Solution

1.1 Suppose you have a sorted list of 128 names, and you're searching through it using binary search. What's the maximum number of steps it would take?

Answer: O($\log_2 128$) = 7 steps.

1.2 Suppose you double the size of the list. What's the maximum number of steps now?

Answer: O($\log_2 256$) = 8 steps.

1.3 You have a name, and you want to find the person's phone number in the phone book.

Answer: O (log n).

1.4 You have a phone number, and you want to find the person's name in the phone book.

(Hint: You'll have to search through the whole book!)

Answer: O(n).

1.5 You want to read the numbers of every person in the phone book. Answer: O(n).

1.6 You want to read the numbers of just the

As

Answer: O(n/26) and we will ignore numbers that are added, subtracted, multiplied, or divided as it doesn't matter, So the answer: O(n).

Solved by: Mohamed Eldagla, CS Sophomore Student at Egypt Japan University of Science and Technology.