|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Algo/size | experiment | 5000 | 10000 | 20000 | 25000 |
| Selection Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0.072 | 0.1208 | 0.755 |
| #1 | 0.036 | 0.153 | 0.604 | 0.904 |
| #2 | 0.034 | 0.158 | 0.583 | 0.927 |
| Counting Sort | F(n) = O(m+n) | 5099 | 10099 | 20099 | 25099 |
| Calculated Time | ----------------- | 0 | 0 | 0.00125 |
| #1 | 0 | 0 | 0.001 | 0.001 |
| #2 | 0 | 0 | 0.001 | 0.001 |
| Insertion Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0 | 0 | 0 |
| #1 | 0 | 0 | 0 | 0 |
| #2 | 0 | 0 | 0 | 0 |
| Merge Sort | F(n) = O(nlogn) | 61438.5619 | 132877.123 | 285754.2 | 365241 |
| Calculated Time | ----------------- | 0.01 | 0.012 | 0.187 |
| #1 | 0.005 | 0.006 | 0.015 | 0.026 |
| #2 | 0.003 | 0.009 | 0.013 | 0.022 |
| Quick Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0.018 | 0.038 | 0.035 |
| #1 | 0.009 | 0.019 | 0.043 | 0.052 |
| #2 | 0.01 | 0.022 | 0.039 | 0.067 |
| Heap Sort | F(n) = O(nlogn) | 61438.5619 | 132877.123 | 285754.2 | 365241 |
| Calculated Time | ---------------- | 0.02 | 0.05 | 0.102 |
| #1 | 0.01 | 0.025 | 0.085 | 0.058 |
| #2 | 0.01 | 0.036 | 0.053 | 0.062 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Algo/size | experiment | 5000 | 10000 | 20000 | 25000 |
| Selection Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0.072 | 0.306 | 0.735 |
| #1 | 0.036 | 0.153 | 0.588 | 0.9342 |
| #2 | 0.034 | 0.17 | 0.618 | 1.017 |
| Insertion Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0 | 0 | 0 |
| #1 | 0 | 0 | 0 | 0 |
| #2 | 0 | 0 | 0 | 0 |
| Merge Sort | F(n) = O(nlogn) | 61438.5619 | 132877.123 | 285754.2 | 365241 |
| Calculated Time | ----------------- | 0.006 | 0.014 | 0.02 |
| #1 | 0.003 | 0.007 | 0.016 | 0.021 |
| #2 | 0.004 | 0.006 | 0.014 | 0.015 |
| Quick Sort | F(n)=O( | 25000000 | 100000000 | 400000000 | 625000000 |
| Calculated Time | ---------------- | 0.02 | 0.04 | 0.05 |
| #1 | 0.01 | 0.02 | 0.04 | 0.053 |
| #2 | 0.013 | 0.02 | 0.045 | 0.053 |
| Heap Sort | F(n) = O(nlogn) | 61438.5619 | 132877.123 | 285754.2 | 365241 |
| Calculated Time | ---------------- | 0.026 | 0.054 | 0.0612 |
| #1 | 0.013 | 0.027 | 0.049 | 0.048 |
| #2 | 0.009 | 0.017 | 0.061 | 0.058 |