

Implement and compare the running times of the following algorithms on randomly generated arrays:

- (a) Insertion sort,
- (b) Merge sort (take 1),
- (c) Merge sort (take 2),
- (d) Merge sort (take 3).

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Number of Trials for Insertion sort: 1

Number of Trials for Merge sort (Take1, Take2, Take3): 100

Observations (Time Taken):

Algorithm	Insertion Sort	Merge Sort (Take1)	Merge Sort (Take2)	Merge Sort (Take3)
n=1M	Infinity	232 msec	174 msec	169 msec
n=2M	Infinity	512 msec	470 msec	374 msec
n=4M	Infinity	1084 msec	966 msec	779 msec
n=8M	Infinity	2295 msec	1893 msec	1672 msec
n=16M	Infinity	3104 msec	2481 msec	2416 msec
n=32M	Infinity	6605 msec	5514 msec	5274 msec
n=64M	Infinity	13936 msec	11348 msec	11067 msec
n=128M	Out of Memory	Out of Memory	Out of Memory	Out of Memory