**Coding Assignment 5 Results**

CSE 3318

**Test 1**

**A.** How many rows are in your file/how many cells are in your hash table array?

*(35)*

**B.** How many of those cells contained the head of a linked list?

*(19)*

**C.** What percentage of the array is being used?

*(54)*

**D.** What is the length of the longest linked list?

*(3)*

**Test 2**

**A.** Did increasing the size of the hash table array give you different results than Test Question 1?

*(yes)*

**B.** Explain why or why not.

*(When the size of the hash table was doubled there were more options than before for the records to be placed in, when the size was doubled there were 28 arrays being used now more than last time.)*

**Test 3**

**A.** How many rows are in your file/how many cells are in your hash table array?

*(18)*

**B.** How many of those cells contained the head of a linked list?

*(16)*

**C.** What percentage of the array is being used?

*(89)*

**D.** How did decreasing the size of the hash table array affect the percentage of the array that filled?

*(Yes, now the 16 out of 18 arrays were filled, as the number of records is more and the arrays are less, many of them are filled up, leaving just 2 arrays empty.)*

**E.** Did your hash table get any linked lists that were longer than in Test 1? Why or why not?

*(Yes, earlier my array had maximum of 3 link list in one array but now I have maximum of 4 link list in one array, this is because the array size is less which would make hash value to be similar for the data.)*

**Test 4**

**A.** What was your average search time when your HASHTABLESIZE matched the number of records in the file?

*(7.4)*

**Test 5**

**A.** What was your average search time when your HASHTABLESIZE was set to 1?

*(5.4)*

**Test 6**

**A.** What was your average search time when your HASHTABLESIZE was set to 1 and you only searched for the last record of your input file?

*(6.4)*

**B.** Was this average different from your answer to Test 5. If yes, why?

*(Yes, the average was different, the normal average was little less than the average for the last record, I think this is because all the records are stored in the same array and being the last record, it takes more time to search than record at any other place.)*

**Bonus Question**

If your program was using Open Addressing rather than Separate Chaining, then how many cells of the hash table array would be used when HASHTABLESIZE is set to the number of lines in the file? How did you calculate this number? Show/explan your answer.