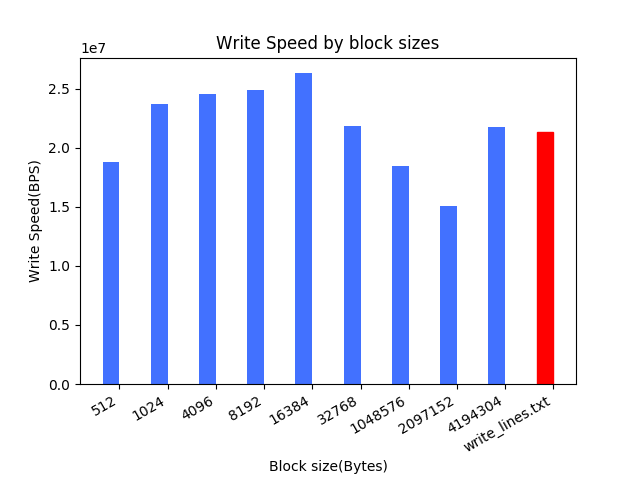
Experiment 1

my linux os system block size 1024 bytes



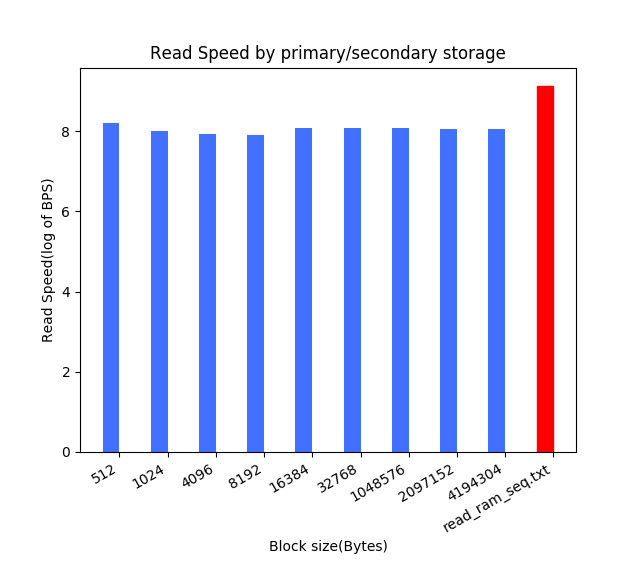
optimal block size to my experiment is 16KB?

Does it correspond to the system disk block size? No. The system disk block size is 1KB.

Is there a block size when further increase does not contribute to better performance? 16KB

The speed for writing in lines is 20.322MBPS. It is slower than writing in Blocks. From the lecture, we learned that using block to write data to disk can reduce disk I/O and it will be more efficient.

