**Time Complexity of Binary Search**

After first iteration, length of array = n

After second iteration, length of array = n/2

After third iteration, length of array = (n/2)/2 = n/(2^2)

After k iterations, length of array = n/(2^k)

Let the length of array become 1 after k iterations

=> n/(2^k) = 1

=> n = 2^k

=>log2(n= log2 (2^k)

=>log2(n)= klog22

=>k = log2n

Time Complexity = O(log2n)