Kathmandu University

Dhulikhel, Kavre

Subject: COMP 202 [Data Structure and Algorithm – DSA]

Lab Work 05

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Level: 2nd Yr. / Ist Sem.

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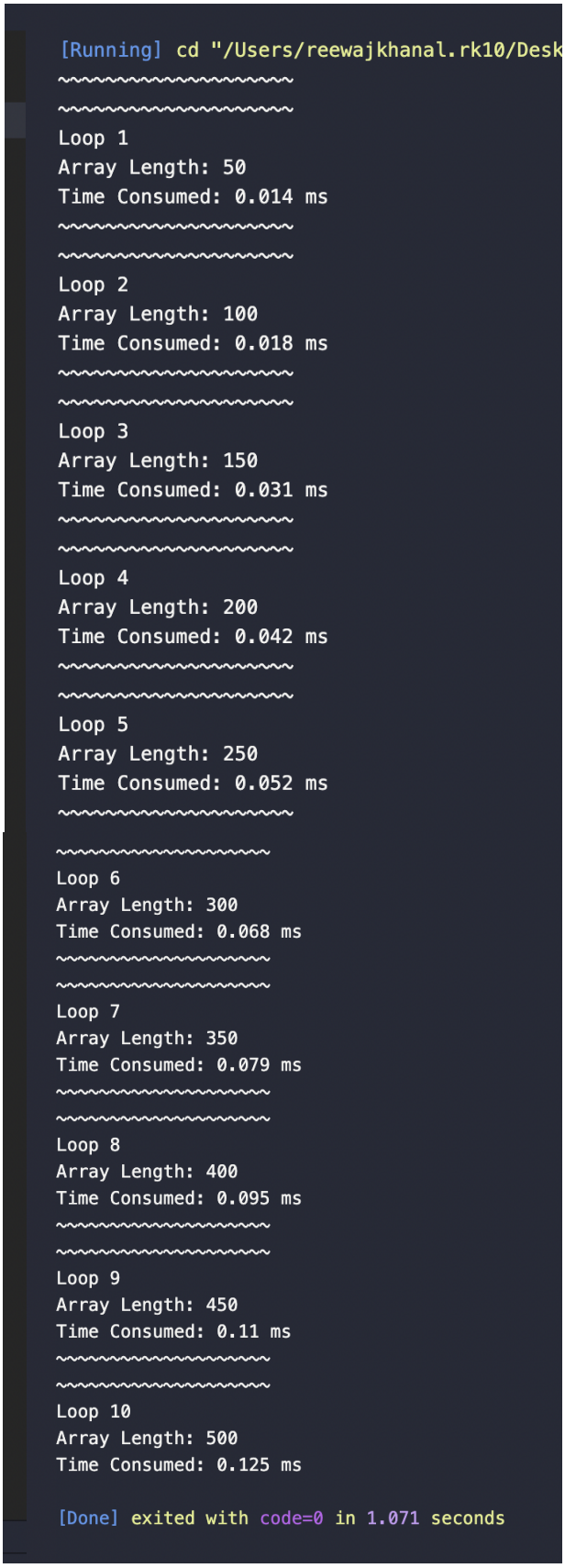
Output Screens:



Steps/Explanation [Quick Sort – Implementation and Analyzation]:

