```java
public int search(int[] nums, int target) {
    if (nums.length == 0 || nums == null) {
        return -1;
    }

    int start = 0;
    int end = nums.length - 1;

    while (start + 1 < end) {
        int mid = start + (end - start) / 2;
        if (nums[mid] == target) {
            end = mid;
        } else if (nums[mid] < nums[end]) {
            if (nums[mid] <= target && target <= nums[end]) {
                start = mid;
            } else {
                end = mid;
            }
        } else {
            if (nums[mid] >= target && target >= nums[start]) {
                end = mid;
            } else {
                start = mid;
            }
        }
    }

    if (nums[start] == target) {
        return start;
    }
    if (nums[end] == target) {
        return end;
    }
    return -1;
}
```

总结

- 理解二分法的三个层次：

1. 头尾指针，取中点，判断往哪儿走
2. 寻找满足某个条件的第一个或是最后一个位置
3. 保留剩下来一定有解的那一半

- 二分法模板的四点要素

  start + 1 < end

  start + (end - start) / 2

  nums[mid] ==, <, >

  nums[start] nums[end] 与target关系