

Mandatory Exercise: Range Reporting

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1 Sorted Subarrays Let A be an array of n numbers from \mathcal{R} . Give an efficient (space and query time) data structure that supports the following operation.

- $\text{sort}(i, j)$: return the sorted sequence of the numbers in $A[i, j]$.

Your space should be $O(n \log n)$. Your query time should be output sensitive, i.e., achieve a bound of the form $f(n) + \text{occ} \cdot g(n)$, where occ is the length of the returned sequence and $f(n)$ and $g(n)$ are small functions of n . Ignore preprocessing time.