Experiment 2

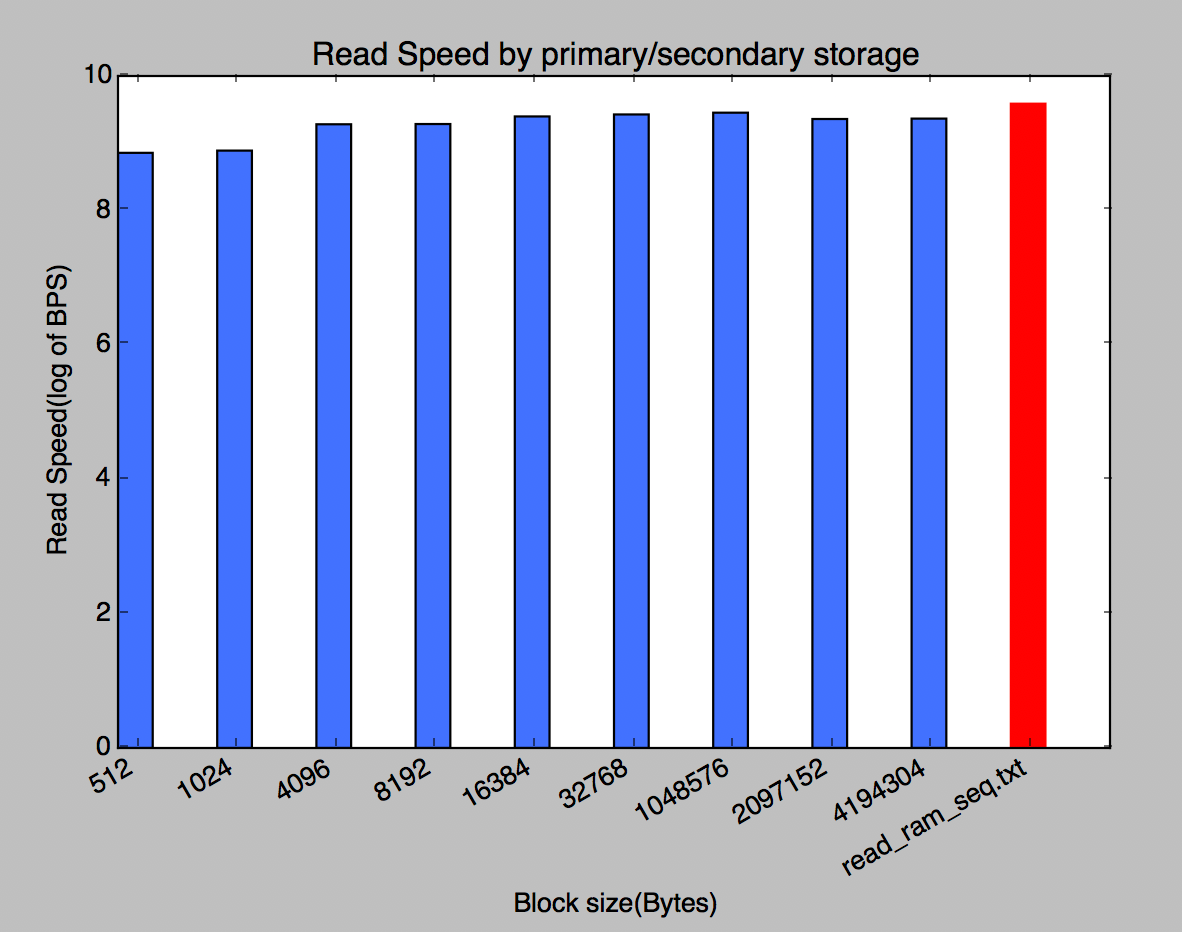


Q: What is the ratio of sequential read rate for secondary storage and for RAM? Does it correspond to the ratio discussed in class? If not, what do you think is the reason?

A: The ratio discussed in class is around 10^8.8/Sec (sequential RAM) and around 10^7.6/Sec (sequential DISK). The ratio we got from the data is different, around 10^8.1/Sec(sequential DISK) and 10^8.7/Sec (sequential RAM).

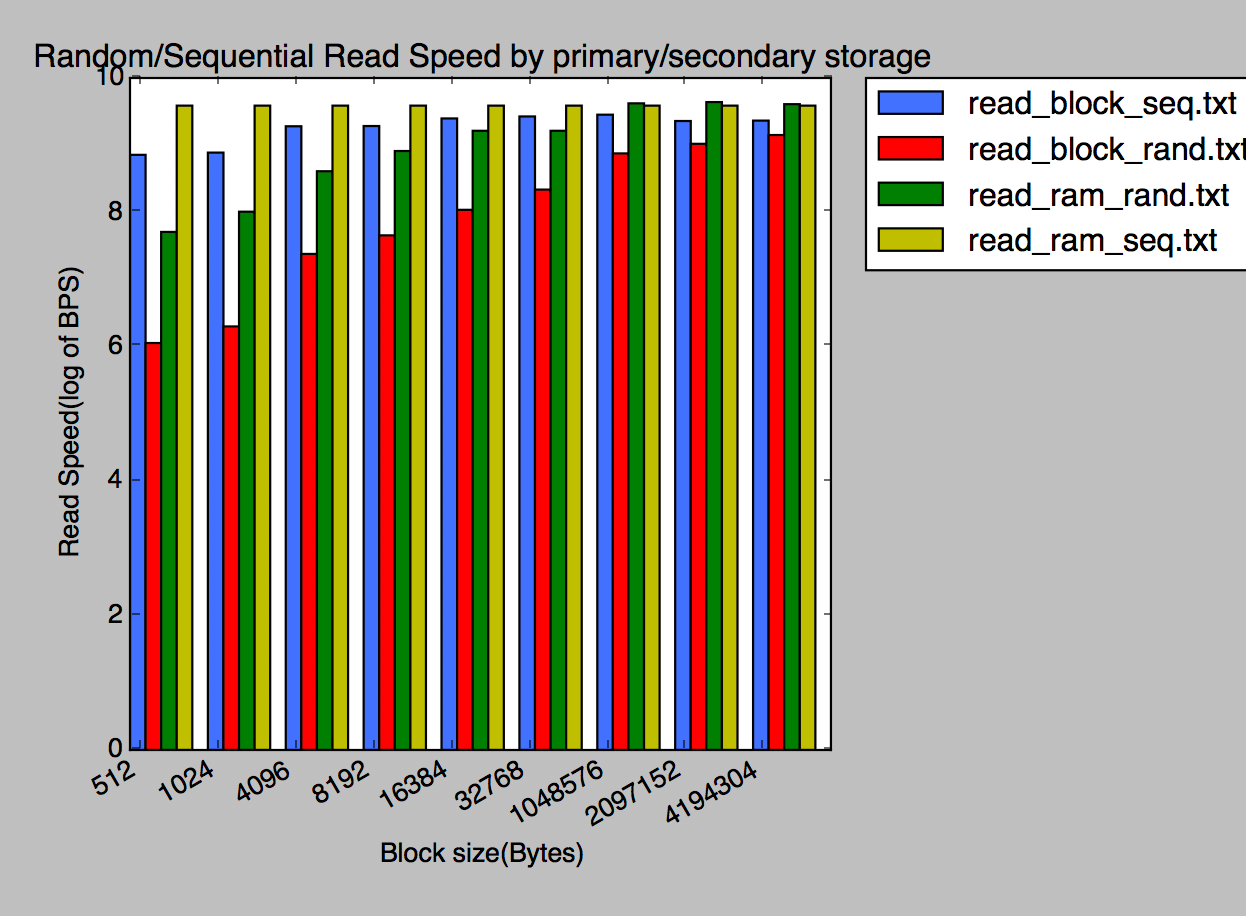
Experiment 3

Experiment 2 Apple:



Q: What is the ratio of sequential read rate for secondary storage and for RAM? Does it correspond to the ratio discussed in class? If not, what do you think is the reason?

