# Binary Search

```
int binarySearch(int[] nums, int target){

  // Edge Case 处理
  if (nums == null || nums.length == 0) {
    return -1;
  }

  // 定义前后指针
  int start = 0, end = nums.length - 1;

  //要点 1 start and end keep approaching to each other
  while(start + 1  < end) {

    //要点 2: 求出 mid 的位置
    int mid = start + (end - start) / 2;

     //要点 3: 通过 if statement来缩小范围
    if(nums[mid] == target) {
       return mid;
    } else if (nums[mid] < target) {
      start = mid;
    } else {
      end = mid;
    }

     //要点 4 循环结束后 单独处理start 和 end
    if (nums[start] == target) {
      return start;
    }
    if (nums[end] == target) {
      return end;
    }

    return -1;
}
```