Lab2 Report

For the LevelDB stores the key-value pairs in SSTables. During compaction, the key-value pairs from multiple SSTables will be merged and new SSTables are generated to replace the old ones. In this process, the values, even without any change, will be copied to the new SSTables. Copying the values can be very expensive, especially for KV pairs with large values.

So, in my design I use the Key-address pairs instead of key-value. The 'address' in the key-address pairs which means it located at where of this file and the size of it. Then store the value at the and of this file so that it will be very fast. Also, you can directly write to store this file it reduce the time use for inquiring which space is aviable. For delete we only need to delete the key-address in the database. For optimization we only need to clean the unuseful data in the database and update the 'address'. So, this design although it maybe slow when the value size is small but when the value size is become bigger it will faster.

Figure 1 show under different value size how long it will need for leveldb and wisckeydb work. As we can see that for the small size wisckey is slower but for when the size become larger and larger it become faster and much faster than leveldb.

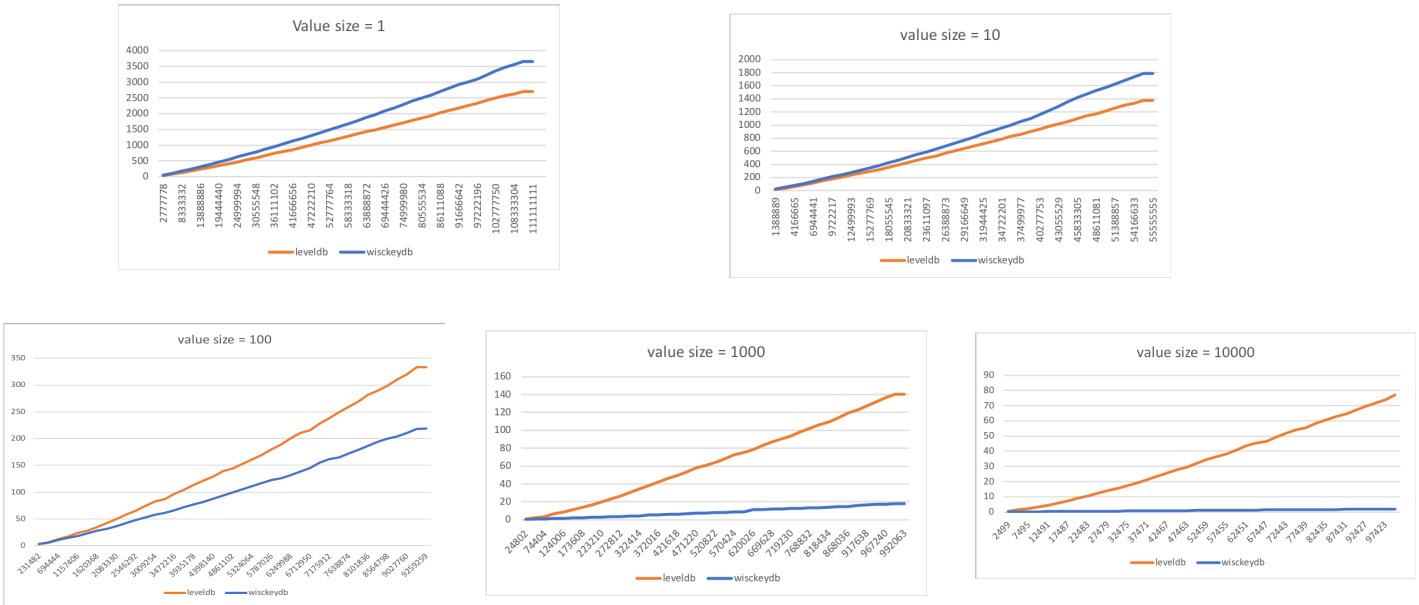

Figure 1 Under different value size the response time for leveldb and wisckeydb