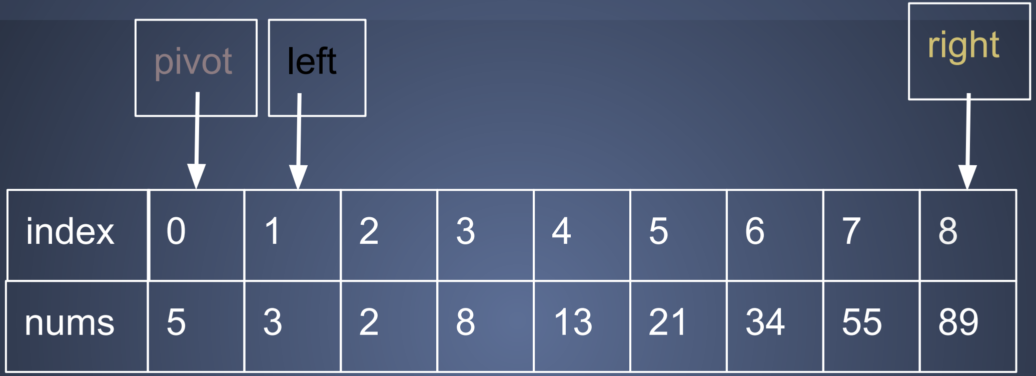
## 2.0 merge sort general ideas

```
int mid = ( lo + hi ) / 2;
mergeSort(data, lo, mid);
mergeSort(data, mid + 1, hi);
merge(data, lo, mid, mid + 1, hi, tmp)
copy sorted num from tmp to data
```

## Merge: scan two arrays from head -> tail

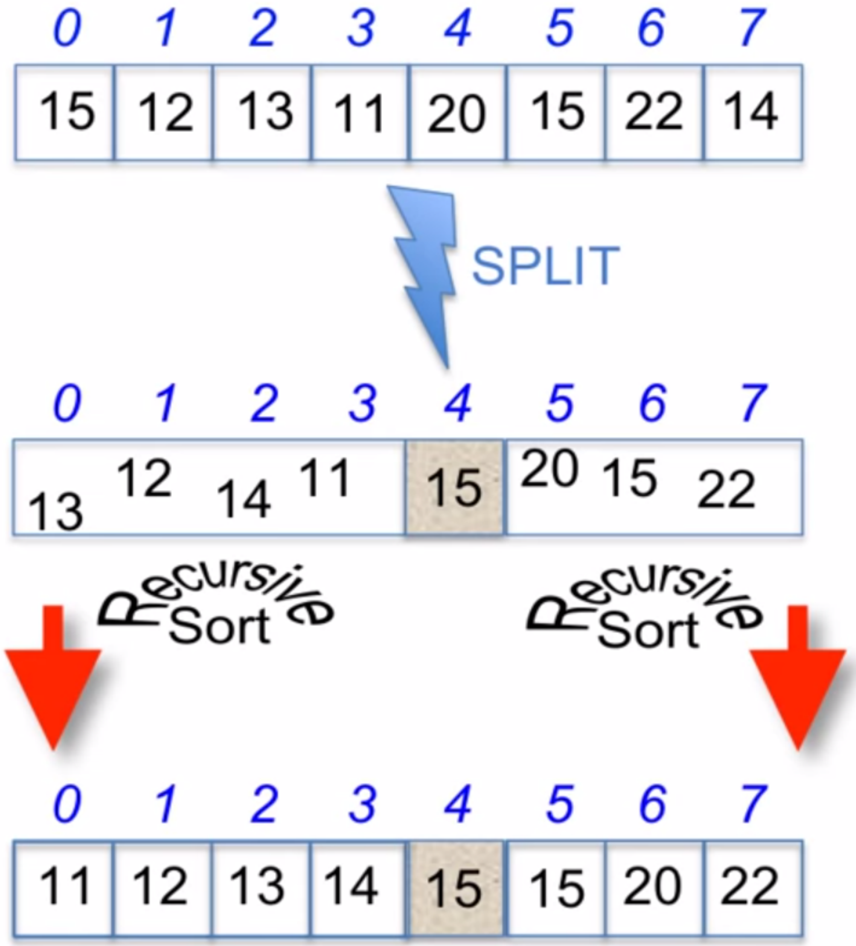
[https://github.com/xxu46/codingAbility/blob/master/ThirdClass.java](https://github.com/xxu46/codingAbility/blob/master/ThirdClass.java)
330 lines

# 3.0 quick sort, 不断地固定下位置



| index | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| nums | 5 | 3 | 2 | 8 | 13 | 21 | 34 | 55 | 89 |

1. left, right are two borders, records numbers that are less than and greater than pivot value. finally swap pivot and left. we find pivot relative position has already 固定下来。接下来是 recursively use quick sort pivot



DIVIDE
AND
CONQUER