the Internet. Relate the functionalities Failure Recovery, Load Balancing and Connection Pooling to the three factors. Explain what problems clients could face if any of the three functionalities was not provided?

7.3 Load-balancing: Explain shortly and in your own words the difference between active and passive load-balancing.

SQL: On the ECommerce home page, you will find a product database for MS Access. Download it and open it using MS Access (installed in the STS pool).

7.4a Give an SQL expression to query the name and price of all products that do not cost more than 10 € from the existing database.

7.4b Give an SQL expression to query the name, description and price of all products whose names contain the word „Salad" and do not cost more than 8 €

7.4c Add a new product to the database. Give the SQL expression to insert the new product with name, description and price.

7.4d Delete an existing product from the database. Give the corresponding SQL expression.

7.4e Compare standard SQL and the MS Access SQL dialect and note differences you encountered.

Exercise 7 (2)

7.5: What are the differences between the Internet, Intranets and Extranets? What is the purpose of extranets?

7.6 How can external (field staff) members have access to the company's network? What security measures apply when external members access to company's network?

7.7 Explain the concept of a Virtual Private Network (VPN). What is the purpose of using VPNs?

7.8 Identify user roles (internal and external) in your business solution and classify them as Intranet, Internet, Extranet users.

7.9 Would you set up a VPN for your business solution? Justify your answer.