Quick Sort Analysis (Take 1)

What is the best case and worst case for a pivot?

-Best case:

-Worst case:

Recurrences:

Best:

Worst:

Running times: -Best: -Worst:

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Proving the lower-bound Comparison Sorting Lower Bound

Any sorting algorithm which only interacts with its input by

comparing elements must take $\Omega(n \log n)$ time in the worst-case.

Our proof will use something called a "decision-tree."

It's a diagram showing the decisions our code will make (think "if-else branches").

We'll argue that any algorithm that takes $o(n \log n)$ time makes a mistake.



