

K largest from an array of size n in $n \log k$

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1 Problem statement

Given an (unsorted) array of n elements, return the largest k elements.

- Simplistic, obvious approach? ($n \log n$)
- You are asked to do it in $(n \log k)$.
- You will not get full marks if your code's runtime is not $O(n \log k)$.
- To clarify any misunderstanding on the correct parameters, here is the function's signature. Fill-in the blanks.

```
1 def largest_k(a,k=1):  
2     """a is an array of n elements. We return an array of the k largest."""  
3     return b
```