|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sort Type | Data Set Size | Random (Time) | Descending (Time) | Ascending (Time) |
| Merge Sort | 100 | 20.5 | 56.6 | 56.3 |
| Merge Sort | 1000 | 119.6 | 103.8 | 99.9 |
| Merge Sort | 10000 | 1140.2 | 1174.1 | 1154.2 |
| Merge Sort | 100000 | 12677.6 | 7018.2 | 7005.2 |
| Quick Sort (Left Pivot) | 100 | 17.4 | 61.2 | 37.8 |
| Quick Sort (Left Pivot) | 1000 | 47.8 | 577.6 | 496.5 |
| Quick Sort (Left Pivot) | 10000 | 503.6 | 26048.5 | 10736.6 |
| Quick Sort (Left Pivot) | 100000 | 6131.2 | (Stack Overflow Error) | (Stack Overflow Error) |
| Quick Sort (Median Three Pivot) | 100 | 14.2 | 27.1 | 27.3 |
| Quick Sort (Median Three Pivot) | 1000 | 51.0 | 32.0 | 35.6 |
| Quick Sort (Median Three Pivot) | 10000 | 553.7 | 246.5 | 284.7 |
| Quick Sort (Median Three Pivot) | 100000 | 6569.67 | 2166.8 | 1635.5 |
| Quick Sort (Random Pivot) | 100 | 20.5 | 59.3 | 55.2 |
| Quick Sort (Random Pivot) | 1000 | 56.3 | 73.8 | 58.7 |
| Quick Sort (Random Pivot) | 10000 | 623.6 | 446.3 | 539.5 |
| Quick Sort (Random Pivot) | 100000 | 7199.2 | 3722.8 | 3631.8 |

Quick Sort with a Left Pivot when met with a reverse ordered, or ordered array takes a significantly large time due to being O(N^2). The Median Three Pivot and the Random Pivot seems to be having significantly lower speeds in comparison O(N log N).

Merge Sort also has a O(N log N) speed but is let down since there are multiple copying of values to and fro.