

BLG381E

Advanced Data Structures

2012 Fall

Report of Project 2

Date of Submission : 22.12 2012

Student Name: Volkan İlbeyli

Student Number : 040100118

Instructor : Zehra Çataltepe

collisions

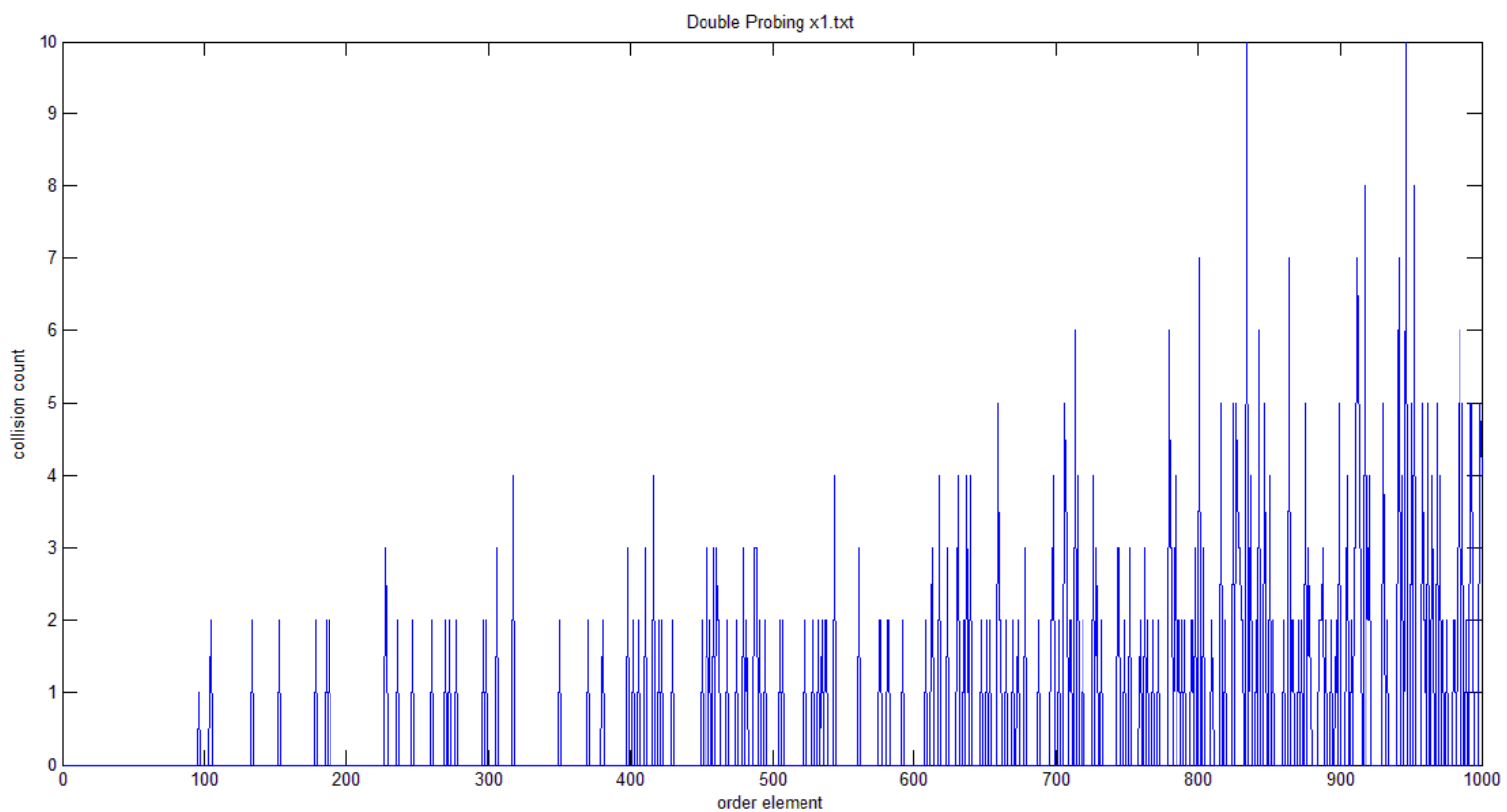
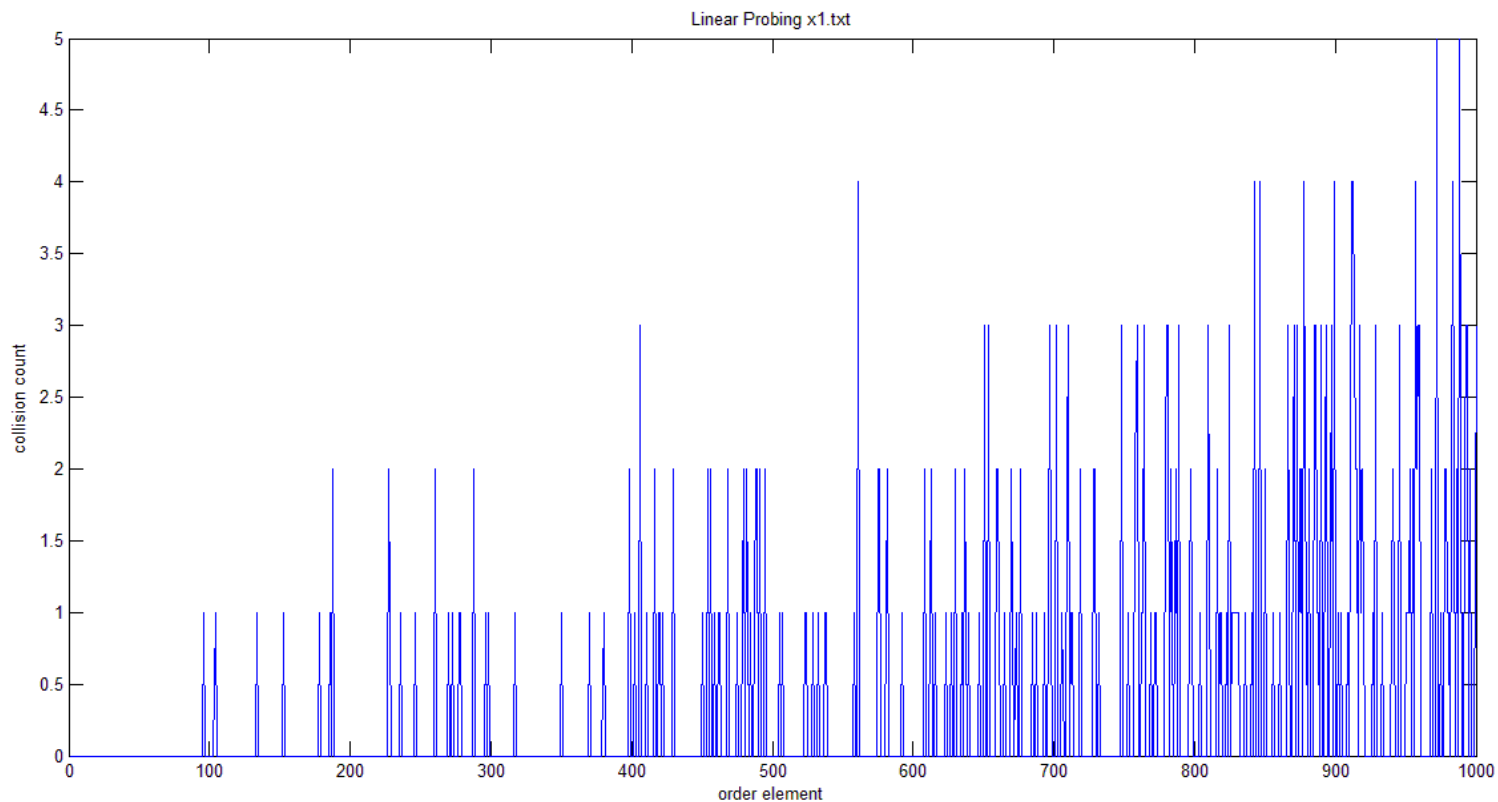
Probing Strategy	1	27	5	42	18	9	35	72	49	12	92
Linear Probing	0	1	0	0	1	0	1	0	1	0	3
Double Hashing	0	1	0	0	2	0	2	0	0	0	3

