



## **Exercise Sheet 2: Indexing and Access Paths (until Tuesday 16.05.2014)**

Exercises will be discussed on **Friday** on week after the respective lecture was given. The handouts are optional and do not have to be handed in. They only serve as optional preparation for the oral exams at the end of the semester.

### **Exercise 1 – Data Organization**

- a. What is the purpose of the buffer manager?
- b. What is important for a sequential file organization to be efficient for a (sequential) scan of the file?
- c. What index is preferable for range queries: primary index or secondary index?

### **Exercise 2 - Indexing**

- a. What are the differences among **primary**, **secondary**, and **clustering** indexes? How do these differences affect the ways in which the indexes are implemented? Which indexes are **dense**, and which are not?
- b. Is it possible in general to have two primary indexes on the same relation for different search keys?
- c. How does multilevel indexing improve the efficiency of searching an index file?
- d. What general requirements should a hash-function fulfill?