

## ARRAY-PARTITION

### I. Java implementation

#### partition

```
@Assertion(value = { @Case(pre = "a !=null && n>2 && a.length==n ", post =
    "isWeaklySorted()") })
public void partition() {
    // assume (n > 2);
    pivot = a[0];
    lo = 1;
    hi = n - 1;
    while (lo <= hi) {
        while (lo <= hi && a[lo] <= pivot)
            lo++;
        while (a[hi] > pivot)
            hi--;
        if (lo < hi) {
            tmp = a[hi];
            a[hi] = a[lo];
            a[lo] = tmp;
        }
    }
}
```

#### isWeaklySorted

```
boolean isWeaklySorted() {
    assert a.length > 2;
    boolean firstPart = true;
    for (int i = 1; i < a.length; i++) {
        if (firstPart && a[i] > a[0]) {
            firstPart = false;
        } else if (!firstPart && a[i] <= a[0]) {
            return false;
        }
    }
    return true;
}
```