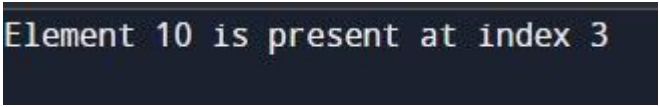


87.Binary Search

AIM: To search an element in an array using binary search by divide and conquer method

PROGRAM:

```
def binary_search(arr, target):  
    left, right = 0, len(arr) - 1  
    while left <= right:  
        mid = (left + right) // 2  
        if arr[mid] == target:  
            return mid  
        elif arr[mid] < target:  
            left = mid + 1  
        else:  
            right = mid - 1  
    return -1  
  
arr = [2, 3, 4, 10, 40]  
target = 10  
result = binary_search(arr, target)  
if result != -1:  
    print(f"Element {target} is present at index {result}")  
else:  
    print(f"Element {target} is not present in the array")
```



```
Element 10 is present at index 3
```

OUTPUT:

TIME COMPLEXITY: $O(\log n)$