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CS 313

Problem 1

In this problem 1, I was assigned to find out which one of the two between vector and linked list is faster by timing them with 3 different methods. First fill them with random numbers, second fill them with random string using ASCII and last move the data of random strings to another object using move semantics.

When filling with random numbers, I used four different array size which are 10,100,1000,10000. The result came as a surprised to me because before knowing linked list, I thought vector is the fastest by far. The linked list averaging 8 milliseconds for array size of 10 while vector averaging 13 milliseconds for the same size. On both programs, I was also using random numbers from 1 to 1000 because I believe that is enough. On array of size 100, linked list averaging around 50milliseconds while vector is around 130. From here we can conclude that the linked list always faster by half of what vector is.

For the second problem when filling with strings with ASCII, I was having a bit of problem, so instead of using strings, I switched my type from strings to char and it works wonderful. When I used strings, it won’t let me take the time measurement. For generating random ASCII, I used rand()%128 because there are only 128 characters in ASCII. I used the same size of array like I did on the random number and for array size of 1000, vector averaging around 900 milliseconds while linked list averaging around 600 milliseconds.

For the third problem, when doing move semantics, I used BuiltListForward approached which turns out even faster by about 200 milliseconds. In conclusion, Linked list is by far is faster than vector by a lot.