

CSCI 303 Algorithms

Homework 8

Due: 11:00 in class, November 6, 2001

1. Consider the Quick Sort algorithm that always chooses the first number as its pivot.
 - (a) (5 points) Describe an input of size n that makes the algorithm to achieve the $O(n^2)$ time bound.
 - (b) (5 points) Describe an input of size n that makes the algorithm to achieve the $O(n \log n)$ time bound.
2. (10 points) Suppose that you have an array of n elements, containing three distinct keys: `true`, `false`, `maybe`. Give an $O(n)$ algorithm to rearrange the list so that all `false` elements precede `maybe` elements, which in turn precede `true` elements. You may use only constant extra space.