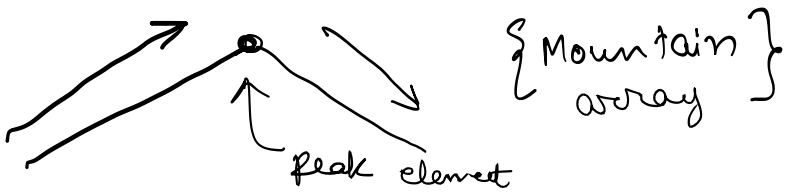
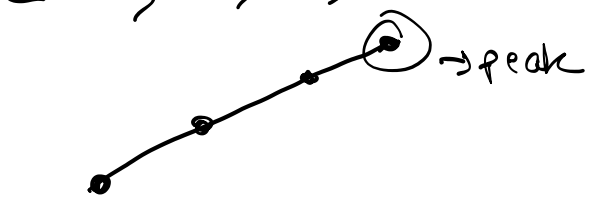
Peak element

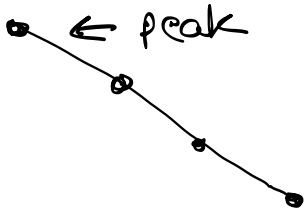
[1, 2, 3, 2, 1]



[1, 2, 3, 5]

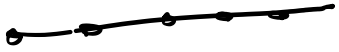


[5, 3, 2, 1]



} sorted descendig

[2, 2, 2, 2]



} Not a mountain array

① Linear Search

[1, 2, 4, 2, 1]

Condition for peak element

① if $i == 0$ $\quad arr[i+1] < arr[i]$

$\Rightarrow arr[1] < arr[0]$

② if $i == n-1$

$arr[i-1] < arr[i]$

$\Rightarrow arr[n-2] < arr[n-1]$

③ if $i \neq 0$ & $i \neq n-1$

$arr[i-1] < arr[i] > arr[i+1]$

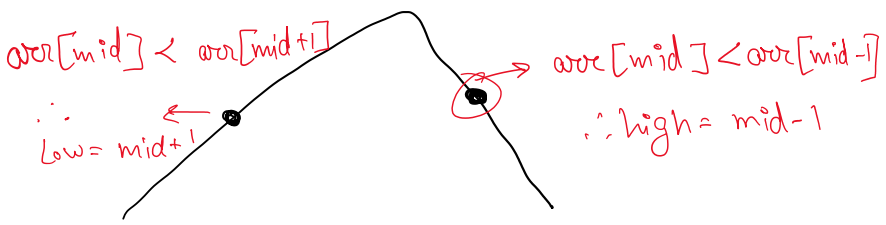
Binary Search

$[1, 2, 3, 0]$ (indices 0, 1, 2, 3)

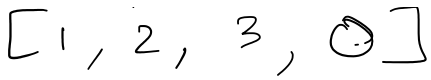
low = 0

high = 3

$mid = \frac{low + high}{2}$



0 1 2 3



low = 0 2

high = 3

mid = 1 2

arr [mid] < arr [mid+1]

low → mid+1

arr [mid-1] < arr [mid] > arr [mid+1]

return mid