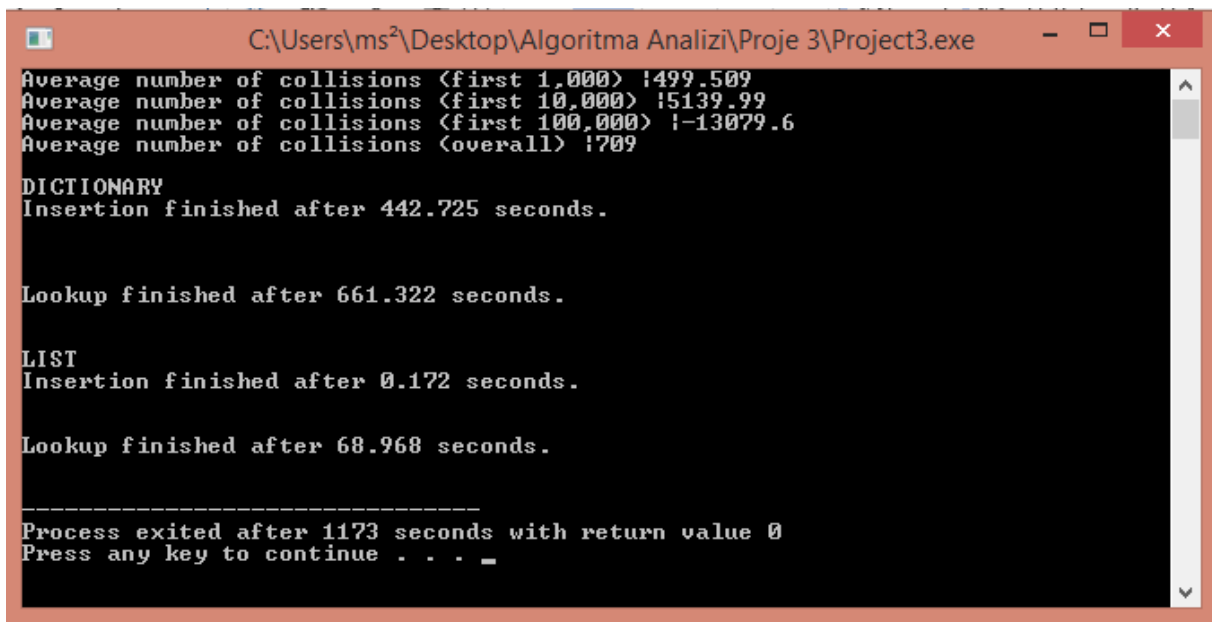


Q1)



```
C:\Users\ms²\Desktop\Algoritma Analizi\Proje 3\Project3.exe
Average number of collisions <first 1,000> !499.509
Average number of collisions <first 10,000> !5139.99
Average number of collisions <first 100,000> !-13079.6
Average number of collisions <overall> !709

DICTIONARY
Insertion finished after 442.725 seconds.

Lookup finished after 661.322 seconds.

LIST
Insertion finished after 0.172 seconds.

Lookup finished after 68.968 seconds.

-----
Process exited after 1173 seconds with return value 0
Press any key to continue . . . _
```

Second(s)	Dictionary	List
Insertion	442.725	0.172
Lookup	661.322	68.968

I did not get the dictionary part properly because I left the homework last time. I did not understand why it is making so much collisions but because of that it is being so much time. It does so much collisions and gives the right result even though it takes a long time.

Q3)

It's getting harder to find free space because vacancies are constantly diminishing. Therefore average collisions are increasing exponentially.

Q4)

If there is always a maximum collisions it becomes $n \cdot (n+1) / 2$ so $O(n^2)$.