

CSE | 204

Data Structures

Sessional

QUICK SORT
&
MERGE SORT

Name: Tahmeed Tarek

Roll: 1705039

Date: 27-07-2019

MACHINE CONFIGURATION

Processor: Intel (R) Core (TM) i5-8250U CPU @ 1.60GHz

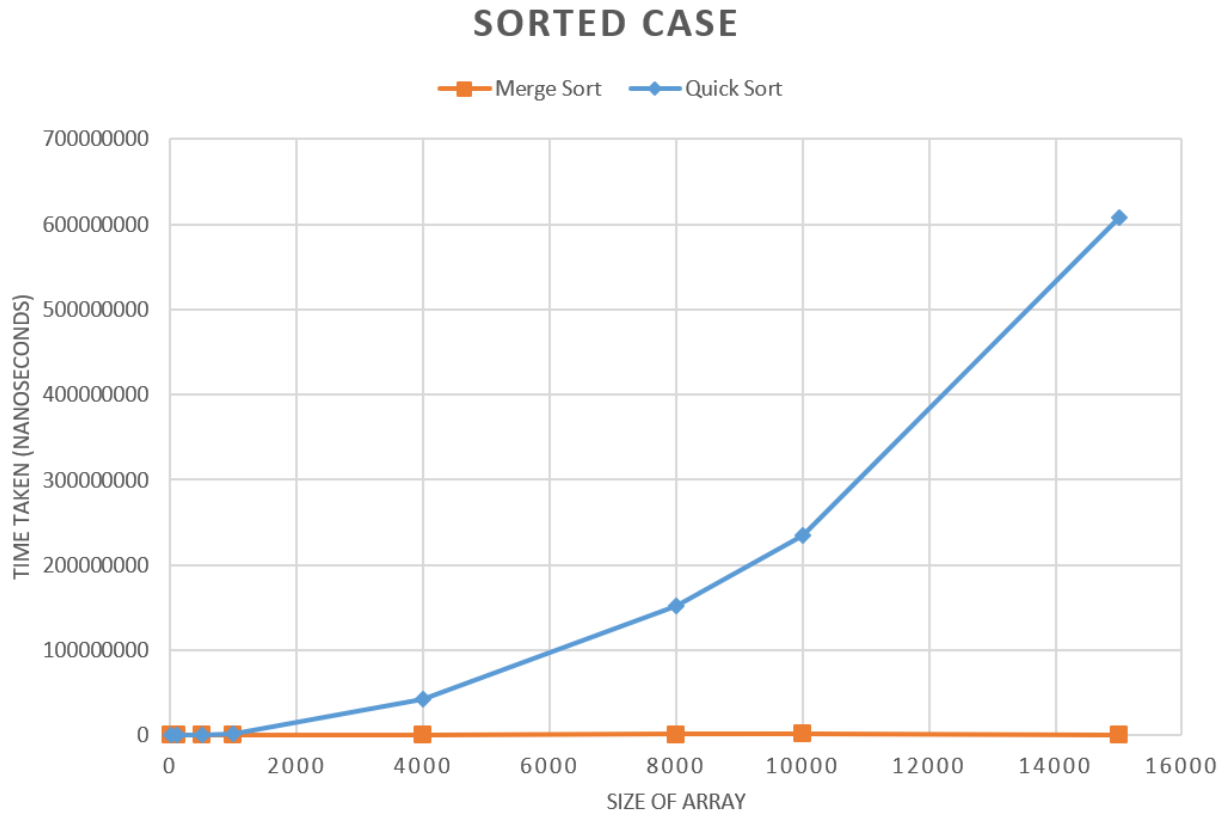
RAM: 8GB DDR4

Operating System: Windows 10 64-bit

TIME COMPLEXITY

Type	Quick sort	Selection sort
Sorted	$O(n^2)$	$O(n \log n)$
Random	$O(n \log n)$	$O(n \log n)$
Reverse Sorted	$O(n^2)$	$O(n \log n)$

