**Write Up for Lab2**

1. **About the design:** I followed the steps provided in canvas and it works just fine. As for some Iterators function, I write a separate class for the iterator and I find it really helpful. In Catalog, I use HashMap to store the information about database and the associated schemas.
2. **Any changes made to the API:** except for HeapPageIterator.class and HeapFileIterator.class added to make the code more readable, nothing else changed.
3. **Any missing code:** I didn’t implement the hashcode method for TupleDesc since I didn’t use it as a key for hashMap yet.
4. **How Long to finish and What is Confusing:**

This Lab takes me nearly 20 hours to finish… The first difficult part is trying to figure out the structure, although we are provided with suggestions to implement first and then next , to find the relationships between the classes and which class could provide curtain functions for another class still need to be noticed. The second thing is about Java, how to write an iterator for custom-class and how to implement the equal method correctly. The third thing is the implement of readPage method. Finally, how to debug when the scantest fails but the 6 unit test are working correctly.