26/9/23

-:° Lacture-13 °:-

-:° Binary Search [Part-2] °:-

Q.1 First and last element of sorted array

You have a given sorted array of N element. Now you have to find 1st and occurance of an sorted array
If element is not present return -1.

Solu: Array is sorted → Search → O(log n)
→ binary Search

→ First occurance /left most occurance

0	1	2	3	4
1	2	3	3	5

mid = (s+e)/2 = (0+4)/2
= 2.

ans = 2

Right occurance / Right most occurance

5 > 3

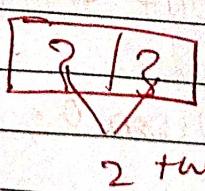
if (arr[mid] > key)
{ end = mid-1 }

if arr[mid] < key
start = mid+1

= Pair <int, int > P;

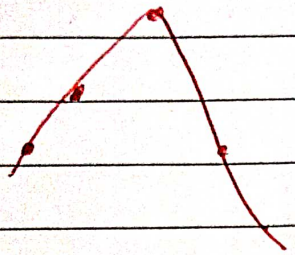
5, 7.

pair <int, int > P;
P.first = 5
P.second = 7

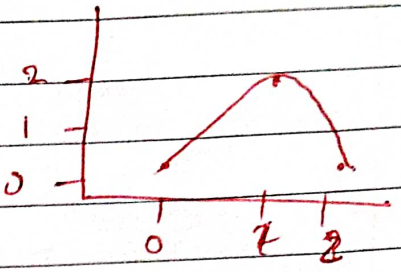


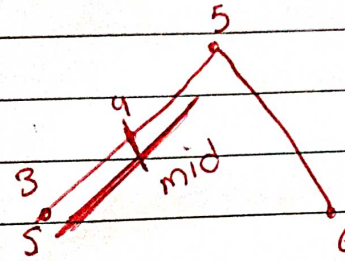
= Peak inden in mountain Array :-

0	10	5	2



0	1	0





3	4	5	1

mid = $\left(\frac{0+3}{2}\right) = 1.$

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if (arr[mid] < arr[mid+1]
        s = mid+1;

else
    { end = mid;
```