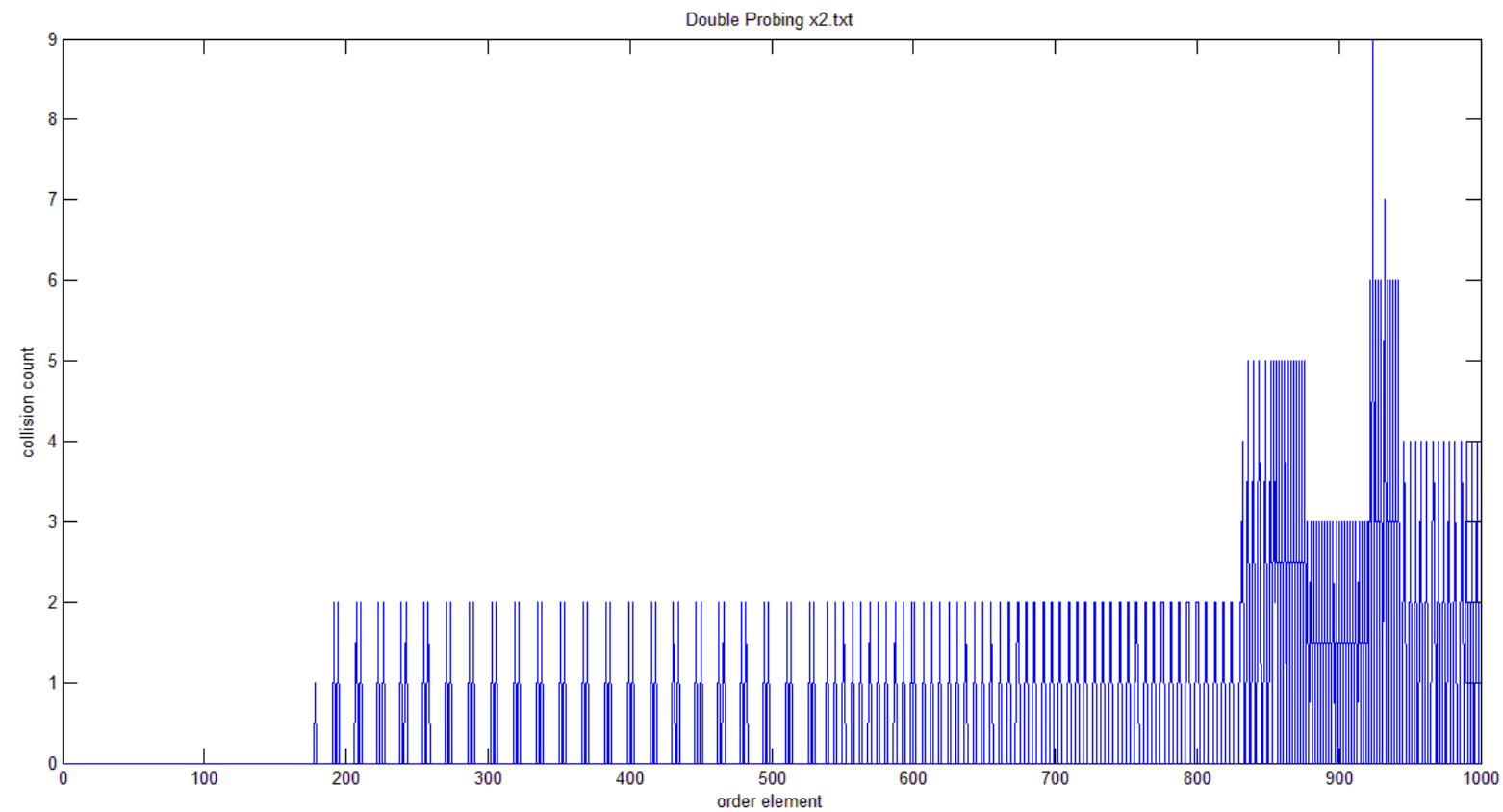
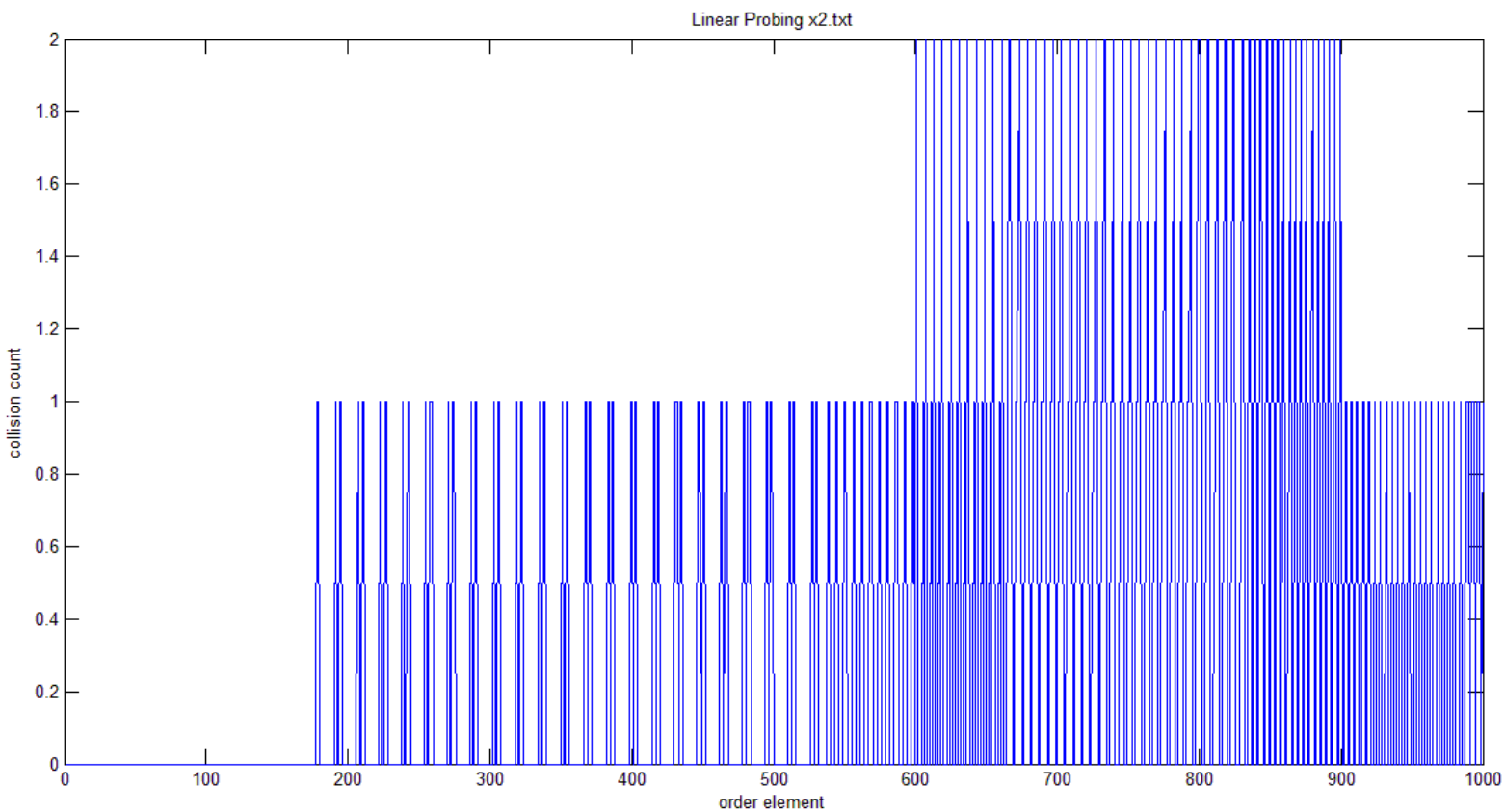
Linear Probing results:

Table[0] = 0
Table[1] = 1
Table[2] = 27
Table[3] = 42
Table[4] = 92
Table[5] = 5
Table[6] = 18
Table[7] = 72
Table[8] = 0
Table[9] = 9
Table[10] = 35
Table[11] = 49
Table[12] = 12

Double Hashing results:

Table[0] = 27
Table[1] = 1
Table[2] = 0
Table[3] = 42
Table[4] = 35
Table[5] = 5
Table[6] = 0
Table[7] = 72
Table[8] = 18
Table[9] = 9
Table[10] = 49
Table[11] = 92
Table[12] = 12





In linear probing hashing of x1.txt which has randomly distributed key values, it is seen that the collision probability increases as the table is populated while in x2.txt which has key values in increasing order, the probability of collision is nearly uniformly distributed thus is not necessarily increased as the hash table is populated. It is also observed that the maximum number of collision of a given key in x2.txt is 2 while in x1.txt is higher. Although, the summation of collision of both x1.txt and x2.txt in linear hashing is equal to each other when computed.

In double hashing, the frequency of a collision occurs is lowered, but for a given key, the number of collisions got slightly higher. This might be due to the increased search interval of a new hash value in double hashing function. Again, a more uniform plot is obtained when hashing a sorted array.