

### Problem 3

```
Def MajorityElement(A):  
    IF len(A) == 1:  
        Return A[0]  
  
    n_half = floor{len(A)/2}  
  
    A1_majority = MajorityElement(A[0,1,2....n_half]):    // first half of the list  
    A2_majority = MajorityElement(A[n_half+1, ....n]):    // second half of list  
  
    IF A1_majority == A2_majority:  
        Return A1_majority  
  
    count_A1 = 0  
    count_A2 = 0  
  
    FOR i in range(len(A)):  
        IF A[i] == A1_majority:  
            count_A1 ++  
        ELIF A[i] == A2_majority:  
            count_A2 ++  
  
    IF count_A1 > n_half + 1:  
        Return A1_majority  
  
    ELIF count_A2 > n_half + 1:  
        Return A2_majority  
  
    ELSE:  
        Return -1
```