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# 1   Problem statement

You are given an array of length $n$ that is filled with two symbols (zeros and ones); all $m$ copies of zero appear first, at the beginning of the array, followed by all $n - m$ copies of one. You are to find the index of the first copy of one, $m$, in time $O(logm)$.

## 1.1   Example

- If the input array is $[0,0,0,0,0,1,1,1,1,1,\ldots]$, you should return 5

- If the input array is $[1,1,1,1]$, you should return 0

- If the input array is $[0,0,0,0,0]$, you should return None

  But, in all cases, your runtime should be a function of the number of zero, not the length of the whole array.