

82. Binary search

Code:

```
def binary_search(arr, target, low, high):
    if low <= high:
        mid = (low + high) // 2

        if arr[mid] == target:
            return mid
        elif arr[mid] < target:
            return binary_search(arr, target, mid + 1, high)
        else:
            return binary_search(arr, target, low, mid - 1)
    return -1
arr = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
target = 5
result = binary_search(arr, target, 0, len(arr) - 1)
print(f"Target {target} found at index: {result}")
```

Output:

```
Target 5 found at index: 4
```

Time Complexity:

- $T(n) = O(\log n)$