

Algorithm for Binary Search

1. def. Binary Search
2. $n = \text{len}(a)$
3. $\text{beg} = 0$
4. $\text{end} = n-1$
5. $\text{result} = -1$
6. while($\text{beg} \leq \text{end}$):
7. $\text{mid} = (\text{beg} + \text{end})/2$
8. If($a[\text{mid}] \leq x$):
9. $\text{beg} = \text{mid} + 1$
10. $\text{result} = \text{mid}$
11. else:
12. $\text{end} = \text{mid} - 1$
13. return result

EXAMPLE:

0	1	2	3	4	5	6
11	17	18	45	50	71	95

Search 50

L=0	1	2	M=3	4	5	H=6
11	17	18	45	50	71	95

$50 > 45$

Take 2nd half

0	1	2	3	L=4	M=5	H=6
11	17	18	45	50	71	95

$50 < 71$

Take 1st half

0	1	2	3	L=4		
11	17	18	45	50	71	95

50 found at position=4

