Report: Short Project 1

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1 Merge Sort

Running time of generic merge sort, int merge sort and nSquareSort on array with size from 1 million to 16 million is listed in table 1 and plotted in fig. 1a and fig. 1b, all running time are in milliseconds.

All executions were performed on department virtual machine `dc10` to `dc25`.

Table 1: Running Time Comparison

Array Size	Generic Merge Sort	Int Merge Sort	N-Square Sort
1	332	152	1,303,924
2	779	315	5,596,480
3	1,189	501	11,571,927
4	1,631	659	22,787,616
5	2,117	836	33,913,957
6	2,614	1,022	49,299,890
7	3,070	1,202	62,519,820
8	3,447	1,369	80,586,296
9	4,145	1,550	106,351,047
10	4,560	1,763	138,835,814
11	5,268	1,941	151,956,006
12	5,606	2,122	205,003,230
13	6,168	2,311	236,216,225
14	6,735	2,483	242,334,996
15	7,406	2,656	295,837,662
16	7,848	2,909	335,962,121

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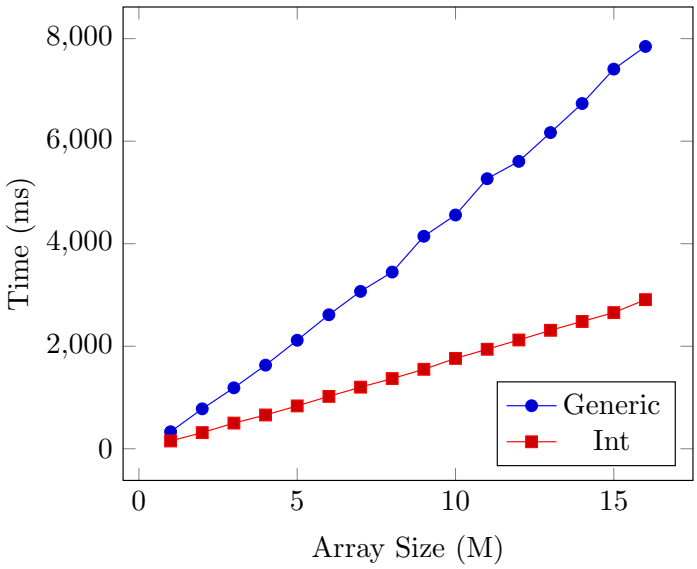
Figure 1: Plot of Three Sort Functions

(a) Plot of Two Merge Sort



(b) Plot of N Square Sort