

# \*Search in Rotated Sorted Array II

input length  
→  
→

7 7 7 8 8 9 9 9 1 1 2 3 4

$t=8$   
 $t=2$

if  $(t == mid) \Rightarrow$  return true.

$t=8 \Rightarrow$  search in first half  
 $r = (m-1)$

$t=2 \Rightarrow$  search in second half  
 $l = m+1$

worst case  $\rightarrow O(N)$   
best case  $\rightarrow O(\log N)$

7 8 9 0 1 1 1 2 2 2 2 3 4

$t=9 \Rightarrow$  search in 2nd half  
 $l = mid+1$

$t=0 \Rightarrow$  search in 1st half  
 $r = mid-1$

both equals to mid

• 1 1 1 0 1 1 1 1

↗  
↘

when ~~left~~ left element = right element  
we can't do predictions to search,  
Then we have to move both pointers,  
 $l++$ ,  $r--$

Space  $\rightarrow O(1)$