

# Binary Search

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Left Subarray

Right Subarray

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
11	22	33	44	55	66	77	88	99

① Key = 99. left mid Right

② L = 0  
R = 8  
M = 4

③  $99 \neq 55 \rightarrow$  no  
go to step 4

④ key is greater  
check in Right subarray.

[5]	[6]	[7]	[8]
66	77	88	99

left mid Right

② L = (mid+1) = 5  
R = 8  
M = 6

③  $99 \neq 77$ ; no.  
go to step 4

④ check in RSA

RSA

[7]	[8]
88	99

left Right  
mid

② L = (mid+1) = 7  
R = 8  
M = 7

③  $99 \neq \text{arr}[mid]$   
no, go to step 4

④ check in RSA as  
99 is greater.

RSA - mid + 1 to Right

RSA

[8]
99

left  
Right  
mid

② L = (mid+1) = 8  
R = 8  
M = 8

③ Key == arr[mid]  
 $99 == 99$   
key found at index 8