Binary Search

Prof. Hector Garcia-Molina

- We are given an array A of sorted integers
  Example:

  A | 3 | 7 | 12 | 13 | 21 | 43 | 44 | 45 | 62 | 69 | 75 | N=11

  - N is number of elements (N > 0)
  - A[1] is first element, A[N] is last
  - Variables A, N are global
  - There are no duplicates in array

- Your task: code following function
  Procedure FIND(V): returns FOUND, INDEX
  - V is integer we are looking for
  - If V is in array, FOUND is set to TRUE, else FALSE
  - If FOUND=TRUE, INDEX is location of V
  - Example:
    FIND(13) returns FOUND=TRUE, INDEX=4
    FIND(14) returns FOUND=FALSE
    FIND(87) returns FOUND=FALSE

- Use <u>binary search</u> for your procedure

- Extra credit: handling duplicates in array