

Notation: underlining is used to denote partitions; grey colored text indicates a partition that has been sorted.

45 32 17 46 48 49 60 96 83 97
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When performing a merge step, we are essentially taking two sorted lists (typically implemented as sorted subsections of an array) & combining them together into a new list. When doing this, we only need to compare the front of each list, place the smaller one into the target, & move down the list we took from (shown below as crossing of the copied item). For example, assume we have the two sorted lists & an empty target array:

32 45 17 46 48 _____.

Here's how they merge step by step:

32 45 ~~17~~ 46 48 17 _____.
~~32~~ 45 ~~17~~ 46 48 17 32 _____.
~~32~~ ~~45~~ ~~17~~ 46 48 17 32 45 _____.
~~32~~ ~~45~~ ~~17~~ ~~46~~ 48 17 32 45 46 _____.
~~32~~ ~~45~~ ~~17~~ ~~46~~ ~~48~~ 17 32 45 46 48.