

Merge sort intro

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Merge sort: Dividing an array into two halves, sort the two halves, and then merge the results.

Pros: $O(n) = N \log N$

Cons: requires auxiliary arrays for merging, and this extra space is proportional to N (the length of array).

input	M	E	R	G	E	S	O	R	T	E	X	A	M	P	L	E	
sort left half	E	E	G	M	O	R	R	S		T	E	X	A	M	P	L	E
sort right half	E	E	G	M	O	R	R	S		A	E	E	L	M	P	T	X
merge results	A	E	E	E	E	G	L	M	M	O	P	R	R	S	T	X	

Mergesort overview