\*Refer to attached JPEG’s for graph comparison of algorithms

\*Each sort was run 5 times and then the times were averaged

Selection Sort Data: Bubble Sort Data:

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 0 |
| 100 | 18.6 |
| 1,000 | 2831.8 |
| 5,000 | 69,219.2 |
| 10,000 | 168,528.6 |
| 25,000 | 838,603.8 |
| 50,000 | 3,130,758.4 |
| 100,000 | 12,676,195 |
| 175,000 | 39,881,718.4 |
| 250,000 | 80,862,730 |

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 1 |
| 100 | 21.4 |
| 1,000 | 1234.8 |
| 5,000 | 47,809.4 |
| 10,000 | 197,224.2 |
| 25,000 | 1,189,464.4 |
| 50,000 | 4,564,120.4 |
| 100,000 | 15,620,130.4 |
| 175,000 | 45,164,128.6 |
| 250,000 | 62,494,360.6 |

Insertion Sort Data:

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 0.2 |
| 100 | 4.6 |
| 1,000 | 253.6 |
| 5,000 | 6,625 |
| 10,000 | 23,010.4 |
| 25,000 | 79,977.6 |
| 50,000 | 273,580 |
| 100,000 | 700,240.2 |
| 175,000 | 1,344,425 |
| 250,000 | 1,964,040.2 |

Merge Sort Data: Iterative Merge Sort Data:

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 5.2 |
| 100 | 49.4 |
| 1,000 | 553 |
| 5,000 | 2,426.6 |
| 10,000 | 4,671 |
| 25,000 | 9,382.2 |
| 50,000 | 12,723 |
| 100,000 | 24,771 |
| 175,000 | 43,967.6 |
| 250,000 | 62,002.6 |

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 4.8 |
| 100 | 34 |
| 1,000 | 411.8 |
| 5,000 | 1,934 |
| 10,000 | 4,086 |
| 25,000 | 21,453 |
| 50,000 | 11,816.2 |
| 100,000 | 23,457.4 |
| 175,000 | 39,841.8 |
| 250,000 | 55,965.8 |

Quick Sort Data: Shell Sort Data:

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 1 |
| 100 | 7.8 |
| 1,000 | 100.8 |
| 5,000 | 513 |
| 10,000 | 1,249.4 |
| 25,000 | 2,405.2 |
| 50,000 | 17,542 |
| 100,000 | 7,139.2 |
| 175,000 | 13,065 |
| 50,000 | 19065.2 |

|  |  |
| --- | --- |
| **Size of Array** | **Time(ms)** |
| 10 | 0.6 |
| 100 | 6.4 |
| 1,000 | 120.6 |
| 5,000 | 804.2 |
| 10,000 | 1870.4 |
| 25,000 | 3937 |
| 50,000 | 5806.8 |
| 100,000 | 12213.2 |
| 175,000 | 22396.4 |
| 250,000 | 31523.6 |