

Fundamental Algorithms 7

K-Exercise 1

Modify the algorithm SeqSearch, such that it works on sorted arrays (i.e., stops the search as soon as the elements become too large). Make a reasonable assumption for the probability that x is found at position i or not found at all, and give an estimate of the expected number of comparisons that are required. How does the complexity differ from the “regular” SeqSearch algorithm?

K-Exercise 2

For the algorithm BinarySearch, as discussed in the lectures, formulate a recurrence equation for the number of comparisons and solve the recurrence to estimate the time complexity of BinarySearch.