- 1. When you try to vary the size of the hash table, the larger the size of the hash table, the smaller the load factors gets for the time to search and the expected time to insert and delete. The number of slots = m and number of keys to be inserted in hash table = n. The load factor is h = n/m and the expected time to search = O(1 + h) and this is also true for the time to insert and delete. Time complexity of the search insert and delete is O(1).
- 2. When you increase the bloom filter size, the space of the actual data structure is simply O(M) is M bits. K is the number of hash functions and the insertion and search will both take O(k).
- 3. The move to front rule is not necessary for running the program but it will help the time complexity of the lookup because the looked up node will become the head and the it'll be faster to retrieve the data because its in the head instead of going through the linked list to find the data.