



BINARY SEARCH

Given a list of integers -

10	5	7	2	0	11	8	7	3	3	4	9	1
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How could we find the value 9?

We could search the list sequentially - Traversing the list from left to right, and stopping when we reach the value.

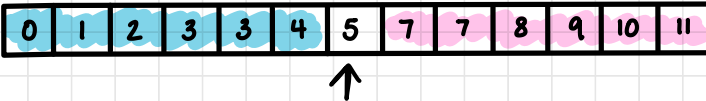


With Binary Search, we can conduct this search more efficiently.

The first step is to sort the data if it is not already sorted.



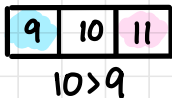
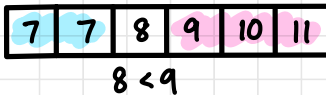
Now divide the sorted data in half.



Check the value at index $\text{length}/2$

Since $5 < 9$, we throw out the left half of the list.

Now, repeat this process.



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 Done!