SORTED CASE



n	Quick Sort	Merge Sort
10	0	9980
100	19970	19940
500	917370	19960
1000	1662850	59840
4000	42865950	308780
8000	151628340	1300030
10000	234694920	1818060
15000	607346010	1206870

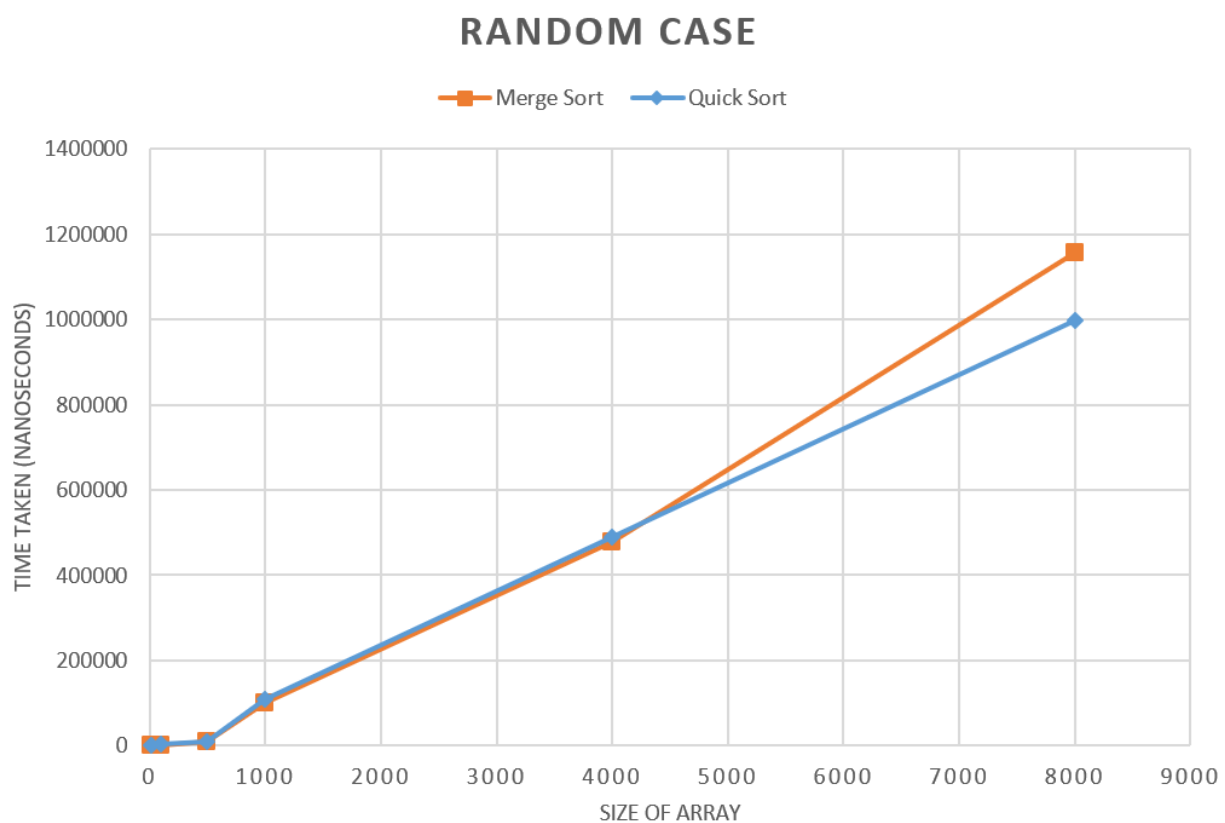
REVERSE CASE

REVERSE SORTED CASE



n	Quick Sort	Merge Sort
10	0	0
100	39890	0
500	498640	49870
1000	1925150	59910
4000	30609360	358590
8000	125674990	697020
10000	203964930	886850
15000	508967330	1547570

RANDOM CASE



n	Quick Sort	Merge Sort
10	0	0
100	3100	2001
500	8978	9970
1000	109740	99670
4000	488710	478610
8000	997560	1157830