BINARY-SEARCH(A, e, begin, end)
    if begin == end then
       if A[begin] != e then
         return False
       else return False
    middle = (begin + end) / 2
    if A[middle] > e then
        return BINARY-SEARCH(A, e, begin, middle)
    if A[middle] < e then
        return BINARY-SEARCH(A, e, middle, end)