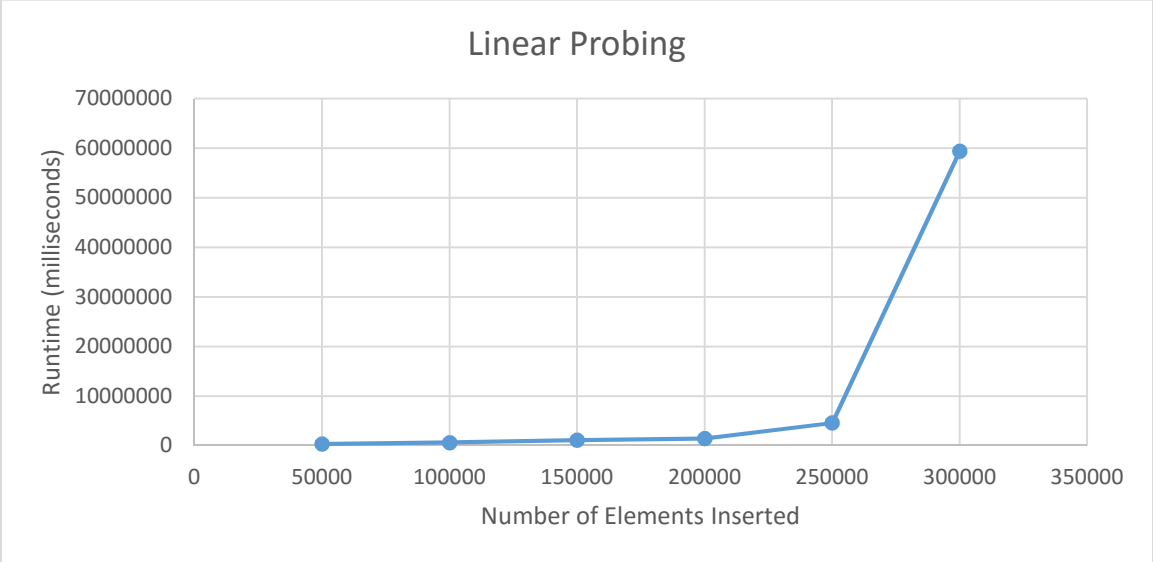
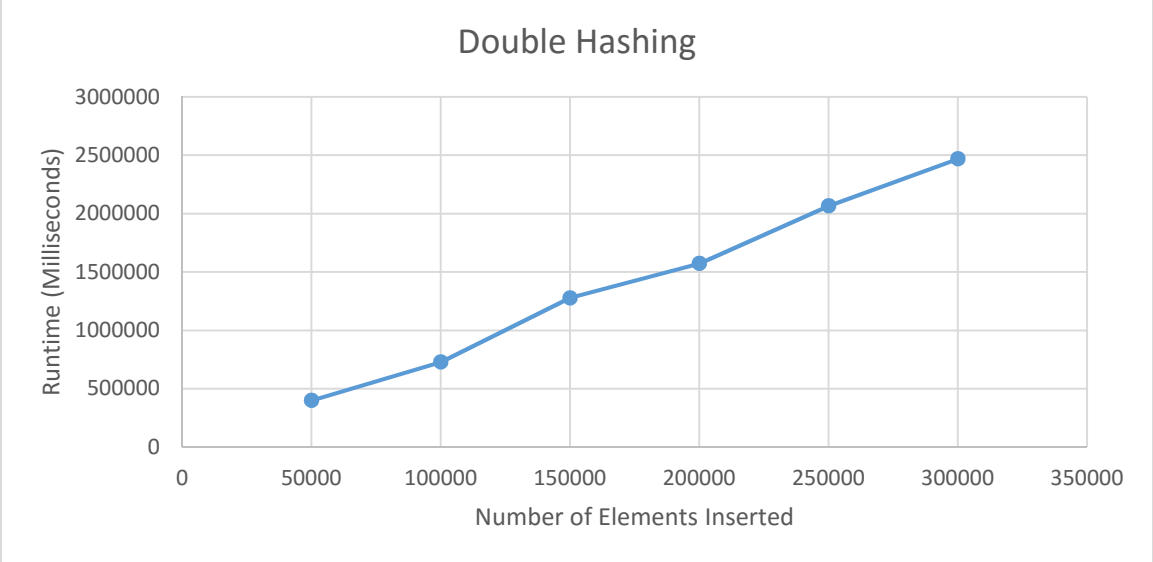
Name: Chang Rey Tang

Perm: 7781693

Section: Friday 11 AM, Omid





To obtain the data shown above I used <ctime> to clock the amount of time it took to insert all elements that were randomly generated into a .txt file and fed back into Main.cpp. If you look at the data, you can easily tell that as the number of elements grow, double hashing is linear in runtime while linear probing is exponential. I believe that this is because the more elements we put into the hash table the worse the clustering becomes for linear probing. There is not a good distribution within the hash table when you use linear probing and you end up looking through a lot of elements when you just want to insert one. As for double hashing, it has a seemingly linear runtime because it distributes the data more evenly (randomly) throughout the table. By reducing clustering, the effect it can have on the runtime as the data set grows larger can be drastic.