

Answers-lab1

The first lab sets up the most basic functionality of our SimpleDB project.

In general, I have figured out the global static data structure and the software design architecture as a whole (as you can see in the UML diagram in the second page).

The important thing I need to clarify is the following. We need to figure out the relation among HeapPages, HeapFiles, BufferPool, and query iterator. The database user interface is the query iterator. The query iterator is marked by a transaction id, and it aims to access a particular HeapFile. The query is given to BufferPool rather than directly through HeapFile. HeapFile contains the java file handler with random file access, with which the input and output data stream are created, and then the pages are constructed. Accessed pages are cached in BufferPool for reuse.

The code we need to inspect in detail is the pieces related to page-byte conversion, so as to have a clear picture of page layout.

It is important to have a high-level, top-down overview as well as perform bottom-up implementation simultaneously.