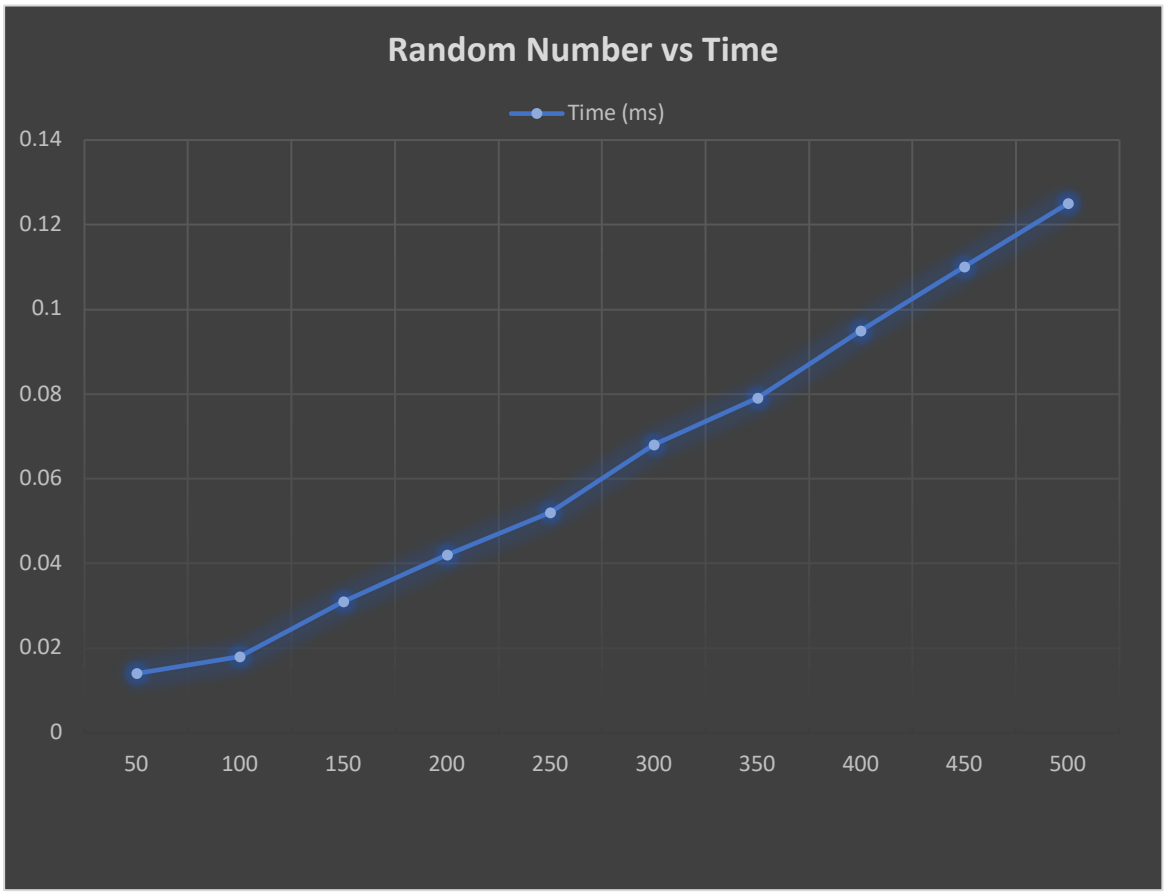
- vector array is used for creating dynamic array.
- pseudo random numbers are generated from srand(time(0)).
- quick sorting is done for 250 randomly generated data.
- randomization is minimized by mod 1000. [eg: x%1000]
- time difference for each loop is measured by clock() using <ctime> library.
- graph is plotted between time and random data.

Output screen of randomly generated data [250] for 1 loop:

```
[Running] cd "/Users/reewajkhanal.rk10/Desktop/dsalab5/" && g++ SortingMain.cpp -o SortingMain && "/Users/reewajkhanal.rk10/Desktop/dsalab5/
"SortingMain
~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~
751 625 995 206 38 733 748 367 103 838 666 305 887 607 845 34 377 664 741 325 63 774 590 77 50 446 78 980 255 15 477 665 564 37 14 368 607 690 99
623 281 464 19 162 678 256 898 602 692 612
After sorting: 14 15 19 34 37 38 50 63 77 78 99 103 162 206 255 256 281 305 325 367 368 377 446 464 477 564 590 602 607 607 612 623 625 664 665
666 678 690 692 733 741 748 751 774 838 845 887 898 980 995
Array Length: 50
Time Consumed: 0.012 ms

[Done] exited with code=0 in 1.134 seconds
```

Graph between time and random numbers:



GitHub Repository Link:
https://github.com/reewajkhanalrk10/dsalab5