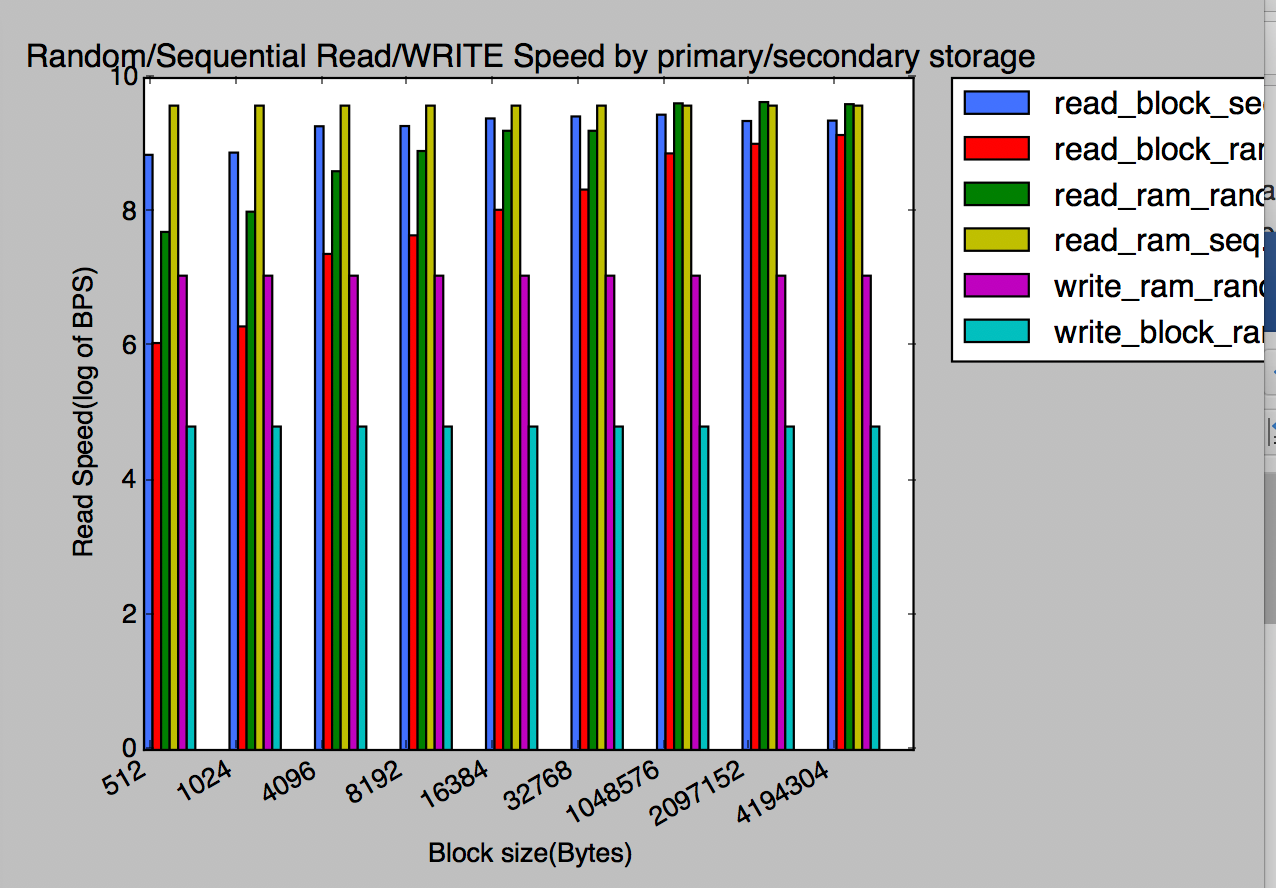
A: The ratio discussed in class is around 10^8.8/Sec (sequential RAM) and around 10^7.7/Sec (sequential SSD). The ratio we got from the data is different, around 10^9/Sec(sequential SSD) and 10^9.7/Sec (sequential RAM).



Discuss differences in speed and make a conclusion about reading rates (sequential and random reads) for different memories.

Read from memory sequentially is always the fast one, and then is read from disk sequentially, read from memory randomly can be faster than read from disk seq in large block size. Read from disk sequentially is always the slowest one.

Expr 3



From the xplot, we can clearly see that read is always faster than write.