```
# I think this runs in O(n log n)

function majorityElement(A, low, high):
    if low == high:
        return A[low]

    mid = (low + high) / 2
    left_majority = majorityElement(A, low, mid)
    right_majority = majorityElement(A, mid + 1, high)

    if left_majority == right_majority:
        return left_majority

    left_count = countOccurrences(A, left_majority)
    right_count = countOccurrences(A, right_majority)

    if left_count > (high - low + 1) / 2:
        return left_majority

    elif right_count > (high - low + 1) / 2:
        return right_majority
    else:
        return None
```