**Bubble Sort:**

* **Description:** A simple comparison-based sorting algorithm that repeatedly steps through the list, compares adjacent elements, and swaps them if they are in the wrong order.
* **Time Complexity:**
  + Best Case: O(n)
  + Average Case: O(n^2)
  + Worst Case: O(n^2)
* **Space Complexity:** O(1)

**Insertion Sort:**

* **Description:** Builds the final sorted array one item at a time. It picks an element and inserts it into its correct position in the sorted part of the array.
* **Time Complexity:**
  + Best Case: O(n)
  + Average Case: O(n^2)
  + Worst Case: O(n^2)
* **Space Complexity:** O(1)

**Quick Sort:**

* **Description:** A divide-and-conquer algorithm. It selects a 'pivot' element and partitions the array into two sub-arrays according to whether elements are less than or greater than the pivot. It recursively sorts the sub-arrays.
* **Time Complexity:**
  + Best Case: O(n log n)
  + Average Case: O(n log n)
  + Worst Case: O(n^2)
* **Space Complexity:** O(log n)

**Merge Sort:**

* **Description:** A divide-and-conquer algorithm that divides the array into halves, recursively sorts them, and then merges the sorted halves.
* **Time Complexity:**
  + Best Case: O(n log n)
  + Average Case: O(n log n)
  + Worst Case: O(n log n)
* **Space Complexity:** O(n)

**Performance Comparison:**

* **Bubble Sort:**
  + Best Case: O(n)
  + 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)

**Why Quick Sort is Generally Preferred over Bubble Sort:**

* **Efficiency:** Quick Sort is generally much faster than Bubble Sort, especially for large datasets. It has an average-case time complexity of O(n log n), compared to Bubble Sort's O(n^2).
* **Scalability:** Quick Sort is more scalable due to its efficient handling of large arrays.
* **Adaptability:** Quick Sort can be optimized with techniques like choosing a good pivot (e.g., using the median-of-three method), which helps avoid the worst-case scenario.