1. **Compare the performance (time complexity) of Bubble Sort and Quick Sort.**

**Performance Comparison:**

* **Bubble Sort:**
  + **Best Case:** O(n)
  + **Average Case:** O(n2)
  + **Worst Case:** O(n2)
* **Quick Sort:**
  + **Best Case:** O(n log n).
  + **Average Case:** O(n log n).
  + **Worst Case:** O(n2) (though this is rare with good pivot selection).

1. **Discuss why Quick Sort is generally preferred over Bubble Sort.**

 **Efficiency:** Quick Sort is generally faster due to its O(n log n) average time complexity.

 **Scalability:** Quick Sort handles larger datasets more efficiently than Bubble Sort.

 **Optimization:** With good pivot selection and in-place sorting, Quick Sort can be very memory efficient.