

L-91

÷ Binary Search Questions ÷ - ③

→ Bitonic Array ←

↳ Mountain Array

Bitonic Array Example :

÷ Strictly Increasing

: [2, 4, 11, 19, 17, 8, 1]

→ Q :

Find the Minimum Element in an Bitonic Array.

arr [ ] = { 2, 5, 7, 11, 13, 9, 1 }

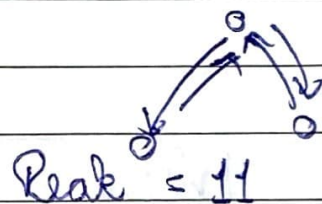


• Minimum Element of a Binary Array.  
 $\text{min} \rightarrow (\text{arr}[0], \text{arr}[\text{arr.length}-1]);$

→ Q: Find Peak / Max / Binary Point in array.

$\text{arr}[7] = \{2, 4, 6, 11, 9, 7, 3, 13\};$

• Binary Array.



→ • Unique Property of Element or Peak Element

4, 6, (11), 9, 7  
 ↓  
 Peak

• 11 is the only element which is greater element than both of its side elements

Note: From this concept we need to find 2 things in our array.

① Previous  $\rightarrow \text{mid} - 1$

② Next  $\rightarrow \text{mid} + 1$

-1, 0, 1, 2, 3, 4, 5, 6.

$$= (\text{mid} - 1 + N)$$

$$= (0 - 1 + 7)$$

$$= (-1 + 7)$$

$$= 6.$$

Previous : Modulus Operation

→ Also  $N-1$

$$\text{previous} \rightarrow (\text{mid} - 1 + N) \% N$$

Note:

• Now that,

$$\left\{ \begin{array}{l} \text{Previous will be} \rightarrow (\text{mid} - 1 + N) \% N \\ \text{Next will be} \rightarrow (\text{mid} + 1) \% N. \end{array} \right\}$$

→ Q: Search an element in an Fibonacci Array.

arr[] = [2, 4, 6, 7, 5, 3, 2, 1]

① Find Fibonacci Point in the given array.