Exercise Sheet 1: Name (until Thursday, 30.10.14)

Please note: you need **50%** of all exercise points to receive the *Studienleistung* for this lecture. In order to pass the RDB I Module, you need both the Studienleistung **and** you need to pass the exam. Exercises have to be turned in until **Thursday before the lecture** either in the lecture hall or into our mailbox (Informatikzentrum 2nd floor). Please do not forget your **Matrikelnummer** and your **tutorial group number** on your solutions. Your solutions may be in German or English. Unless otherwise specified: **Always use your own words!**

Exercise 1.1 - HMS (5 points)

Visit our Homework Management System (HMS) at http://is64.idb.cs.tu-bs.de:8080/ifis-hms and

a) **Log-in**, using your **y-number**
b) **Sign in** for this lecture *(Relational Database Systems 1, WiSe 14/15)*

This will make grading and managing your homework submissions a lot easier, both for you and us!

Exercise 1.2 – Basics (12 points)

a) What is a *database*? (2 Points)
b) What is a *database management system* (2 Points)?
c) Compare a data organization using a **Database Management System** with a data organization using a **file system** (8 Points):
   i. Name 2 advantages of a data organization using a file system compared to one with a DBMS
   ii. Name 2 advantages of a data organization using a DBMS compared to one with a file system
   iii. Describe a scenario, where a data organization using a file system is superior to one with a DBMS
   iv. Describe a scenario, where a data organization using a DBMS is superior to one with a file system

Exercise 1.3 – Redundancy (4 points)

a) What is meant by *uncontrolled redundancy*? Name one disadvantage of uncontrolled redundancy (2 Points)
b) What is meant by *controlled redundancy*? Name one advantages of controlled redundancy (2 Points)

Exercise 1.4 – Database characteristics (6 points)

Briefly explain:

a) What is the idea behind *declarative querying*? (2 Points)
b) What is the difference between a *view* and a *table*? (2 Points)
c) Why is it important that a DBMS supports *transactions*? (2 Points)