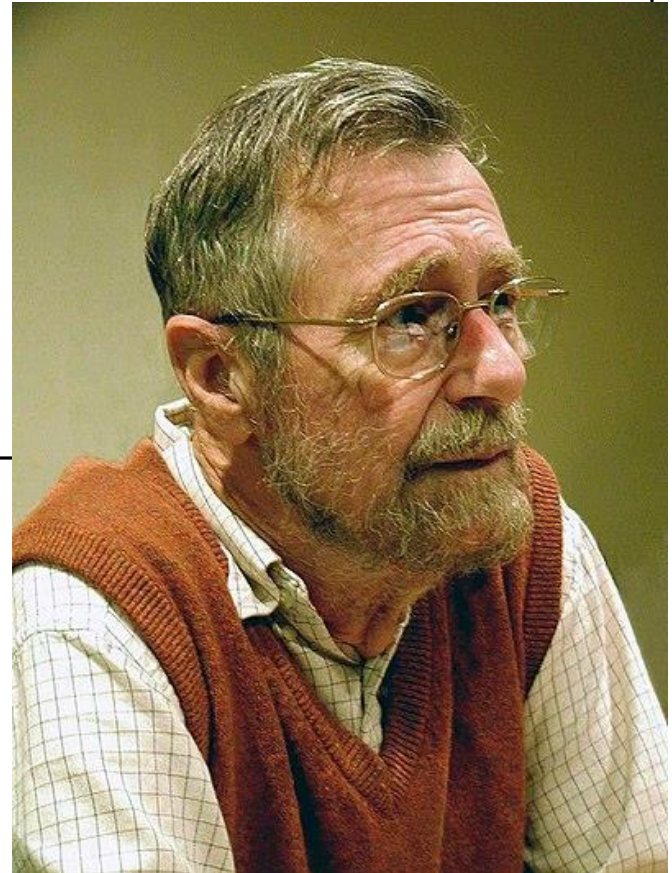


# Topic 25 - more array algorithms

"The art of programming is the art of organizing complexity, of mastering multitude, and avoiding its [awful] chaos as effectively as possible."  
- Edsger W. Dijkstra



# More array problems

- ▶ write a method to change an array to a sub-array, similar to substring method
- ▶ "rotate" elements in an array a given amount
- ▶ **determine how many elements in an array of Strings variables are set to null**
- ▶ determine if the elements in an array of ints or doubles are in sorted ascending order
- ▶ **Determine which character occurs most frequently in a file. Clicker 1:**
  - A. e      B. i      C. s
  - D. t      E. something else

# More array problems

- ▶ shuffle an array
- ▶ **determine the longest run length in an array of booleans (longest run of all booleans the same)**
- ▶ ensure all elements in an array are within a given range
- ▶ given an array with ints 1 to N determine if there are any duplicates in the array

# More array problems

- ▶ **given an array, create and return an array the same as the original expect all duplicates are removed**
- ▶ implement the sieve of Eratosthenes to find prime numbers
- ▶ We'll say that an element in an array is "alone" if there are values before and after it, and those values are different from it. Return a version of the given array where every instance of the given value which is alone is replaced by whichever value to its left or right is larger. (from coding bat)