**Analysis**

**Time Complexity Comparison:**

* **Bubble Sort:**
  + **Best Case:** O(n) (when the array is already sorted)
  + **Average Case:** O(n^2)
  + **Worst Case:** O(n^2)
* **Quick Sort:**
  + **Best Case:** O(n log n)
  + **Average Case:** O(n log n)
  + **Worst Case:** O(n^2) (when the pivot selection is poor, e.g., always choosing the smallest or largest element)

**Why Quick Sort is Preferred Over Bubble Sort:**

* **Efficiency:** Quick Sort is generally faster than Bubble Sort, especially for large datasets. Its average time complexity of O(n log n) is significantly better than Bubble Sort's O(n^2).
* **Divide-and-Conquer Approach:** Quick Sort's divide-and-conquer approach allows it to handle large datasets more efficiently by partitioning the array and sorting each part independently.
* **Scalability:** Quick Sort scales better with larger datasets compared to Bubble Sort, making it a more suitable choice for real-world applications where efficiency is critical.

Bubble Sort is simple to understand and implement but is inefficient for large datasets. Quick Sort, while more complex, provides much better performance and is widely used in practice for its efficiency.