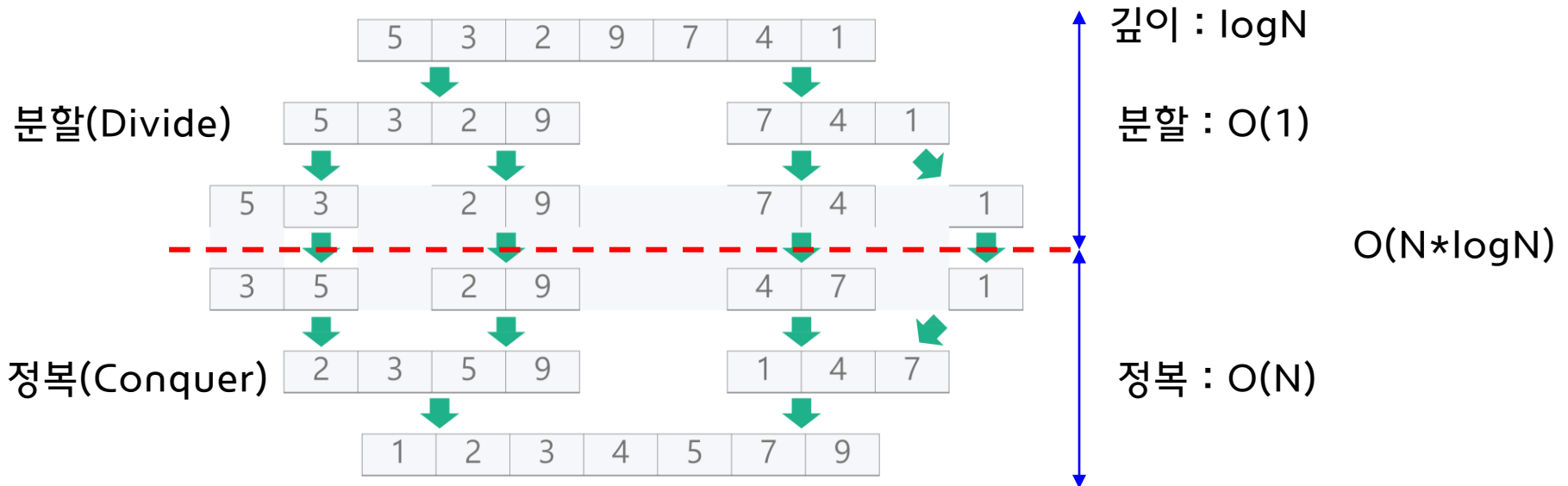


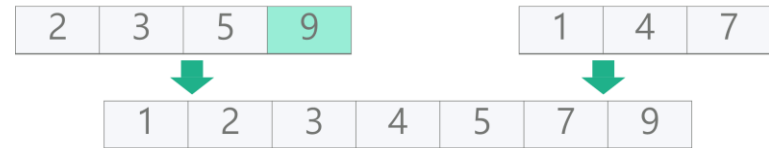
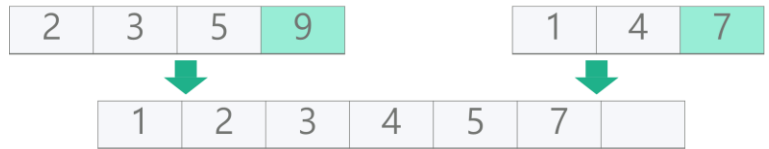
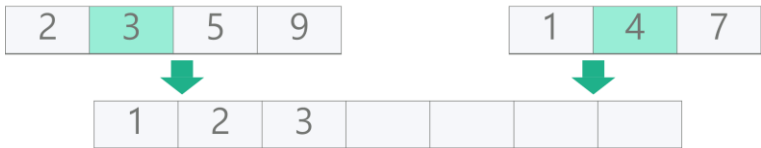
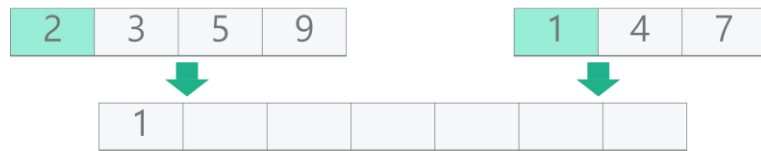
분할(Divide) & 정복(Conquer)

▣ 머지소트

- N개를 정렬하는 알고리즘
- N개를 $N/2$, $N/2$ 개로 나눈다.
- 왼쪽 $N/2$ 와 오른쪽 $N/2$ 를 정렬한다.
- 두 정렬한 결과를 하나로 합친다.



분할(Divide) & 정복(Conquer)



분할(Divide) & 정복(Conquer)

```
vector<int> a;
void merge(int start, int end) {
    vector<int> b(end - start + 1);
    int mid = (start + end) / 2;
    int i = start, j = mid + 1, k = 0;
    while (i <= mid && j <= end) {
        if (a[i] <= a[j]) b[k++] = a[i++];
        else b[k++] = a[j++];
    }
    while (i <= mid) b[k++] = a[i++];
    while (j <= end) b[k++] = a[j++];
    for (i = start; i <= end; i++) {
        a[i] = b[i - start];
    }
}
```

```
void merge_sort(int start, int end) {
    if (start == end) {
        return;
    }
    int mid = (start + end) / 2;
    merge_sort(start, mid);
    merge_sort(mid + 1, end);
    merge(start, end);
}
```