The following materials have been collected from the numerous sources including my own and my students over the years of teaching and experiences of programming. Please help me to keep this tutorial up-to-date by reporting any issues or questions. Please send any comments or criticisms to [idebtor@gmail.com](mailto:idebtor@gmail.com). Your assistances and comments will be appreciated.

A doubly linked list with sentinel nodes(ver 2.)

# Step 8. Test scores

If it takes less than a second, you may just write **"instant".**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| N | | 10,000 | 100,000 | 1,000,000 |  |
| Pop\_all  O(n) | my code | 0.000711 sec | 0.006166 sec | 0.044052 sec | Insert N/2 nodes with random numbers, then N/2 nodes with a fixed number. |
| listdsx | 0.000655 sec | 0.006074 sec | 0.042362 sec |
| unique  O(n) | my code | 0.001283 sec | 0.010066 sec | 0.07268 sec |
| listdsx | 0.001154 sec | 0.008619 sec | 0.053683 sec |
| selection sort  O(n^2) | my code | 0.217539 sec | 21.0077 sec | xxxx | takes too long unless use quicksort |
| listdsx | 0.214345 sec | 20.8817 sec | xxxx |
| reverse  O(n) | my code | 0.000215 sec | 0.00143 sec | 0.013835 sec | Insert N nodes with random numbers. |
| listdsx | 0.000237 sec | 0.002152 sec | 0.015194 sec |
| Shuffle/half  O(n) | my code | 0.000206 sec | 0.001501 sec | 0.013339 sec |
| listdsx | 0.000171 sec | 0.001469 sec | 0.012483 sec |
| push sorted  O(n) | my code | 0.000285 sec | 0.002385 sec | 0.013434 sec |
| listdsx | 0.000222 sec | 0.001916 sec | 0.011203 sec |
| push sortedN  O(n^2) | my code | 0.152417 sec | 37.3226 sec | xxxx | Insert N/2 nodes with random numbers, then N/2 nodes with a fixed number. |
| listdsx | 0.14794 sec | 33.7622 sec | xxxx |
| push sortedN  O(n log n) | my code | 0.003959 sec | 0.033429 sec | 0.353949 sec |
| listdsx | 0.004032 sec | 0.032028 sec | 0.31785 sec |